

My Course Library – A Complete Rewrite

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1 Introduction

The content management system (CMS) *My Course Library* (in Swedish *Mitt Kursbibliotek*, MKB) can store and present article references, files, and many types of links to resources that teachers and librarians want to present to students. There exists a similar CMS, here called old MKB [1, 2], but the new MKB is not based on that – only the student user interface looks very similar. The reason for this complete rewrite was to reduce maintenance costs by having all systems developed at Lund University Libraries use the same framework, here called WebUtil framework¹. Old MKB is the last of the many library systems which doesn't use this framework.

¹A framework determines the system top level structure, the software architectural design and the implementation approach. The WebUtil framework has been developed by the technical department of Lund University Libraries, Head Office – and mainly by Salam Baker Shanawa, the head of this department. This framework has drawn upon experiences from many systems developed during several years.

With the new MKB course libraries, files, and resources can be protected based on many criteria such as student belonging to campus, university, or a certain course. User authentication is done using LDAP and LADOK [3, 4], but it's also possible to use only the MySQL database for testing purposes – this should probably be blocked in the production version.

The default student template can show any number of columns. Resources and “blocks” can be moved around more easily.

With the new MKB the librarians can avoid duplication and maintenance problems by using common presentations of resource branches.

The new MKB also has excellent internationalization and course libraries can be partly translated into many languages. The system will automatically choose the translation for the requested language if it is available, or otherwise the first available translation according to a list of languages.

Unfortunately the new MKB is not yet finished at the time of writing, however it can still be used. The important missing features are:

- refreshing of log-out timer (see [5] for solution)
- improved security (see [5] for solution using random session ID)
- show if resources and course libraries are shared
- copying of existing resources and course libraries (only shared now)
- limitation of selection of existing resources and course libraries
- locked courses
- link checking
- search and replace in multiple courses for admins (but you can use shared resources instead)
- better looking CSS for admin tool
- compact mode for “blocks”
- conversion tool for old database to new
- presentation of usage statistics.

Some of these points could be fixed quickly. Then we have a long wish list of features for future versions.

2 Installation

The MKB system requires the Perl scripting language with some modules [6, 7, 8, 9, 10, 11, 12], the MySQL database server [13], the Mimer SQL database driver [14], and an Apache web server [15]. It has been tested with Perl 5.8.8, MySQL 5.0.45 and 5.0.51, and Apache httpd 1.3.39 and 2.2.8 on Fedora 7 Linux [16] and Ubuntu 8.04 Linux, respectively (actually Kubuntu was used [17]). The Mimer SQL 9.2.4 driver was only tested on Fedora. Mimer is used for LADOK access to confirm that a student is enrolled on a certain course, but the new MKB has a fallback system in the local MySQL database for testing purposes, which might be blocked in a production system. The new MKB doesn't require any LoadModule statements in the Apache configuration, but it might be an advantage to use the `rewrite_module` in a production system. This is a much simpler installation than for the old MKB and the reason is that the new MKB uses its own log-in system based on that from the Ledfunk-database [5] and contacts LDAP and MySQL using Perl code for user authentication.

Unpack the tar.gz-archive in some catalog that the web server can reach. You need to manually create a directory `uploads` under `admin` with all permissions (`chmod a=rwx admin/uploads`). You also need to recreate symbolic links for other languages in the administrator templates, since they are only in English now – use the same technique that is used below to create a symbolic link structure. Configure the directories that should be available in a virtual host. Here is a simple example from `httpd.conf` (from Apache httpd 1.3.39, but exactly the same lines can be used on 2.2.8 but in another file):

```
<VirtualHost *>
ServerName hactar.lub.lu.se
ScriptAlias /mkb/mkb "/usr/local/mkb/mkb.pl"
ScriptAlias /mkb/mkbAdmin "/usr/local/mkb/admin/admin.pl"
Alias /mkb/en/ "/usr/local/mkb/templates/en/files/"
Alias /mkb/sv/ "/usr/local/mkb/templates/sv/files/"
Alias /mkb/admin/en/ "/usr/local/mkb/admin/templates/en/files/"
Alias /mkb/admin/sv/ "/usr/local/mkb/admin/templates/sv/files/"
<Directory "/usr/local/mkb/templates/en/files/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
<Directory "/usr/local/mkb/templates/sv/files/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
<Directory "/usr/local/mkb/admin/templates/en/files/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
<Directory "/usr/local/mkb/admin/templates/sv/files/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

```
# Configuration for a second separate MKB:
# ScriptAlias /mkb2/mkb "/usr/local/mkb2/mkb.pl"
# ScriptAlias /mkb2/mkbAdmin "/usr/local/mkb2/admin/admin.pl"
# Alias /mkb2/en/ "/usr/local/mkb2/templates/en/files/"
# Alias /mkb2/sv/ "/usr/local/mkb2/templates/sv/files/"
# Alias /mkb2/admin/en/ "/usr/local/mkb2/admin/templates/en/files/"
# Alias /mkb2/admin/sv/ "/usr/local/mkb2/admin/templates/sv/files/"
# Same <Directory /> configurations as above, but replace mkb with mkb2.
</VirtualHost>
```

It's possible to have several separate MKBs on the same web server, e.g. one for each university in a country. They each have a separate database but uses the same MySQL server and the same code base. The only difference is in the configuration files. You can create a copy of the MBK directory structure using this command line [18]:

```
dirs='find mkb -type d | sed 's|^mkb|mkb2|''; for dir in $dirs; do mkdir $dir; done
```

The following command line creates a structure with symbolic links to each file in the original structure [18]:

```
dirs='find mkb -type f | sed 's|^mkb||''; for dir in $dirs; do
ln -sf '/usr/local/mkb/$dir' 'mkb2/$dir'; done
```

Then you remove, copy from original, and edit the configuration files in the second MKB structure that you want to change.

In the rest of this report many section titles get their names from the files that are discussed.

2.1 Create the My Course Library Database

Three scripts for creating tables, filling the tables, and dropping the tables are presented in this section.

2.2 MKBCreateTables.pl

This script creates the tables for the database. It is a Perl script for maximum flexibility. This script uses InnoDB as database engine but in a production system you might use MyISAM by changing the value of `$engine`. It is good to use InnoDB during development since it will discover more errors, but the the new MKB doesn't rely on any special InnoDB features. You need to run the script in each configured MBK hierarchy. The database design should be relatively pure and follow standard data modeling. The database has some enhancements for future use, such as comments and tags (i.e. keywords). An empty database must be created using MySQL tools before running this script.

```

#!/usr/bin/perl

# Author: Mikael O. Bonnier

# use warnings; # Generates warnings.
use strict;
use DBI;
use lib '../lib/';
use MKBCfg;

my $engine = 'InnoDB'; # Alternative: MyISAM.

my $cfg = new MKBCfg;

my $dbh = DBI->connect( "DBI:mysql:$cfg->{db}::$cfg->{dbHost}",
    $cfg->{dbUser}, $cfg->{dbPasswd} );

$dbh->do(
    qq|CREATE TABLE Users (
        usId int(11) NOT NULL auto_increment,
        usUsername varchar(25) NOT NULL,
        usUpdated timestamp,
        PRIMARY KEY (usId),
        UNIQUE KEY usUsername (usUsername)
    ) ENGINE=$engine|
);

$dbh->do(
    qq|CREATE TABLE Librarians (
        lUsId int(11) NOT NULL,
        lManager int(11),
        lPassword varchar(25),
        lEmail varchar(50),
        lPhone tinytext,
        lMobile tinytext,
        lFirstname tinytext,
        lLastname tinytext,
        lAccess enum('r','w','rw','passed1','passed2','passed3') NOT NULL,
        lEntered timestamp,
        PRIMARY KEY (lUsId),
        FOREIGN KEY (lUsId) REFERENCES Users(usId),
        FOREIGN KEY (lManager) REFERENCES Librarians(lUsId),
        UNIQUE KEY lEmail (lEmail)
    ) ENGINE=$engine|
);

$dbh->do(
    qq|CREATE TABLE Templates (
        tId int(11) NOT NULL auto_increment,
        tDir tinytext,
        PRIMARY KEY (tId)
    ) ENGINE=$engine|
);

$dbh->do(
    qq|CREATE TABLE Langs (
        laId int(11) NOT NULL auto_increment,
        laLang char(5) NOT NULL,
        UNIQUE KEY laLang (laLang),
        PRIMARY KEY (laId)
    ) ENGINE=$engine|
);

$dbh->do(
    qq|CREATE TABLE DepartmentTexts (
        dtDId int(11) NOT NULL auto_increment,
        dtLaId int(11) NOT NULL,
        dtName tinytext,
        PRIMARY KEY (dtDId, dtLaId),
        FOREIGN KEY (dtLaId) REFERENCES Langs(laId)
    ) ENGINE=$engine|
);

$dbh->do(
    qq|CREATE TABLE Departments (
        dId int(11) NOT NULL,
        dParent int(11),
        dCode char(4),
        dURI text,
        PRIMARY KEY (dId),
        UNIQUE KEY dCode (dCode),
        FOREIGN KEY (dId) REFERENCES DepartmentTexts(dtDId),
        FOREIGN KEY (dParent) REFERENCES Departments(dId)
    ) ENGINE=$engine|
);

```

```

) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE Resources (
  rId int(11) NOT NULL auto_increment,
  rLaId int(11) NOT NULL,
  rTitle tinytext,
  rDescription text,
  rInfo text,
  rUpdated timestamp,
  rInserted timestamp,
  PRIMARY KEY (rId, rLaId),
  FOREIGN KEY (rLaId) REFERENCES Langs(laId)
) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE Courses (
  cId int(11) NOT NULL,
  cCode char(6) NOT NULL,
  cDCode char(4), # To be dropped after insert.
  cTId int(11),
  cUsId int(11),
  cOnlineStart date,
  cLevel enum('A','B','C','D','X'),
  PRIMARY KEY (cId),
  UNIQUE KEY cCode (cCode),
  FOREIGN KEY (cTId) REFERENCES Templates(tId),
  FOREIGN KEY (cUsId) REFERENCES Users(usId),
  FOREIGN KEY (cDCode) REFERENCES Departments(dCode)
) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE UserCourses (
  ucUsId int(11) NOT NULL,
  ucCId int(11) NOT NULL,
  PRIMARY KEY (ucUsId, ucCId),
  FOREIGN KEY (ucUsId) REFERENCES Users(usId),
  FOREIGN KEY (ucCId) REFERENCES Courses(cId)
) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE Articles (
  aRId int(11) NOT NULL,
  aAuthor text,
  aPublisher text,
  aCity text,
  aYear int(11),
  PRIMARY KEY (aRId)#,
#   FOREIGN KEY (aRId) REFERENCES Resources(rId)
) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE URIs (
  uRId int(11) NOT NULL,
  uURI text,
  uType enum('link','file','blob') NOT NULL,
  uVisited timestamp,
  PRIMARY KEY (uRId)#,
#   FOREIGN KEY (uRId) REFERENCES Resources(rId)
) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE Protections (
  pRId int(11) NOT NULL,
  pProtection enum('surface','university','course','passed1','passed2','passed3') NOT NULL,
  PRIMARY KEY (pRId)#,
#   FOREIGN KEY (pRId) REFERENCES Resources(rId)
) ENGINE=$engine|
);

$dbh->do(
qq|CREATE TABLE Comments (
  coId int(11) NOT NULL auto_increment,
  coRId int(11) NOT NULL,
  coComment text,
  coUpdated timestamp,
  coInserted timestamp,

```

```

        PRIMARY KEY (coId)#,
#     FOREIGN KEY (coRId) REFERENCES Resources(rId)
) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE Tags (
        tgId int(11) NOT NULL,
        tgTag tinytext,
        PRIMARY KEY (tgId)
    ) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE ResourceTags (
        rtgRId int(11) NOT NULL,
        rtgTgId int (11) NOT NULL,
        rtgUpdated timestamp,
        PRIMARY KEY (rtgRId, rtgTgId),
#     FOREIGN KEY (rtgRId) REFERENCES Resources(rId),
#     FOREIGN KEY (rtgTgId) REFERENCES Tags(tgId)
    ) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE CourseResources (
        crCId int(11) NOT NULL,
        crRId int(11) NOT NULL,
        crParent int(11),
        crPriority int,
        PRIMARY KEY (crCId, crRId),
        FOREIGN KEY (crCId) REFERENCES Courses(cId)#,
#     FOREIGN KEY (crRId) REFERENCES Resources(rId),
#     FOREIGN KEY (crParent) REFERENCES Resources(rId)
    ) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE UserResources (
        urUsId int(11) NOT NULL,
        urRId int(11) NOT NULL,
        PRIMARY KEY (urUsId, urRId),
        FOREIGN KEY (urUsId) REFERENCES Users(usId)#,
#     FOREIGN KEY (urRId) REFERENCES Resources(rId)
    ) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE DepartmentCourses (
        dcDId int(11) NOT NULL,
        dcCId int(11) NOT NULL,
        PRIMARY KEY (dcDId, dcCId),
        FOREIGN KEY (dcDId) REFERENCES Departments(dId),
        FOREIGN KEY (dcCId) REFERENCES Courses(cId)
    ) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE DepartmentResources (
        drDId int(11) NOT NULL,
        drRId int(11) NOT NULL,
        PRIMARY KEY (drDId, drRId),
        FOREIGN KEY (drDId) REFERENCES Departments(dId)#,
#     FOREIGN KEY (drRId) REFERENCES Resources(rId)
    ) ENGINE=$engine!
);

$dbh->do(
    qq|CREATE TABLE Sessions (
        sId int(11) NOT NULL auto_increment,
        sIp char(15) NOT NULL,
        sUsId int(11) NOT NULL,
        sArrived timestamp,
        sLatest timestamp,
        PRIMARY KEY (sId),
        FOREIGN KEY (sUsId) REFERENCES Users(usId)
    ) ENGINE=$engine!
);

$dbh->disconnect;
--END--

```


2.3 MKBInsert.pl

If you want a test database with sample data and that imports courses from Lund University LADOK (Swedish student documentation system) [3, 4] you should run `MKBInsert.pl`. This script also fills the `Langs` table that contain language codes and IDs. These IDs must start at 1 and then increase in steps of 1 and the sequence must have no gaps. A lower ID means higher priority. This priority is used to choose the translation if there is no translation available for the requested language. The system will then choose the available translation with the lowest ID. In order to run MKB without errors you must also create the corresponding directories for each supported language under the template directories and these should contain files or symbolic links. In section 2 there is a method of how to create these directory hierarchies.

```
#!/usr/bin/perl

# Author: Mikael O. Bonnier

# use warnings; # Generates warnings.
use strict;
use DBI;
use Encode;
use lib '../lib/';
use database; # from Lund University Libraries, Head Office
use MKBCfg;

my $LADok = 0;
my $cfg = new MKBCfg;

my $toDatabase = $cfg->{db};

# my $fromDatabase = 'mkb_lub';
my $toDb =
    new database( $toDatabase, $cfg->{dbHost}, $cfg->{dbUser},
                 $cfg->{dbPasswd} );

# my $fromDb = new database($fromDatabase, $cfg->{dbHost},
#                           $cfg->{dbUser}, $cfg->{dbPasswd});

my $toDbh = $toDb->{dbh};

# my $fromDbh = $fromDb->{dbh};

$toDb->Do("set names utf8");

$toDbh->do(
    q|INSERT INTO Users (usId, usUsername)
VALUES (1, 'mkr-mbo')|
);

$toDbh->do(
    q|INSERT INTO Librarians (lUsId, lPassword, lManager, lEmail, lPhone, lMobile,
    lFirstname, lLastname, lAccess)
VALUES (1, 'qwerty', NULL, 'mikaelb@df.lth.se', NULL, '+46730307498', 'Mikael', 'Bonnier', 'rw')|
);

$toDbh->do(
    q|INSERT INTO Users (usId, usUsername)
VALUES (2, 'guest')|
);

$toDbh->do(
    q|INSERT INTO Librarians (lUsId, lPassword, lManager, lEmail, lPhone, lMobile,
    lFirstname, lLastname, lAccess)
VALUES (2, 'test', NULL, 'guest.guestson@lub.lu.se', NULL, NULL, 'Guest', 'Guestson', 'rw')|
);

$toDbh->do(
    q|INSERT INTO Templates (tId, tDir)
VALUES (1, 'bookmarks')|
);
```

```

$toDbh->do(
  q|INSERT INTO Templates (tId, tDir)
  VALUES (2, 'rid')|
);

$toDbh->do(
  q|INSERT INTO Langs (laId, laLang)
  VALUES (1, 'en')|
);

$toDbh->do(
  q|INSERT INTO Langs (laId, laLang)
  VALUES (2, 'sv')|
);

$toDbh->do(
  q|INSERT INTO Langs (laId, laLang)
  VALUES (3, 'other')|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200001, 1, 'Departments')|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200001, 2, 'Institutioner')|
);

$toDbh->do(
  q|INSERT INTO Departments (dId, dParent)
  VALUES (200001, NULL)|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200002, 1, 'Libraries')|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200002, 2, 'Bibliotek')|
);

$toDbh->do(
  q|INSERT INTO Departments (dId, dParent)
  VALUES (200002, NULL)|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200003, 1, 'Programmes')|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200003, 2, 'Program')|
);

$toDbh->do(
  q|INSERT INTO Departments (dId, dParent)
  VALUES (200003, NULL)|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200004, 1, 'General Science Library')|
);

$toDbh->do(
  q|INSERT INTO DepartmentTexts (dtDId, dtLaId, dtName)
  VALUES (200004, 2, 'Allmän vetenskaps bibliotek')|
);

$toDbh->do(
  q|INSERT INTO Departments (dId, dParent, dCode, dURI)
  VALUES (200004, 200002, '0000', 'http://www.df.lth.se/~mikaelb/')|
);

# $q = q|select id as dId, 1 as dParent, name_en as dName_en, name as dName_sv
# from unit|;

```

```

# $as = $fromDb->SelectMany($q);
my $q;
$q =
  q|select 200001 as dParent, trim(kod) as dCode, trim(benamme) as dName_en,
        trim(benamn) as dName_sv
        from lu.inst
        where nedlagd != 'J'|;

if ($LADok) {
  my $database = $cfg->{LADokDb};
  my $username = $cfg->{LADokUser};
  my $password = $cfg->{LADokPassword};

  my $dbh = DBI->connect( "dbi:Mimer:$database", $username, $password )
    or die( 'Unable to connect to LADOK database.' );
  my $sth = $dbh->prepare($q);
  $sth->execute;
  my $as = [];
  while ( my $hr = $sth->fetchrow_hashref ) {
    push @$as, $hr;
  }
  $dbh->disconnect;

  for my $row (@$as) {
    Encode::from_to( $row->{DCODE}, 'iso-8859-1', 'utf8' );
    Encode::from_to( $row->{DNAME_EN}, 'iso-8859-1', 'utf8' );
    $row->{DNAME_EN} || delete $row->{DNAME_EN};
    Encode::from_to( $row->{DNAME_SV}, 'iso-8859-1', 'utf8' );
    $toDb->Insert( 'DepartmentTexts',
      { dtLaId => 2, dtName => $row->{DNAME_SV} } );
    my $dId = $toDb->last_insert_id( undef, undef, undef, undef );
    $row->{DNAME_EN}
      && $toDb->Insert( 'DepartmentTexts',
        { dtDid => $dId, dtLaId => 1, dtName => $row->{DNAME_EN} } );
    $row->{DID} = $dId;
    $toDb->Insert( 'Departments', $row, undef, 1 );
  }
}

$toDbh->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
  VALUES (100000, 1, 'Science in General', now())|
);

$toDbh->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
  VALUES (100000, 2, 'Vetenskap i allmänhet', now())|
);

$toDbh->do(
  q|INSERT INTO Courses (cId, cCode, cUsId, cOnlineStart, cLevel)
  VALUES (100000, 'GSCO01', 1, '2007-12-01', 'A')|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 100000, NULL, 100000)|
);

$toDbh->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
  VALUES (100001, 1, 'Advanced Science', now())|
);

$toDbh->do(
  q|INSERT INTO Courses (cId, cCode, cUsId, cOnlineStart, cLevel, cTId)
  VALUES (100001, 'GSCO02', 1, '2008-03-11', 'B', 1)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100001, 100001, NULL, 100001)|
);

# my $q = q|select id as cId, code as cCode, name as cName_sv, startdate as cOnlineStart, NULL
# from course
# where not code='' and startdate is not null|;
# my $as = $fromDb->SelectMany($q);

$q =
  q|select trim(kod) as cCode, trim(benamme) as cName_en, trim(benamn) as cName_sv,
        trim(inst) as cCode, trim(idatum) as cOnlineStart, trim(knivauha) as cLevel
        from lu.kurs

```

```

where nedlagd != 'J' and kod not like 'ZJU_-'|;

if ($LADok) {
  my $database = $cfg->{LADokDb};
  my $username = $cfg->{LADokUser};
  my $password = $cfg->{LADokPassword};

  my $dbh = DBI->connect( "dbi:Mimer:$database", $username, $password )
    or die( 'Unable to connect to LADOK database.' );
  my $sth = $dbh->prepare($q);
  $sth->execute;
  my $as = [];
  while ( my $hr = $sth->fetchrow_hashref ) {
    push @$as, $hr;
  }
  $dbh->disconnect;

  for my $row (@$as) {
    Encode::from_to( $row->{CCODE}, 'iso-8859-1', 'utf8' );
    Encode::from_to( $row->{CNAME_EN}, 'iso-8859-1', 'utf8' );
    $row->{CNAME_EN} || delete $row->{CNAME_EN};
    Encode::from_to( $row->{CNAME_SV}, 'iso-8859-1', 'utf8' );
    $toDb->insert( 'Resources',
      { rLaId => 2, rTitle => $row->{CNAME_SV} } );
    my $cId = $toDb->last_insert_id( undef, undef, undef );
    $row->{CNAME_EN}
      && $toDb->insert( 'Resources',
        { rId => $cId, rLaId => 1, rTitle => $row->{CNAME_EN} } );
    $row->{CID} = $cId;
    $toDb->insert( 'Courses', $row, undef, 1 );
    $toDb->insert( 'CourseResources',
      { crCId => $cId, crRId => $cId, crPriority => $cId } );
  }
}

$toDb->do(
  q|INSERT INTO UserCourses (ucUsId, ucCId)
VALUES (1, 100000)|
);

$toDb->do(
  q|INSERT INTO UserCourses (ucUsId, ucCId)
VALUES (1, 100001)|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (10, 1, 'Book Collections', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (10, 2, 'Boksamlingar', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (11, 1, 'Web Site Collections', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (11, 2, 'Webbplatssamlingar', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (12, 2, 'Artikelsamlingar', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (12, 1, 'Article Collections', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (1, 1, 'Books', now())|
);

$toDb->do(
  q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
VALUES (1, 2, 'Böcker', now())|
);

```

```
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (2, 1, 'A Book', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (2, 2, 'En bok', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (3, 1, 'Another Book', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (3, 2, 'En annan bok', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (4, 1, 'Web Sites', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (4, 2, 'Webbplatser', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (5, 1, 'A Web Site', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (5, 2, 'En webbplats', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted, rDescription, rInfo)
    VALUES (6, 2, 'En annan webbplats', now(), 'En bra blogg.', 'En bra blogg om enradare.')|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted, rDescription, rInfo)
    VALUES (6, 1, 'Another Web Site', now(), 'A fine blog.', 'A fine blog about one-liners.')|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (7, 1, 'Articles', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (7, 2, 'Artiklar', now())|
);

# $toDbh->do(q|INSERT INTO Resources (rId, rLaId, rTitle)
# VALUES (8, 1, 'An Article')|);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (8, 2, 'En artikel', now())|
);

$toDbh->do(
    q|INSERT INTO Resources (rId, rLaId, rTitle, rInserted)
    VALUES (9, 1, 'Another Article', now())|
);

# $toDbh->do(q|INSERT INTO Resources (rId, rLaId, rTitle)
# VALUES (9, 2, 'En annan artikel')|);

$toDbh->do(
    q|INSERT INTO Articles (aRId, aAuthor)
    VALUES (2, 'Bonnier, Mikael O.')|
);
```

```
$toDbh->do(
  q|INSERT INTO Articles (aRId, aAuthor)
  VALUES (5, 'Bonnier et al')|
);

$toDbh->do(
  q|INSERT INTO URIs (uRId, uURI, uType)
  VALUES (3, 'http://www.df.lth.se/~mikaelb/', 'link')|
);

$toDbh->do(
  q|INSERT INTO URIs (uRId, uURI, uType)
  VALUES (6, 'http://enradare.orbin.se/', 'link')|
);

$toDbh->do(
  q|INSERT INTO Protections (pRId, pProtection)
  VALUES (3, 'university')|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 10, 100000, 10)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 11, 100000, 11)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 12, 100000, 12)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 1, 10, 1)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 2, 1, 2)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 3, 1, 3)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 4, 11, 4)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 5, 4, 5)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 6, 4, 6)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 7, 12, 7)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 8, 7, 8)|
);

$toDbh->do(
  q|INSERT INTO CourseResources (crCId, crRId, crParent, crPriority)
  VALUES (100000, 9, 7, 9)|
);

$toDbh->do(
  q|INSERT INTO UserResources (urUsId, urRId)
  VALUES (1, 10)|
);
```

```

);

$toDbh->do(
    q|INSERT INTO UserResources (urUsId, urRId)
    VALUES (1, 11)|
);

$toDbh->do(
    q|INSERT INTO UserResources (urUsId, urRId)
    VALUES (1, 12)|
);

$toDbh->do(
    q|INSERT INTO DepartmentCourses (dcDId, dcCId)
    VALUES (200004, 100000)|
);

$toDbh->do(
    q|INSERT INTO DepartmentCourses (dcDId, dcCId)
    VALUES (200004, 100001)|
);

$q = q|select dId as dcDId, cId as dcCId
from Courses, Departments
where cDCode = dCode|;

my $sas = $toDb->SelectMany($q);

for my $row (@$sas) {
    $toDb->Insert( 'DepartmentCourses', $row );
}

$toDbh->do(
    q|INSERT INTO DepartmentResources (drDId, drRId)
    VALUES (200004, 1)|
);

$toDbh->do(
    q|INSERT INTO DepartmentResources (drDId, drRId)
    VALUES (200004, 4)|
);

$toDbh->do(
    q|INSERT INTO Sessions (sId, sIp, sUsId, sArrived, sLatest)
    VALUES (12345, '192.168.001.001', 1, '2007-11-29 08:30:00', '2007-11-29 13:29:45')|
);

$toDbh->do(q|ALTER TABLE Courses DROP COLUMN cDCode|);

$toDb->Disconnect;

# $fromDb->Disconnect;

```

2.4 MKBDropTables.pl

Dropping all tables is useful during testing.

```

#!/usr/bin/perl

# Author: Mikael O. Bonnier

# use warnings; # Generates warnings.
use strict;
use DBI;
use lib '../lib/';
use MKBCfg;

my $cfg = new MKBCfg;

my $dbh = DBI->connect( "DBI:mysql:$cfg->{db}:$cfg->{dbHost}",
    $cfg->{dbUser}, $cfg->{dbPasswd} );

$dbh->do(q|DROP TABLE Sessions|);
$dbh->do(q|DROP TABLE DepartmentResources|);
$dbh->do(q|DROP TABLE DepartmentCourses|);
$dbh->do(q|DROP TABLE UserResources|);
$dbh->do(q|DROP TABLE CourseResources|);

```

```

$dbh->do(q|DROP TABLE ResourceTags|);
$dbh->do(q|DROP TABLE Tags|);
$dbh->do(q|DROP TABLE Comments|);
$dbh->do(q|DROP TABLE Protections|);
$dbh->do(q|DROP TABLE URIs|);
$dbh->do(q|DROP TABLE Articles|);
$dbh->do(q|DROP TABLE UserCourses|);
$dbh->do(q|DROP TABLE Courses|);
$dbh->do(q|DROP TABLE Resources|);
$dbh->do(q|DROP TABLE Departments|);
$dbh->do(q|DROP TABLE DepartmentTexts|);
$dbh->do(q|DROP TABLE Langs|);
$dbh->do(q|DROP TABLE Templates|);
$dbh->do(q|DROP TABLE Librarians|);
$dbh->do(q|DROP TABLE Users|);

--END--

```

3 Configuration

There are several files you can configure for your environment.

3.1 MKBCfg.pm

In `MKBCfg.pm` are some common information for a certain collection of course libraries. Sensitive information have been deleted in the example `MKBCfg_DELETED.pm`, and you have to edit this and save as `MKBCfg.pm`. LDAP settings and servers for Lund University are documented in [19, 20]. As demonstrated in section 2 it is possible to run several different collections of course libraries, e.g. one server can be used for many universities. This is done by making duplicates of the directories containing symbolic links except for the files that needs to be changed.

```

package MKBCfg;

use strict;

sub new {
    my ($type) = @_;
    my $self = {};
    bless( $self, $type );
    $self->{cfg} = {
        'mkbAdminBase' => '/mkb/mkbAdmin',
        'templateDir' => '/usr/local/mkb/templates',
        'db' => 'mkb_test', # mkb_lub
        'dbHost' => 'DELETED.lub.lu.se',
        'dbUser' => 'DELETED',
        'dbPasswd' => 'DELETED',
        'LDAPServer' => 'ldap.lu.se',
        'LDAPBaseDN' => 'ou=People,dc=lu,dc=se',
        'LDAPServer2' => 'ldap.student.lu.se',
        'LDAPUIDAttr' => 'uid',
        'LDAPBind' => 'uid=DELETED,ou=search,dc=lu,dc=se',
        'LDAPPassword' => 'DELETED',
        'LDAPPnr' => 'norEduPersonNIN',
        'LADokDb' => 'DELETED',
        'LADokUser' => 'DELETED',
        'LADokPassword' => 'DELETED',
        'cookieDomain' => '.lub.lu.se',
        'univPrefix' => 'lu',
    };
    return $self->{cfg};
}

1;

```


3.2 Templates for Students

In order to make it possible for HTML designers to help with the development and configuration we use a template system that separates the program logic from the design. This is a proprietary system from Lund University Libraries but it is rather compatible with Perl's `HTML::Template` module, e.g. it uses the same data structures in Perl, and the square bracket syntax can be handled using the `filters` function in `HTML::Template`. If you want a special web design for the users at your university you should modify these templates and the CSSes mentioned in section 3.3. All XHTML code have been validated using W3C validator at one time. If there are some validation errors now they are probably easy to fix.

3.2.1 `home.t.html`

The explanatory English texts are written by the staff at Lund University Libraries, Head Office, see old MKB [1].

```
<!DOCTYPE html PUBLIC "-//W3C/DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
  <meta content="text/html; charset=UTF-8" http-equiv="content-type" />
  <title>My Course Library</title>

  <link href="/mkb/en/myCourse.css" rel="stylesheet" type="text/css" />
  <link rel="icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
  <link rel="shortcut icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
</head>

<body class="start">
<br />
<div align="center">
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
  <tbody>
    <tr>
      <td>
        <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
          <tbody>
            <tr>
              <td>
                <table cellpadding="10" cellspacing="0" width="100%">
                  <tbody>
                    <tr>
                      <td colspan="2" align="center"> 
                      </td>
                    </tr>
                    <tr>
                      <td align="left"> <a href="mkb?func=libsOpen&lang=$lang">Open
                        courses</a> | <a href="mkb?func=libsLocked&lang=$lang">Password
                        protected courses</a> | <a href="mkbAdmin">Administration</a>
                      </td>
                      <td align="right"> <a href="mkb?func=home&lang=sv">P&aring;ring;
                        svenska</a> </td>
                    </tr>
                  </tbody>
                </table>
              </td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
  </tbody>
</table>
</div>
</body>
```

```

</table>
<br />
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
  <tbody>
    <tr>
      <td>
        <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
          <tbody>
            <tr>
              <td>
                <table cellpadding="10" cellspacing="0" width="100%">
                  <tbody>
                    <tr>
                      <td>
                        <p>My Course Library is a simple solution for giving students access to course related library and information resources. Teachers and librarians by using My Course Library can present structured and commented information to their students, in a simple and effective manner.</p>
                        <p>Would you like to use My Course Library? Contact your <a href="http://www.lub.lu.se/en.html">faculty or department library</a>.</p>
                        <p> Through My Course Library students at Lund University are offered tailor-made quality controlled information resources relevant to their particular studies.</p>
                        <p>Does your course have an electronic course library? Contact your library!</p>
                      </td>
                    </tr>
                  </tbody>
                </table>
              </td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
  </tbody>
</table>
<table width="630">
  <tbody>
    <tr>
      <td>
        <div class="footer" align="right"> My Course Library is maintained by Lunds University Libraries, Head Office. <br /> Please direct questions and comments to:<a href="mailto:mittkursbibl@lub.lu.se">mittkursbibl@lub.lu.se</a>.</div>
      </td>
    </tr>
  </tbody>
</table>
</div>
</body>
</html>

```

3.2.2 libsOpen.t.html

The explanatory English texts are written by the staff at Lund University Libraries, Head Office, see old MKB [1].

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
  <meta content="text/html; charset=UTF-8" http-equiv="content-type" />
  <title>My Course Library</title>
  <link href="/mkb/en/myCourse.css" rel="stylesheet" type="text/css" />
  <link rel="icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
  <link rel="shortcut icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
</head>
<body class="start">

```

```

<br />
<div align="center">
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
  <tbody>
    <tr>
      <td>
        <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
          <tbody>
            <tr>
              <td>
                <table cellpadding="10" cellspacing="0" width="100%">
                  <tbody>
                    <tr>
                      <td colspan="2" align="center">  </td>
                    </tr>
                    <tr>
                      <td align="left"> <a href="mkb?func=home&lang=$lang">Home</a>
                        | <a href="mkb?func=libsLocked&lang=$lang">Password
                          protected courses</a> | <a href="mkbAdmin?lang=$lang">Administration</a>
                      </td>
                      <td align="right"> <a href="mkb?func=libsOpen&lang=sv">P&aring;
                        svenska</a> </td>
                    </tr>
                  </tbody>
                </table>
              </td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
  </tbody>
</table>
<br />
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
  <tbody>
    <tr>
      <td>
        <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
          <tbody>
            <tr>
              <td>
                <table cellpadding="10" cellspacing="0" width="100%">
                  <tbody>
                    <tr>
                      <td>
                        <h2>Open courses</h2>
                        <p>My
                          Course Library is used by a range of departments at Lund University.
                          Most of these course libraries are open, i.e. freely available for
                          students and other interested parties. A password is not required to
                          look at or use these course libraries. However, to access licensed
                          electronic resources from outside of campus, StiL ID is used.</p>
                        <p>My Course Library is also used in various
                          contexts, other than
                          making electronic course libraries, for example for use at workshops or
                          as a platform for sharing resources in projects and working groups.</p>
                        <p>The following is a list of open Course
                          Libraries at Lund University:</p>
                        <form enctype="application/x-www-form-urlencoded" method="get"
                          action="mkb" name="frmDepartment">
                          <select size="1" name="dId" onchange="this.form.submit()">
                            <option
                              [if execute !$dId || $dId == -2]
                                selected="selected"
                              [/if]
                              value="-2">Select department</option>
                            <option
                              [if execute $dId == -1]
                                selected="selected"
                              [/if]
                              value="-1">All</option>
                            [loop departments]
                            <option
                              [if execute $dId == $Loop_dId]
                                selected="selected"
                              [/if]
                              value="$Loop_dId">$Loop_dCode, $Loop_dName</option>
                            [/loop]
                          </select>
                          &nbsp;<!--input accesskey="G" value="Go" type="submit" /-->
                        <input name="func" value="libsOpen" type="hidden" /><input

```

```

        name="lang" value="en" type="hidden" /></form>
<form enctype="application/x-www-form-urlencoded" method="get"
action="mkb" name="frmLibrary">
<select size="1" name="cId" onchange="this.form.submit()">
<option selected="selected" value="-1">Select
course</option>
[loop libraries]
<option value="$Loop_cId">$Loop_cCode, $Loop_cName</option>
[/loop]
</select>
&nbsp;<!--input accesskey="G" value="Go" type="submit" /-->
<input name="func" value="resources" type="hidden" /><input
name="lang" value="en" type="hidden" /></form>
</td>
</tr>
</tbody>
</table>
</td>
</tr>
</tbody>
</table>
</td>
</tr>
</tbody>
</table>
<table width="630">
<tbody>
<tr>
<td>
<div class="footer" align="right"> My Course
Library is maintained by Lunds University Libraries, Head Office. <br />

Please direct questions and comments to:<a
href="mailto:mittkursbibl@lub.lu.se">mittkursbibl@lub.lu.se</a>.
</div>
</td>
</tr>
</tbody>
</table>
</div>
</body>
</html>

```

3.2.3 libsLocked.t.html

The explanatory English texts are written by the staff at Lund University Libraries, Head Office, see old MKB [1]. Locked course libraries are not supported in the new MKB, at the time of writing.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
<meta content="text/html; charset=UTF-8" http-equiv="content-type" />
<title>My Course Library</title>
<link href="/mkb/en/myCourse.css" rel="stylesheet" type="text/css" />
<link rel="icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
<link rel="shortcut icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
</head>
<body class="start">
<br />
<div align="center">
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
<tbody>
<tr>
<td>
<table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
<tbody>
<tr>
<td>
<table cellpadding="10" cellspacing="0" width="100%">
<tbody>
<tr>

```

```

        <td colspan="2" align="center">  </td>
    </tr>
    <tr>
    <td align="left"> <a href="mkb?func=home&lang=$lang">Home</a>
    | <a href="mkb?func=libsOpen&lang=$lang">Open
    courses</a> | <a href="mkbAdmin?lang=$lang">Administration</a>
    </td>
    <td align="right"> <a href="mkb?func=libsLocked&lang=sv">P&aring;
    svenska</a> </td>
    </tr>
    </tbody>
    </table>
    </td>
    </tr>
    </tbody>
    </table>
    <br />
    <table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
    <tbody>
    <tr>
    <td>
    <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
    <tbody>
    <tr>
    <td>
    <table cellpadding="10" cellspacing="0" width="100%">
    <tbody>
    <tr>
    <td>
    <h2>Password protected courses</h2>
    <p>My
    Course Library is used by a range of departments at Lund University. A
    small number of these course libraries are password protected. Please,
    contact the teacher or librarian responsible to get a user ID. </p>
    <p>To access licensed electronic resources from
    outside of campus, Stil ID is used.</p>
    <p>The following is a list of password
    protected course libraries at Lund University:</p>
    <form enctype="application/x-www-form-urlencoded" method="get"
    action="mkb" name="frmDepartment">
    <select size="1" name="dId" onchange="this.form.submit()">
    <option
    [if execute !$dId || $dId == -2]
    selected="selected"
    [/if]
    value="-2">Select department</option>
    <option
    [if execute $dId == -1]
    selected="selected"
    [/if]
    value="-1">All</option>
    [loop departments]
    <option
    [if execute $dId == $Loop_dId]
    selected="selected"
    [/if]
    value="$Loop_dId">$Loop_dCode, $Loop_dName</option>
    [/loop]
    </select>
    &nbsp;<!--input accesskey="G" value="Go" type="submit" /-->
    <input name="func" value="libsLocked" type="hidden" /><input
    name="lang" value="en" type="hidden" /></form>
    <form enctype="application/x-www-form-urlencoded" method="get"
    action="mkb" name="frmLibrary">
    <select size="1" name="cId" onchange="this.form.submit()">
    <option selected="selected" value="-1">Select
    course</option>
    [loop libraries]
    <option value="$Loop_cId">$Loop_cCode, $Loop_cName</option>
    [/loop]
    </select>
    &nbsp;<!--input accesskey="G" value="Go" type="submit" /-->
    <input name="func" value="resources" type="hidden" /><input
    name="lang" value="en" type="hidden" /></form>
    </td>
    </tr>
    </tbody>
    </table>
    </td>
    </tbody>
    </table>

```

```

        </td>
      </tr>
    </tbody>
  </table>
</td>
</tr>
</tbody>
</table>
<table width="630">
  <tbody>
    <tr>
      <td>
        <div class="footer" align="right"> My Course
          Library is maintained by Lunds University Libraries, Head Office. <br />
          Please direct questions and comments to:<a
            href="mailto:mittkursbibl@lub.lu.se">mittkursbibl@lub.lu.se</a>.
        </div>
      </td>
    </tr>
  </tbody>
</table>
</div>
</body>
</html>

```

3.2.4 resources.t.html (Default)

It is possible for the administrators to choose different templates for different course libraries. First we present the template *Default*, see e.g. old MKB [1]. Currently there is no user interface for MKB administrators to edit these templates, and the solution for the time being is to connect to the template sub-directory using scp och sftp. This could be safe since each template has its own sub-directory with versions for each language the system should allow. However, it requires some setting up of the web server system administrator. This and some other templates use the JavaScript library jQuery [22] and its sub-libraries ThickBox [23] and clueTip [24]. Some CSS files are a part of jQuery, and they are not discussed in this report.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
  <meta content="text/html; charset=UTF-8" http-equiv="content-type" />
  <title>MKB $cName</title>
  <link rel="icon" type="image/x-icon" href="/mkb/en/favicon.ico" />
  <link rel="shortcut icon" type="image/x-icon" href="/mkb/en/favicon.ico" />
  <link rel="stylesheet" type="text/css" href="/mkb/en/style.css" />
  <link rel="stylesheet" type="text/css" href="/mkb/en/thickbox.css" media="screen" />
  <script type="text/javascript" src="/mkb/en/jquery.js"></script>
  <script type="text/javascript" src="/mkb/en/thickbox.js"></script>
  <script type="text/javascript" src="/mkb/en/jquery.dimensions.js"></script>
  <script type="text/javascript" src="/mkb/en/jquery.hoverIntent.js"></script> <!-- optional -->
  <script type="text/javascript" src="/mkb/en/jquery.cluetip.js"></script>
  <script type="text/javascript">
  $(document).ready(function() {
    $('a.info').cluetip({
      splitTitle: '|', // use the invoking element's title attribute to populate the clueTip...
                        // ...and split the contents into separate divs where there is a "|"
      showTitle: false // hide the clueTip's heading
    });
  });
  </script>
  <link rel="stylesheet" href="/mkb/admin/en/jquery.cluetip.css" type="text/css" />
  <link rel="stylesheet" type="text/css" href="/mkb/en/default.css" />
</head>
<body>

```

```

<table align="center" cellpadding="0" cellspacing="0">
  <tbody>
    <tr>
      <td>
        <table width="100%">
          <tbody>
            <tr>
              <td></td>
              <td></td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
    <tr>
      <th class="header_top" nowrap="nowrap" width="100%"> $cName </th>
    </tr>
    <tr>
      <td>
        <table class="top_links" border="0" cellpadding="3" cellspacing="0" width="100%">
          <tbody>
            <tr>
              <td nowrap="nowrap"> <a
                href="http://www.lu.se/">LU</a> &gt; <a
                href="http://www.lub.lu.se/">LUL</a> &gt; <a
                href="/mkb/mkb?func=home&lang=en">All Course Libraries </a>
              </td>
              <td align="right" nowrap="nowrap"
                valign="bottom"> <a
                href="http://www.lub.lu.se/en/ask-the-libraries.html">Ask
                the library - LU</a><a class="info" title="|A chat service for search help
                and information searching guidance, available on evenings and weekends,
                when your library is not open.">
                </a>&nbsp;
                <a
                href="http://elin.lub.lu.se/elin?func=myCollection&lang=$lang">My
                Collection</a><a class="info" title="|Offers you the possibility to build your
                own collection of digital information resources">
                </a>&nbsp;
                <a href="http://www.lub.lu.se/en/basic-il.html">Basic
                IL</a><a class="info" title="|Brief online course in how to search for
                information">
                </a> </td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
    <tr>
      <td>
        [loop his]
        <table border="0" cellpadding="0" cellspacing="0">
          <tbody>
            <tr valign="top">
              <td>
                [loop h2s]
                [if execute $Loop_rTitle eq 'i']
                <table class="section" border="0" cellpadding="0" cellspacing="0">
                  <tbody>
                    <tr>
                      <td width="350">
                        <table border="0" cellpadding="0" cellspacing="0" width="100%">
                          <tbody>
                            <tr>
                              <td class="header" width="100%">Information</td>
                              <td class="header" align="right" valign="bottom">
                                <!--div class="blocktitle"></div-->
                              </td>
                            </tr>
                          </tbody>
                        </table>
                      </td>
                    </tr>
                  </tbody>
                </table>
              </td>
              <td>
                <table class="block" width="340"> <span class="section_description"></span>
                <table class="infoblock">
                  <tbody>
                    <tr>
                      <td align="top">Kursnamn:</td>
                      <td align="top">$cName</td>
                    </tr>
                    <tr>
                      <td align="top">Ansvarig:</td>

```

```

        <td>${lFirstname} ${lLastname}</td>
      </tr>
      <tr>
        <td valign="top">Email:</td>
        <td>${lEmail}</td>
      </tr>
    </tbody>
  </table>
</td>
</tr>
</tbody>
</table>
[if]
[if execute not $Loop_rTitle eq 'i']
<table class="section" border="0" cellpadding="0" cellspacing="0">
  <tbody>
    <tr>
      <td width="350">
        <table border="0" cellpadding="0" cellspacing="0" width="100%">
          <tbody>
            <tr>
              <td class="header" width="100%">${Loop_rTitle}</td>
              <td class="header" align="right" valign="bottom">
                <!--div class="blocktitle"></div-->
              </td>
            </tr>
          </tbody>
        </table>
      </td>
      <td>
        <tr>
          <td class="block" width="340">
            <span class="section_description">${Loop_rDescription}</span>
            <ul>
              [loop h3s]
                <li>
                  [if $Loop_aAuthor]
                    ${Loop_aAuthor}, <i>
                  [if]
                    [if !$Loop_uURI]
                      ${Loop_rTitle}
                    [if]
                    [if $Loop_uURI]
                      [if execute $Loop_uType eq 'link']
                        <a rel="colleague" target="_blank"
href="mkb?func=redirect&cId=${cId}&uRId=${Loop_rId}&uURI=${Loop_uURI}">${Loop_rTitle}</a>
                      [if]
                        [if execute $Loop_uType eq 'file']
                        <a rel="me"
href="mkb?func=download&cId=${cId}&uRId=${Loop_rId}&uURI=${Loop_uURI}">${Loop_rTitle}</a>
                      [if]
                    [if]
                    [if $Loop_aAuthor]
                      </i>
                    [if]
                    [if execute $Loop_rTitle and $Loop_rDescription]
                      <br />
                    [if]
                    ${Loop_rDescription}
                    [if $Loop_rInfo]
                      <a class="info" title="|${Loop_rInfo}" href="javascript:void"></a>
                    [if]
                </li>
              [if]
            </ul>
          </td>
        </tr>
      </tbody>
    </table>
  [if]
[if]
</td>
[if execute $Loop_hisIndex != $hisCount]
<td width="15">&nbsp;</td>
[if]
[if]
</tbody>
</table>
</tr>
</tbody>
</table>

```



```

</table>
</td>
</tr>
</tbody>
</table>
</td>
</tr>
</tbody>
</table>
</body>
</html>

```

3.2.5 resources.t.html (Bookmarks)

The following template *bookmarks* is similar to a Mozilla bookmarks file. It demonstrates that MKB can have infinite number of levels. This template could be used in a secondary MKB site in order to make it possible to import course libraries in web browsers Bookmarks/Favorites.

```

<!DOCTYPE NETSCAPE-Bookmark-file-1>
<!-- This is an automatically generated file.
      It will be read and overwritten.
      DO NOT EDIT! -->
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<META HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=UTF-8">
<TITLE>Bookmarks</TITLE>
<H1 LAST_MODIFIED="$cLastModified">Bookmarks</H1>
<DL><p>
<DT><H3 ADD_DATE="$cAddDate" LAST_MODIFIED="$cLastModified">$cName</H3>
[loop resources]
  [if $Loop_isFirst]
  <DL><p>
  [/if]
  [if !$Loop_end]
  [if !$Loop_uURI]
  <DT><H3 ADD_DATE="$Loop_rAddDate" LAST_MODIFIED="$Loop_rLastModified">$Loop_rTitle</H3>
  [/if]
  [if $Loop_uURI]
  [if execute $Loop_uType eq 'link']
  <DT><A
HREF="http://hactar.lub.lu.se/mkb/mkb?func=redirect&cid=$cId&urid=$Loop_rId&uuri=$Loop_uURI"
ADD_DATE="$Loop_rAddDate" LAST_VISIT="$Loop_rLastVisited"
LAST_MODIFIED="$Loop_rLastModified">$Loop_rTitle</A>
  [/if]
  [if execute $Loop_uType eq 'file']
  <DT><A
HREF="http://hactar.lub.lu.se/mkb/mkb?func=download&cid=$cId&urid=$Loop_rId&uuri=$Loop_uURI"
ADD_DATE="$Loop_rAddDate" LAST_VISIT="$Loop_rLastVisited"
LAST_MODIFIED="$Loop_rLastModified">$Loop_rTitle</A>
  [/if]
  [if $Loop_rExplanation]
  <DD>$Loop_rExplanation
  [/if]
  [/if]
  [if $Loop_end]
  </DL><p>
  [/if]
[/loop]
</DL><p>

```

3.2.6 resources.t.html (Resource ID)

This is a special template *rid* that demonstrates a very fine level of control using resource IDs.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
  <meta content="text/html; charset=UTF-8"
http-equiv="content-type" />
  <title>Test rId Template</title>
</head>
<body>
<table style="text-align: left; width: 100%;" border="1"
cellpadding="2" cellspacing="2">
  <tbody>
    <tr>
      <td>
        <ul>
[loop rId1s]
  <li>$Loop_rTitle</li>
[/loop]
        </ul>
      </td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
    <tr>
      <td></td>
      <td></td>
    </tr>
  </tbody>
</table>
<br />
</body>
</html>
```

3.2.7 login.t.html

This template is used when login is required.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
  <meta content="text/html; charset=UTF-8" http-equiv="content-type" />
  <title>My Course Library</title>
  <link href="/mkb/en/myCourse.css" rel="stylesheet" type="text/css" />
  <link rel="icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
  <link rel="shortcut icon" href="/mkb/en/favicon.ico" type="image/x-icon" />
</head>
```

```

<body class="start">
<br />
<div align="center">
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
  <tbody>
    <tr>
      <td>
        <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
          <tbody>
            <tr>
              <td>
                <table cellpadding="10" cellspacing="0" width="100%">
                  <tbody>
                    <tr>
                      <td colspan="2" align="center">  </td>
                    </tr>
                    <tr>
                      <td align="left"> <a href="mkb?func=home&lang=$lang">Home</a>
                        | <a href="mkb?func=libsLocked&lang=$lang">Password
                          protected courses</a> | <a href="mkbAdmin?lang=$lang">Administration</a>
                      </td>
                      <td align="right"> <a href="mkb?func=libsOpen&lang=sv">P&aring;
                        svenska</a> </td>
                    </tr>
                  </tbody>
                </table>
              </td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
  </tbody>
</table>
<br />
<table bgcolor="#000000" border="0" cellpadding="1" cellspacing="0" width="630">
  <tbody>
    <tr>
      <td>
        <table bgcolor="#ffffff" border="0" cellpadding="0" cellspacing="0" width="630">
          <tbody>
            <tr>
              <td>
                <table cellpadding="10" cellspacing="0" width="100%">
                  <tbody>
                    <tr>
                      <td>
                        <h2>Login</h2>
                        <p>To access licensed electronic resources, Stil ID is used.</p>
                        [if $errorMessagees]
                        <p><font color="red">$errorMessagees</font></p>
                        [endif]
                        <form enctype="application/x-www-form-urlencoded" method="post" action="mkb"
                          onsubmit="setTimeout('window.location.href=\'mkb?func=resources&cid=$cid&lang=$lang\'',1000)">
                          <input name="func" value="login" type="hidden" /><input
                            name="postfunc" value="$postfunc" type="hidden" /><input
                              name="cid" value="$cid" type="hidden" /><input
                                name="uRID" value="$uRID" type="hidden" /><input
                                  name="lang" value="$lang" type="hidden" /><label
                                    for="username">ID</label>
                                  <br />
                                  <input name="username" id="username" size="30"
                                    [if $username]
                                    value="$username"
                                    [endif]
                                    type="text" />
                                  <br />
                                  <label for="password">Password</label>
                                  <br />
                                  <input name="password" id="password"
                                    size="30" value="" type="password" />
                                  <br />
                                  <input accesskey="G" value="Go" type="submit" />
                                </form>
                                [if $displayName]
                                <p>$displayName<br />
                                  $mail</p>
                                [endif]
                                <h4>[Cookie: $cookies]</h4>
                                <h4><a href="mkb?func=resources&cid=$cid&lang=$lang">Back</a></h4>
                              </td>
                            </tr>
                          </tbody>
                        </table>
                      </td>
                    </tr>
                  </tbody>
                </table>
              </td>
            </tr>
          </tbody>
        </table>
      </td>
    </tr>
  </tbody>
</table>

```

```

        </tbody>
      </table>
    </td>
  </tr>
</tbody>
</table>
</td>
</tr>
</tbody>
</table>
<table width="630">
  <tbody>
    <tr>
      <td>
        <div class="footer" align="right"> My Course
          Library is maintained by Lunds University Libraries, Head Office. <br />

          Please direct questions and comments to:<a
            href="mailto:mittkursbibl@lub.lu.se">mittkursbibl@lub.lu.se</a>.
        </div>
      </td>
    </tr>
  </tbody>
</table>
</div>
</body>
</html>

```

3.2.8 error.t.html

This template is used to present internal fatal errors.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Student Template -->
<head>
<meta content="text/html; charset=UTF-8" http-equiv="content-type" />
<title>MKB Error</title>
</head>
<body>
<h3>MKB Error</h3>
<p>$error</p>
</body>
</html>

```

3.3 Cascading Style Sheets (CSS) for Students

These CSSes are based on the ones from the old MKB [1].

3.3.1 myCourse.css

This is based on myCourse.css in old MKB. This is used by home.t.html, libsOpen.t.html, libsLocked.t.html.

```

body, dd, dl, dt, form, input, li, ol, p, select, td, th, ul {
  font-size: 9pt;
}

body {
  background: white;
  color: black;
  font-family: Verdana, Arial, Helvetica, sans-serif;
}

```

```
h1, h2, h3, h4, h5, h6, h7, th {
  font-weight: bold;
}

.vheader_top {
  background: #996633;
  color: #FFFFFF;
  font-weight: bold;
}

.vheader {
  background: #000080;
  color: #FFFFFF;
  font-weight: normal;
}

.header {
  font-weight: bold;
  background: #EFE9DE;
  font-family: sans-serif;
  color: #000080;
}

a:link {
  color: #0000B0;
  text-decoration: none;
}

a:visited {
  color: #0000B0;
  text-decoration: none;
}

a:active {
  color: #502090;
  text-decoration: none;
}

a:hover {
  text-decoration: underline;
}

div.footer {
  font-size: 0.8em;
}

.section_description {
  font-style: normal;
  color: #004444;
}

body.start {
  background: #EFF7FF;
  color: black;
  font-family: sans-serif;
}

pre {
  font-family: monospace;
}

.statusline {
  font-weight: normal;
  text-align: left;
  border-top-style: solid;
  border-top-color: black;
  border-top-width: 2px;
}

.menu {
  font-family: sans-serif;
}

.menua {
  font-family: sans-serif;
}

a.menu:link { color: black;}
a.menu:hover { color: black;}
a.menu:visited { color: black;}
a.menu:active { color: black;}

a.menua:link { color: blue;}
```

```
a.menua:hover { color: blue;}
a.menua:visited { color: blue;}
a.menua:active { color: blue;}
```

3.3.2 default.css

This is based on `default.css` in old MKB. This is used by `resources.t.html` (Default).

```
/*
body, dd, dl, dt, form, input, li, ol, p, select, td, th, ul {
  font-size: 0.9em;
}
*/

body {
  background: #FFFFFF;
  color: black;
  font-family: Verdana, Arial, Helvetica, sans-serif;
  padding: 5px;
}

.infoblock {
  font-size: 0.75em;
}

h1, h2, h3, h4, h5, h6, h7, th {
  font-weight: bold;
}

a:link {
  color: #0000B0;
  text-decoration: none;
}

a:visited {
  color: #0000B0;
  text-decoration: none;
}

a:active {
  color: #502090;
  text-decoration: none;
}

a:hover {
  text-decoration: underline;
}

img {border: none;}

li {
  font-size: 0.8em;
}

.header_top {
  font-size: 1.2em;
  background: #996633;
  color: #FFFFFF;
  font-weight: bold;
  margin-top: 15px;
  margin-bottom: 15px;
  padding-left: 5px;
  padding-right: 5px;
  padding-top: 5px;
  padding-bottom: 5px;
  border-style: solid;
  border-width: 1px;
  border-color: black;
}

.header {
  font-size: 0.95em;
  background: #000080;
  color: #FFFFFF;
  font-weight: bold;
}
```

```
margin-top: 10px;
margin-bottom: 10px;
padding-left: 3px;
padding-right: 3px;
padding-top: 3px;
padding-bottom: 3px;
text-align: center;
}

.top_links {
font-size: 0.70em;
border-bottom-style: solid ;
border-bottom-color: black;
border-bottom-width: 2px;
}

.section {
/* font-size: 0.90em; */
margin-top: 0.2cm;
background: #F9F9FF;
border-style: solid;
border-width: 1px;
border-color: #D0D0FF;
}

.section_description {
/* font-style: normal;*/
font-size: 0.9em;
color: #004444;
}

/*Body of the section*/
.block {
padding-top:4px; padding-left: 3px; padding-right:3px; padding-bottom:3px
}

.statusline {
font-size: 0.70em;
font-weight: normal;
text-align: left;
margin-top: 0.2cm;
border-top-style: solid;
border-top-color: black;
border-top-width: 2px;
}
```

4 Templates for Administrators

Some of these templates are rather complex and should only be edited by developers. Some of these templates use the JavaScript library jQuery and its sub-libraries ThickBox and clueTip [22, 23, 24]. The templates for the administrators in XHTML with CSS and JavaScript, and with template code in square brackets, and the Perl scripts and modules are all together about 3000 lines. All XHTML code have been validated using W3C validator at one time. If there are some validation errors now they are probably easy to fix.

4.1 menu.t.html

This template of about 40 lines is a menu for the administrators showed on most web pages in the admin tool.

```
<div id="menu">
```

```

<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Administrator Template -->


|                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="mkbAdmin?func=libraries&lang=\$lang">Edit Course Libraries</a>   <a href="mkbAdmin?func=librarians&lang=\$lang">Edit Librarians</a>   [<a href="mkbAdmin?func=query&database=MKB&lang=\$lang">Query MKB</a>]   [<a href="mkbAdmin?func=query&database=OldMKB&lang=\$lang">Query Old MKB</a>]   [<a href="mkbAdmin?func=query&database=LADok&lang=\$lang">Query LADOK</a>]   <a href="mkbAdmin?func=logout&lang=\$lang">Logout</a> | <form enctype="application/x-www-form-urlencoded" method="get" action="" name="frmLang"> <input type="hidden" name="func" value="\$func" /> <input type="hidden" name="cid" value="\$cid" /> <select size="1" name="lang" id="lang" style="position: absolute; top: 25px; right: 25px;" onchange="this.form.submit()"> <option value="-2">Select language</option> [loop langs] <option [if execute "\$lang" eq "\$Loop_laLang" selected="selected" [/if] value="\$Loop_laLang">\$Loop_laLang</option> [/loop] </select> </form> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|


```

4.2 footer.t.html

This is a footer template of 10 lines showed on most web pages in the admin tool.

```





```

4.3 login.t.html

This is a template of about 80 lines used for administrator login.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Administrator Template -->
<head>
<meta content="text/html; charset=UTF-8"
http-equiv="content-type" />
<title>MKB Login</title>
<link rel="stylesheet" type="text/css"
href="/mkb/admin/en/style.css" />
<link rel="stylesheet" type="text/css"
href="/mkb/admin/en/thickbox.css" media="screen" />

```



```

<script type="text/javascript" src="/mkb/admin/en/jquery.js"></script>
<script type="text/javascript"
src="/mkb/admin/en/thickbox.js"></script>
<style type="text/css">
.button {
border-style: outset;
font-family: Arial,Helvetica,sans-serif;
text-decoration: none;
color: black;
background-color: silver;
font-weight: normal;
font-size: x-small;
}
body {
font-family: Arial,Helvetica,sans-serif;
background-color: silver;
}
</style>
</head>
<body>
<h3>MKB Admin Login [mkbadsid=$mkbadsid]</h3>
<table style="text-align: left; width: 100%;" border="0"
cellpadding="2" cellspacing="2">
<tbody>
<tr>
<td style="vertical-align: top; background-color: rgb(255, 204, 204);">
[include menu.t.html]
</td>
</tr>
<tr>
<td
style="vertical-align: top; width: 100%; background-color: rgb(222, 222, 222);">
[if $errorMessagees]
<font color="red">$errorMessagees</font>
[/if]
<form enctype="application/x-www-form-urlencoded"
method="post" action="mkbAdmin"><input name="func" value="login" type="hidden" /><input
name="postfunc" value="$postfunc" type="hidden" /><input
name="cId" value="$cId" type="hidden" /><input
name="uRId" value="$uRId" type="hidden" /><input
name="lang" value="$lang" type="hidden" /><label for="username">ID</label>
<br />
<input name="username" id="username"
size="30" value="$username" type="text" />
<br />
<label for="password">Password</label>
<br />
<input name="password" id="password"
size="30" value="" type="password" />
<br />
<input accesskey="G" value="Go"
type="submit" />
</form>
[if $displayName]
<p>$displayName<br />
$mail</p>
[/if]
<h4>Cookie: $cookies</h4>
</td>
</tr>
</tbody>
</table>
[include footer.t.html]
</body>
</html>

```

4.4 libraries.t.html

This template of about 300 lines shows the course libraries that the administrator is allowed to edit.

```

<!DOCTYPE html PUBLIC "-//W3C/DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Administrator Template -->

```

```

<head>
  <meta content="text/html; charset=UTF-8"
    http-equiv="content-type" />
  <title>MKB Edit Course Libraries</title>
  <link rel="stylesheet" type="text/css" href="/mkb/admin/en/style.css" />
  <link rel="stylesheet" type="text/css" href="/mkb/admin/en/thickbox.css" media="screen" />
  <script type="text/javascript" src="/mkb/admin/en/jquery.js"></script>
  <script type="text/javascript" src="/mkb/admin/en/thickbox.js"></script>
  <style type="text/css">
.button {
border-style: outset;
font-family: Arial,Helvetica,sans-serif;
text-decoration: none;
color: black;
background-color: silver;
font-weight: normal;
font-size: x-small;
}
body {
font-family: Arial,Helvetica,sans-serif;
background-color: silver;
}
</style>
</head>
<body>
<h3>MKB Edit Course Libraries [mkbadmsid=$mkbadmsid]</h3>
<table style="text-align: left; width: 100%; border="0" cellpadding="2" cellspacing="2">
  <tbody>
    <tr>
      <td style="vertical-align: top; background-color: rgb(255, 204, 204);">
        [include menu.t.html]
      </td>
    </tr>
    <tr>
      <td style="vertical-align: top; width: 100%; background-color: rgb(222, 222, 222);">
        <p>
          <a class="thickbox button"
            href="#TB_inline?height=300&width=600&inlineId=divAddLibrary&modal=true"
            title="Add Course Library">&nbsp;&nbsp;&nbsp;&CL&nbsp;&nbsp;&nbsp;</a>
          <a class="thickbox button"
            href="#TB_inline?height=300&width=600&inlineId=divAddExisting&modal=true"
            title="Add Existing Course Library">&nbsp;&nbsp;&nbsp;&Ex&nbsp;&nbsp;&nbsp;</a>
        </p>
        <div id="divAddLibrary" style="display:none">
          <form enctype="application/x-www-form-urlencoded"
            method="post" action="mkbAdmin" name="frmAddLibrary"><input
            name="func" value="addLibrary" type="hidden" /><input
            name="lang" value="$lang" type="hidden" />
          <table>
            <tbody>
              <tr>
                <td><label for="tId">Template</label></td>
                <td><select size="1" name="tId" id="tId">
                  <option value="-2">Select template</option>
                  <option value="-1">[Default]</option>
                  [loop templates]
                  <option
                    [if execute $tId == $Loop_tId]
                      selected="selected"
                    [/if]
                    value="$Loop_tId">$Loop_tDir</option>
                  [/loop]
                </select></td>
              </tr>
              <tr>
                <td><label for="dId">Department</label></td>
                <td><select size="1" name="dId" id="dId">
                  <option value="-2">Select department</option>
                  [loop departments]
                  <option
                    [if execute $dId == $Loop_dId]
                      selected="selected"
                    [/if]
                    value="$Loop_dId">$Loop_dCode, $Loop_dName</option>
                  [/loop]
                </select></td>
              </tr>
              <tr>
                <td><label for="cCode">Code</label></td>
                <td><input name="cCode" id="cCode" /></td>
              </tr>
              <tr>
                <td><label for="cOnlineStart">Start date</label></td>

```



```

        <td><input name="copy" id="copy" value="no" type="checkbox" /> [Mock-up]</td>
    </tr>
    <tr>
        <td></td>
        <td><br /><input accesskey="A" value="Add existing course library"
            type="submit" /><br /><br />
            <input value=" Cancel " onclick="tb_remove()" type="button" /></td>
    </tr>
</tbody>
</table>
</form>
</div>
[include footer.t.html]
</body>
</html>

```

4.5 resources.t.html

This template of about 700 lines shows the resource tree for a course library. Here most of the editing takes place.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Administrator Template -->
<head>
    <meta content="text/html; charset=UTF-8"
        http-equiv="content-type" />
    <title>MKB Edit '$Name' Resources</title>
    <link rel="stylesheet" type="text/css" href="/mkb/admin/en/style.css" />
    <link rel="stylesheet" type="text/css" href="/mkb/admin/en/thickbox.css" media="screen" />
    <script type="text/javascript" src="/mkb/admin/en/jquery.js"></script>
    <script type="text/javascript" src="/mkb/admin/en/thickbox.js"></script>
    <script src="/mkb/admin/en/jquery.dimensions.js" type="text/javascript"></script>
    <script src="/mkb/admin/en/jquery.hoverIntent.js" type="text/javascript"></script> <!-- optional -->
    <script src="/mkb/admin/en/jquery.cluetip.js" type="text/javascript"></script>
    <script type="text/javascript">
/*  */
$(document).ready(function() {
    $('a.tooltip').cluetip({
        splitTitle: '|', // use the invoking element's title attribute to populate the clueTip...
                        // ...and split the contents into separate divs where there is a "|"
        showTitle: false // hide the clueTip's heading
    });
    $('a.tooltipSticky').cluetip({
        splitTitle: '|',
        showTitle: true,
        dropShadow: false,
        sticky: true,
        closePosition: 'title',
        arrows: true,
        activation: 'click'
    });
});

function clickedTo(radTo) {
    var chkFroms = document.getElementsByName('chkFrom');
    var sFrom = '';
    for(var i = 0; i &lt; chkFroms.length; ++i) {
        if(chkFroms[i].checked) {
            sFrom += chkFroms[i].value + ',';
        }
    }
    var bMove = false;
    if(sFrom) {
        sFrom = sFrom.slice(0, -1);
        bMove = window.confirm('Move ' + sFrom + ' to ' + radTo.value + '??');
    }
    if(bMove) {
        var frmMove = document.frmMove;
        frmMove.fromRIds.value = sFrom;
        frmMove.toRId.value = radTo.value;
        frmMove.submit();
    }
    else {
</pre>
</div>
<div data-bbox="695 876 891 892" data-label="Page-Footer">MSc Mikael O. Bonnier</div>
```

```

        radTo.checked = false;
    }
    return bMove;
}

function delResources() {
    var chkFroms = document.getElementsByName('chkFrom');
    var sFrom = '';
    for(var i = 0; i < chkFroms.length; ++i) {
        if(chkFroms[i].checked) {
            sFrom += chkFroms[i].value + ',';
        }
    }
    var bMove = false;
    if(sFrom) {
        sFrom = sFrom.slice(0, -1);
        bMove = window.confirm('Delete ' + sFrom + '??');
    }
    if(bMove) {
        var frmDelete = document.frmDelete;
        frmDelete.fromRIDs.value = sFrom;
        frmDelete.submit();
    }
    return bMove;
}

function clickedAll(chkAll) {
    var chkFroms = document.getElementsByName('chkFrom');
    var radTos = document.getElementsByName('radTo');
    for(var i = 0; i < chkFroms.length; ++i) {
        chkFroms[i].checked = chkAll.checked;
        radTos[i].disabled = true;
    }
    return true;
}

function clickedFrom(chkFrom) {
    var chkFroms = document.getElementsByName('chkFrom');
    var radTos = document.getElementsByName('radTo');
    for(var i = 0; i < chkFroms.length; ++i) {
        radTos[i].disabled = chkFroms[i].checked;
    }
    return true;
}

var sURISave = '';

function clickedURI(radRType) {
    var frm = radRType.form;
    frm.enctype='application/x-www-form-urlencoded';
    frm.method='get';
    frm.uURI.type = 'text';
    frm.uURI.value = sURISave;
    frm.input.value = 'link';
    return true;
}

function clickedFile(radRType) {
    var frm = radRType.form;
    sURISave = frm.uURI.value;
    frm.enctype='multipart/form-data';
    frm.method='post';
    frm.uURI.type = 'file';
    frm.input.value = 'file';
    return true;
}

function displayLang(chkLang) {
    sTrName = 'tr' + chkLang.name.slice(3);
    var trLangs = document.getElementsByName(sTrName + chkLang.value);
    for(var i = 0; i < trLangs.length; ++i) {
        trLangs[i].style.display = chkLang.checked ? '' : 'none';
    }
    return true;
}
/* ]]> */
</script>
<link rel="stylesheet" href="/mkb/admin/en/jquery.cluetip.css" type="text/css" />
<style type="text/css">
.button {
border-style: outset;
font-family: Verdana,Arial,Helvetica,sans-serif;
text-decoration: none;

```

```

color: black;
background-color: silver;
font-weight: normal;
font-size: x-small;
}
body {
font-family: Verdana,Arial,Helvetica,sans-serif;
background-color: silver;
}
tr {
vertical-align: top;
}
.tooltip img {
border: 0px none;
}
</style>
</head>
<body>
<h3>MKB Edit '$cName' Resources [mkbadmsid=$mkbadmsid]</h3>
<table style="text-align: left; width: 100%;" border="0"
cellpadding="2" cellspacing="2">
<tbody>
<tr>
<td
<td style="vertical-align: top; background-color: rgb(246, 157, 189);">
[include menu.t.html]
</td>
</tr>
<tr>
<td
style="vertical-align: top; width: 100%; background-color: rgb(222, 222, 222);">
<form enctype="application/x-www-form-urlencoded" method="get"
action="mkbAdmin" name="frmMove" style="display:none">
<input name="func" value="move" type="hidden" /><input
name="lang" value="$lang" type="hidden" />
<input name="cId" value="$cId" type="hidden" />
<input name="fromRIds" type="text" />
<input name="toRId" type="text" />
</form>
<form enctype="application/x-www-form-urlencoded" method="get"
action="mkbAdmin" name="frmDelete" style="display:none">
<input name="func" value="delResources" type="hidden" /><input
name="lang" value="$lang" type="hidden" />
<input name="cId" value="$cId" type="hidden" />
<input name="fromRIds" type="text" />
</form>
<p>
<a href="#TB_inline?height=430&width=430&inlineId=divAddResource&modal=true"
class="thickbox button"
title="Add Resource">&nbsp;&nbsp;&nbsp;+R&nbsp;&nbsp;&nbsp;</a>
<a href="#TB_inline?height=400&width=500&inlineId=divAddShortcut&modal=true"
class="thickbox button"
title="Add Existing Resource">&nbsp;&nbsp;&nbsp;+Ex&nbsp;&nbsp;&nbsp;</a>
<a class="button"
href="javascript:void delResources()"
title="Delete Resources">&nbsp;&nbsp;&nbsp;-&nbsp;&nbsp;&nbsp;</a>
</p>
<div id="divAddResource" style="display:none">
<form enctype="application/x-www-form-urlencoded"
method="get" action="mkbAdmin" name="frmAddResource">
<input name="func" value="resources" type="hidden" /><input
name="lang" value="$lang" type="hidden" />
<input name="cId" value="$cId" type="hidden" />
<input name="crParent" value="$cId" type="hidden" />
<input name="input" value="link" type="text" style="display:none" />
<table>
<tbody>
<tr>
<td><label for="radRTypeURI">Resource&nbsp;&nbsp;&nbsp;type</label></td>
<td><input type="radio" name="radRType" id="radRTypeURI" value="link" checked="checked"
onclick="clickedURI(this)" /><label for="radRTypeURI">URI</label>
<input type="radio" name="radRType" id="radRTypeFile" value="file"
onclick="clickedFile(this)" /><label for="radRTypeFile">File</label></td>
</tr>
<tr>
<td>Languages</td>
<td>
[loop langs4]
<input name="chkLang" value="$Loop_laId" type="checkbox"
onclick="displayLang(this)" />&nbsp;&nbsp;&nbsp;$Loop_laLang
[/loop]
</td>
</tr>
</tbody>
</table>
[loop langs1]

```

```

<tr name="trLang$Loop_laId" style="display: none;">
  <td><label for="rTitle$Loop_laId">Title ($Loop_laLang)</label></td>
  <td><input name="rTitle_$Loop_laLang" id="rTitle$Loop_laId" /></td>
</tr>
[/loop]
<tr>
  <td><label for="uURI">URI</label></td>
  <td><input name="uURI" id="uURI" value="http://" /></td>
</tr>
<tr>
  <td><label for="aAuthor">Author</label></td>
  <td><input name="aAuthor" id="aAuthor" /></td>
</tr>
<tr>
  <td><label for="aPublisher">Publisher</label></td>
  <td><input name="aPublisher" id="aPublisher" /></td>
</tr>
<tr>
  <td><label for="aCity">City</label></td>
  <td><input name="aCity" id="aCity" /></td>
</tr>
[/loop langs2]
<tr name="trLang$Loop_laId" style="display: none;">
  <td><label for="rDescription$Loop_laId">Description ($Loop_laLang)</label></td>
  <td><textarea cols="32" rows="4" name="rDescription_$Loop_laLang"
id="rDescription$Loop_laId"></textarea></td>
</tr>
[/loop]
[/loop langs3]
<tr name="trLang$Loop_laId" style="display: none;">
  <td><label for="rInfo$Loop_laId">Info ($Loop_laLang)</label></td>
  <td><textarea cols="32" rows="4" name="rInfo_$Loop_laLang"
id="rInfo$Loop_laId"></textarea></td>
</tr>
[/loop]
<tr>
  <td><label for="pProtection">Protection</label></td>
  <td>
    <select name="pProtection" id="pProtection">
      <option selected="selected" value="-1">[None]</option>
      <option value="surface">Surface</option>
      <option value="university">University</option>
      <option value="course">Course</option>
      <option value="passed1">Passed 1</option>
      <option value="passed2">Passed 2</option>
      <option value="passed3">Passed 3</option>
    </select>
  </td>
</tr>
<tr>
  <td></td>
  <td><br /><input accesskey="A" value="Add Resource"
type="submit" /><br /><br />
  <input value=" Cancel " onclick="tb_remove()" type="button" /></td>
</tr>
</tbody>
</table>
</form>
</div>
<div id="divAddShortcut" style="display:none">
  <form enctype="application/x-www-form-urlencoded" method="get" action="mkbAdmin"
name="frmAddShortcut">
  <input name="func" value="resources" type="hidden" /><input
name="lang" value="$lang" type="hidden" />
  <input name="cId" value="$cId" type="hidden" />
  <input name="crParent" value="$cId" type="hidden" />
  <input name="input" value="shortcut" type="hidden" />
  <table>
  <tbody>
  <tr>
  <td><label for="rId">Resource</label></td>
  <td><select size="1" name="rId" id="rId">
    <option value="-2">Select resource</option>
    [loop shortcuts]
    <option
      [if execute $rId == $Loop_rIdShortcut]
      selected="selected"
      [/if]
      value="$Loop_rIdShortcut">[$Loop_rIdShortcut$Loop_laLang] $Loop_rTitle</option>
    [/loop]
  </select></td>
  </tr>
  </tbody>
  </table>
  </div>

```



```

        <td><label for="copy">Copy</label></td>
        <td><input name="copy" id="copy" value="no" type="checkbox" /> [Mock-up]</td>
    </tr>
    <tr>
        <td></td>
        <td><br /><input accesskey="A" value="Add Existing"
            type="submit" /><br /><br />
            <input value=" Cancel " onclick="tb_remove()" type="button" /></td>
    </tr>
</tbody>
</table>
</form>
</div>
</td>
</tr>
<tr>
    <td
        style="vertical-align: top; width: 100%; background-color: rgb(222, 222, 222);"
        <table style="text-align: left; width: 100%;" border="1"
            cellpadding="2" cellspacing="2">
            <tbody>
                <tr>
                    <th><input type="checkbox" name="chkAll" onclick="return clickedAll(this)" /></th>
                    <th>Title</th>
                    <th>Id.</th>
                    <th>To</th>
                    <th>P.</th>
                    <th>N.</th>
                    <th>Up</th>
                    <th>Dn</th>
                    <th>Lang.</th>
                    <th>Protection</th>
                    <!--th>Author</th-->
                    <th>Add Res./Exist.</th>
                    <th>Edit</th>
                    <th>Del.</th>
                </tr>
                [loop resources]
                [if !$Loop_end]
                <tr style="vertical-align: top">
                    <td>
                        <input type="checkbox" name="chkFrom" value="$Loop_rId" onclick="clickedFrom(this)" />
                    </td>
                    <td>
                        <script type="text/javascript">
                            /*  */
                            for(var i = 2; i &lt;= $Loop_level ; ++i) {
                                document.write("----");
                            }
                            /* ]]&gt; */
                        &lt;/script&gt;
                        [if $Loop_uURI]
                        [if execute $Loop_uURI =~ m!\w+://i]
                        &lt;a rel="colleague" target="_blank"
                            href="mkbAdmin?func=redirect&amp;amp;uRI=$Loop_rId&amp;amp;uURI=$Loop_uURI"&gt;&lt;i&gt;$Loop_rTitle&lt;/i&gt;&lt;/a&gt;
                        [/if]
                        [if execute $Loop_uURI !~ m!\w+://i]
                        &lt;a rel="me"
                            href="mkbAdmin?func=download&amp;amp;uRI=$Loop_rId&amp;amp;uURI=$Loop_uURI"&gt;&lt;i&gt;$Loop_rTitle&lt;/i&gt;&lt;/a&gt;
                        [/if]
                        [/if]
                        [if !$Loop_uURI]
                        &lt;i&gt;$Loop_rTitle&lt;/i&gt;
                        [/if]
                        [if $Loop_rDescription]
                        &lt;a class="tooltipSticky" href="javascript:void" title="|$Loop_rDescription"&gt;[D]&lt;/a&gt;
                        [/if]
                        [if $Loop_rInfo]
                        &lt;a class="tooltip" href="javascript:void" title="|$Loop_rInfo"&gt;&lt;img
                            src="/mkb/admin/en/desc.gif" alt="[i]" /&gt;&lt;/a&gt;
                        [/if]
                    &lt;/td&gt;
                    &lt;td&gt;$Loop_rId&lt;/td&gt;
                    &lt;td&gt;
                        &lt;input type="radio" name="radTo" value="$Loop_rId" disabled="disabled"
                            onclick="return clickedTo(this)" /&gt;
                    &lt;/td&gt;
                    &lt;td&gt;
                        [if !$Loop_hasFirstParent]
                        &lt;a class="button"
                            href="javascript:void document frmLeft$Loop_resourcesIndex.submit()"
                            title="Previous Parent"&gt;&amp;nbsp;&amp;nbsp;/&amp;nbsp;&nbsp;&amp;nbsp;&lt;/a&gt;
                        &lt;form enctype="application/x-www-form-urlencoded"
</pre>
</div>
<div data-bbox="695 876 891 892" data-label="Page-Footer">MSc Mikael O. Bonnier</div>
```

```

method="get" action="mkbAdmin" name="frmLeft$Loop_resourcesIndex"><input
name="func" value="left" type="hidden" /><input
name="lang" value="$lang" type="hidden" /><input
name="cId" value="$cId" type="hidden" /><input
name="rId" value="$Loop_rId" type="hidden" /><!--input
accesskey="R" value="Left" type="submit" /--></form>
[/if]
</td>
<td>
[if !$Loop_hasLastParent]
<a class="button"
href="javascript:void document.frmRight$Loop_resourcesIndex.submit()"
title="Next Parent">&nbsp;&nbsp;&nbsp;/&nbsp;&nbsp;&nbsp;</a>
<form enctype="application/x-www-form-urlencoded"
method="get" action="mkbAdmin" name="frmRight$Loop_resourcesIndex"><input
name="func" value="right" type="hidden" /><input
name="lang" value="$lang" type="hidden" /><input
name="cId" value="$cId" type="hidden" /><input
name="rId" value="$Loop_rId" type="hidden" /><!--input
accesskey="R" value="Right" type="submit" /--></form>
[/if]
</td>
<td>
[if !$Loop_isFirst]
<a class="button"
href="javascript:void document.frmUp$Loop_resourcesIndex.submit()"
title="Up">&nbsp;&nbsp;&nbsp;~&nbsp;&nbsp;&nbsp;</a>
<form enctype="application/x-www-form-urlencoded" method="get" action="mkbAdmin"
name="frmUp$Loop_resourcesIndex"><input name="func" value="up" type="hidden" /><input
name="lang" value="$lang" type="hidden" /><input name="cId"
value="$cId" type="hidden" /><input name="rId" value="$Loop_rId"
type="hidden" /><!--input accesskey="U"
value="Up" type="submit" /--></form>
[/if]
</td>
<td>
[if !$Loop_isLast]
<a class="button"
href="javascript:void document.frmDown$Loop_resourcesIndex.submit()"
title="Down">&nbsp;&nbsp;&nbsp;v&nbsp;&nbsp;&nbsp;</a>
<form enctype="application/x-www-form-urlencoded"
method="get" action="mkbAdmin" name="frmDown$Loop_resourcesIndex"><input
name="func" value="down" type="hidden" /><input
name="lang" value="$lang" type="hidden" /><input
name="cId" value="$cId" type="hidden" /><input
name="rId" value="$Loop_rId" type="hidden" /><!--input
accesskey="D" value="Down" type="submit" /--></form>
[/if]
</td>
<td>$Loop_laLang</td>
<td>$Loop_pProtection</td>
<!--td>$Loop_aAuthor</td-->
<td>
<a
href="#TB_inline?height=430&width=430&inlineId=divAddResource$Loop_resourcesIndex&modal=true"
class="thickbox button"
title="Add Resource">&nbsp;&nbsp;&nbsp;+R&nbsp;&nbsp;&nbsp;</a>
<a
href="#TB_inline?height=400&width=500&inlineId=divAddShortcut$Loop_resourcesIndex&modal=true"
class="thickbox button"
title="Add Existing Resource">&nbsp;&nbsp;&nbsp;+Ex&nbsp;&nbsp;&nbsp;</a>
<div id="divAddResource$Loop_resourcesIndex" style="display:none">
<form enctype="application/x-www-form-urlencoded"
method="get" action="mkbAdmin" name="frmAddResource$Loop_resourcesIndex">
<input name="func" value="resources" type="hidden" /><input
name="lang" value="$lang" type="hidden" />
<input name="cId" value="$cId" type="hidden" />
<input name="crParent" value="$Loop_rId" type="hidden" />
<input name="input" value="link" type="text" style="display:none" />
<table>
<tbody>
<tr>
<tr>
<td><label for="radRTypeURI$Loop_resourcesIndex">Resource&nbsp;&nbsp;&type</label></td>
<td><input type="radio" name="radRType"
id="radRTypeURI$Loop_resourcesIndex" value="link"
checked="checked" onclick="clickedURI(this)" /><label
for="radRTypeURI$Loop_resourcesIndex">URI</label>
<input type="radio" name="radRType"
id="radRTypeFile$Loop_resourcesIndex" value="file"
onclick="clickedFile(this)" /><label
for="radRTypeFile$Loop_resourcesIndex">File</label></td>
</tr>
</tr>
</tbody>
</table>

```

```

        <td>Languages</td>
        <td>
          [loop langs4]
          <input name="chkLang$Loop_resourcesIndex$_" value="$Loop_laId" type="checkbox"
            onclick="displayLang(this)" />&nbsp;$Loop_laLang
          [/loop]
        </td>
      </tr>
      [loop langs1]
      <tr name="trLang$Loop_resourcesIndex$_$Loop_laId" style="display: none;">
        <td><label for="rTitle$Loop_laId$_$Loop_resourcesIndex">Title ($Loop_laLang)</label></td>
        <td><input name="rTitle_$Loop_laLang" id="rTitle$Loop_laId$_$Loop_resourcesIndex" /></td>
      </tr>
      [/loop]
      <tr>
        <td><label for="uURI$Loop_resourcesIndex">URI</label></td>
        <td><input name="uURI" id="uURI$Loop_resourcesIndex" value="http://" /></td>
      </tr>
      <tr>
        <td><label for="aAuthor$Loop_resourcesIndex">Author</label></td>
        <td><input name="aAuthor" id="aAuthor$Loop_resourcesIndex" /></td>
      </tr>
      <tr>
        <td><label for="aPublisher$Loop_resourcesIndex">Publisher</label></td>
        <td><input name="aPublisher" id="aPublisher$Loop_resourcesIndex" /></td>
      </tr>
      <tr>
        <td><label for="aCity$Loop_resourcesIndex">City</label></td>
        <td><input name="aCity" id="aCity$Loop_resourcesIndex" /></td>
      </tr>
      [loop langs2]
      <tr name="trLang$Loop_resourcesIndex$_$Loop_laId" style="display: none;">
        <td><label for="rDescription$Loop_laId$_$Loop_resourcesIndex">Description
          ($Loop_laLang)</label></td>
        <td><textarea cols="32" rows="4" name="rDescription_$Loop_laLang"
          id="rDescription$Loop_laId$_$Loop_resourcesIndex"></textarea></td>
      </tr>
      [/loop]
      [loop langs3]
      <tr name="trLang$Loop_resourcesIndex$_$Loop_laId" style="display: none;">
        <td><label for="rInfo$Loop_laId$_$Loop_resourcesIndex">Info ($Loop_laLang)</label></td>
        <td><textarea cols="32" rows="4" name="rInfo_$Loop_laLang"
          id="rInfo$Loop_laId$_$Loop_resourcesIndex"></textarea></td>
      </tr>
      [/loop]
      <tr>
        <td><label for="pProtection$Loop_resourcesIndex">Protection</label></td>
        <td>
          <select name="pProtection" id="pProtection$Loop_resourcesIndex">
            <option selected="selected" value="-1">[None]</option>
            <option value="surface">Surface</option>
            <option value="university">University</option>
            <option value="course">Course</option>
            <option value="passed1">Passed 1</option>
            <option value="passed2">Passed 2</option>
            <option value="passed3">Passed 3</option>
          </select>
        </td>
      </tr>
      <tr>
        <td></td>
        <td><br /><input accesskey="A" value="Add Resource"
          type="submit" /><br /><br />
          <input value=" Cancel " onclick="tb_remove()" type="button" /></td>
      </tr>
    </tbody>
  </table>
</form>
</div>
<div id="divAddShortcut$Loop_resourcesIndex" style="display:none">
  <form enctype="application/x-www-form-urlencoded" method="get" action="mkbAdmin"
    name="frmAddShortcut$Loop_resourcesIndex">
    <input name="func" value="resources" type="hidden" /><input
      name="lang" value="$lang" type="hidden" />
    <input name="cId" value="$cId" type="hidden" />
    <input name="crParent" value="$Loop_rId" type="hidden" />
    <input name="input" value="shortcut" type="hidden" />
  <table>
    <tbody>
      <tr>
        <td><label for="rId$Loop_resourcesIndex">Resource</label></td>
        <td><select size="1" name="rId" id="rId$Loop_resourcesIndex">
          <option value="-2">Select resource</option>
        </td>
      </tr>
    </tbody>
  </table>

```

```

[loop shortcuts]
<option
  [if execute $rId == $Loop_rIdShortcut]
    selected="selected"
  [/if]
  value="$Loop_rIdShortcut">[$Loop_rIdShortcut$Loop_laLang] $Loop_rTitle</option>
[/loop]
</select></td>
</tr>
<tr>
<td><label for="copy$Loop_resourcesIndex">Copy</label></td>
<td><input name="copy" id="copy$Loop_resourcesIndex" value="no" type="checkbox" />
[Mock-up]</td>
</tr>
<tr>
<td></td>
<td><br /><input accesskey="A" value="Add Existing"
type="submit" /><br /><br />
<input value=" Cancel " onclick="tb_remove()" type="button" /></td>
</tr>
</tbody>
</table>
</form>
</div>
</td>
<td>
<a
href="#TB_inline?height=430&width=430&inlineId=divEdit$Loop_resourcesIndex&modal=true"
class="thickbox button" title="Edit Resource">&nbsp;&nbsp;&nbsp;Ed&nbsp;&nbsp;&nbsp;</a>
<div id="divEdit$Loop_resourcesIndex" style="display:none">
<form enctype="application/x-www-form-urlencoded"
method="get" action="mkbAdmin" name="frmEdit$Loop_resourcesIndex">
<input name="func" value="resources" type="hidden" /><input
name="lang" value="$lang" type="hidden" />
<input name="cId" value="$cId" type="hidden" />
<input name="rId" value="$Loop_rId" type="hidden" />
<input name="input" value="edit" type="hidden" />
<table>
<tbody>
<tr>
<td><label for="radRTypeURIEdit$Loop_resourcesIndex">Resource&nbsp;type</label></td>
<td><input type="radio" name="radRType"
id="radRTypeURIEdit$Loop_resourcesIndex" value="link"
checked="checked" onclick="clickedURI(this)" /><label
for="radRTypeURIEdit$Loop_resourcesIndex">URI</label>
<input type="radio" name="radRType"
id="radRTypeFileEdit$Loop_resourcesIndex" value="file"
onclick="clickedFile(this)" /><label
for="radRTypeFileEdit$Loop_resourcesIndex">File</label></td>
</tr>
<tr>
<td>Languages</td>
<td>
[loop langs5]
<input name="chkLangEdit$Loop_resourcesIndex$_" value="$Loop_laId" type="checkbox"
onclick="displayLang(this)" />&nbsp;&nbsp;&nbsp;$Loop_laLang
[/loop]
</td>
</tr>
[loop langsEdit]
<tr name="trLangEdit$Loop_resourcesIndex$_$Loop_laId" style="display: none;">
<td><label for="rTitleEdit$Loop_laId$_$Loop_resourcesIndex">Title
($Loop_laLang)</label></td>
<td><input name="rTitle_$Loop_laLang" id="rTitleEdit$Loop_laId$_$Loop_resourcesIndex"
value="$Loop_rTitle" /></td>
</tr>
[/loop]
<tr>
<td><label for="uURIEdit$Loop_resourcesIndex">URI</label></td>
<td><input name="uURI" id="uURIEdit$Loop_resourcesIndex" value="$Loop_uURI" /></td>
</tr>
<tr>
<td><label for="aAuthorEdit$Loop_resourcesIndex">Author</label></td>
<td><input name="aAuthor" id="aAuthorEdit$Loop_resourcesIndex" value="$Loop_aAuthor" /></td>
</tr>
<tr>
<td><label for="aPublisherEdit$Loop_resourcesIndex">Publisher</label></td>
<td><input name="aPublisher" id="aPublisherEdit$Loop_resourcesIndex"
value="$Loop_aPublisher" /></td>
</tr>
<tr>
<td><label for="aCityEdit$Loop_resourcesIndex">City</label></td>
<td><input name="aCity" id="aCityEdit$Loop_resourcesIndex" value="$Loop_aCity" /></td>

```



```

<div id="divEditLibrarian$Loop_usId" style="display:none">
<form enctype="application/x-www-form-urlencoded" method="post"
action="mkbAdmin" name="frmEditLibrarian$Loop_usId"><input
name="func" value="librarians" type="hidden" /><input
name="lang" value="$lang" type="hidden" /><input
name="usId" value="$Loop_usId" type="hidden" /><input
name="input" value="edit" type="hidden" />
<table>
<tbody>
<tr>
<td><label for="usUsername_ed$Loop_usId">Username</label></td>
<td><input name="usUsername" id="usUsername_ed$Loop_usId" value="$Loop_usUsername" /></td>
</tr>
<tr>
<td><label for="lPassword_ed$Loop_usId">Password</label></td>
<td><input name="lPassword" id="lPassword_ed$Loop_usId" value="$Loop_lPassword"
type="password" /></td>
</tr>
<tr>
<td><label for="lEmail_ed$Loop_usId">Email</label></td>
<td><input name="lEmail" id="lEmail_ed$Loop_usId" value="$Loop_lEmail" /></td>
</tr>
<tr>
<td><label for="lFirstname_ed$Loop_usId">Firstname</label></td>
<td><input name="lFirstname" id="lFirstname_ed$Loop_usId" value="$Loop_lFirstname" /></td>
</tr>
<tr>
<td><label for="lLastname_ed$Loop_usId">Lastname</label></td>
<td><input name="lLastname" id="lLastname_ed$Loop_usId" value="$Loop_llLastname" /></td>
</tr>
<tr>
<td><label for="lPhone_ed$Loop_usId">Phone</label></td>
<td><input name="lPhone" id="lPhone_ed$Loop_usId" value="$Loop_lPhone" /></td>
</tr>
<tr>
<td><label for="lMobile_ed$Loop_usId">Mobile</label></td>
<td><input name="lMobile" id="lMobile_ed$Loop_usId" value="$Loop_lMobile" /></td>
</tr>
<tr>
<td><label for="lAccess_ed$Loop_usId">Access</label></td>
<td>
<select name="lAccess" id="lAccess_ed$Loop_usId">
<option
[if execute $Loop_lAccess eq 'rw']
selected="selected"
[/if]
value="rw">Read/Write</option>
<option
[if execute $Loop_lAccess eq 'r']
selected="selected"
[/if]
value="r">Read</option>
<option
[if execute $Loop_lAccess eq 'w']
selected="selected"
[/if]
value="w">Write</option>
<option
[if execute $Loop_lAccess eq 'passed1']
selected="selected"
[/if]
value="passed1">Passed 1</option>
<option
[if execute $Loop_lAccess eq 'passed2']
selected="selected"
[/if]
value="passed2">Passed 2</option>
<option
[if execute $Loop_lAccess eq 'passed3']
selected="selected"
[/if]
value="passed3">Passed 3</option>
</select>
</td>
</tr>
<tr>
<td></td>
<td><br /><input accesskey="E" value="Edit" type="submit" /><br /><br />
<input value=" Cancel " onclick="tb_remove()" type="button" /></td>
</tr>
</tbody>
</table>
</form>

```



```

        </div>
      </td>
    </tr>
  </tbody>
</table>
</td>
</tr>
</tbody>
</table>
[include footer.t.html]
</body>
</html>

```

4.7 query.t.html

This is a template of about 70 lines that an administrator can use to do SQL queries with a nice presentation without wrapping rows. This should not be available for ordinary administrators in the released version.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<!-- Author of XHTML, CSS, JavaScript, and template code: Mikael O. Bonnier -->
<!-- Administrator Template -->
  <head>
    <title>MKB Query $database</title>
    <link rel="stylesheet" type="text/css" href="/mkb/admin/en/style.css" />
    <link rel="stylesheet" type="text/css" href="/mkb/admin/en/thickbox.css" media="screen" />
    <script type="text/javascript" src="/mkb/admin/en/jquery.js"></script>
    <script type="text/javascript" src="/mkb/admin/en/thickbox.js"></script>
    <style type="text/css">
      .button {
        border-style: outset;
        font-family: Arial,Helvetica,sans-serif;
        text-decoration: none;
        color: black;
        background-color: silver;
        font-weight: normal;
        font-size: x-small;
      }
      body {
        font-family: Arial,Helvetica,sans-serif;
        background-color: silver;
      }
    </style>
    <meta http-equiv="content-type" content="text/html; charset=UTF-8" />
  </head>
  <body>
    <h3>MKB Query $database [mkbadmsid=$mkbadmsid]</h3>
    <table style="text-align: left; width: 100%; border="0"
      cellpadding="2" cellspacing="2">
      <tbody>
        <tr>
          <td style="vertical-align: top; background-color: rgb(255, 204, 204);">
            [include menu.t.html]
          </td>
        </tr>
        <tr>
          <td style="vertical-align: top; width: 100%; background-color: rgb(222, 222, 222);">
            <form enctype="application/x-www-form-urlencoded" method="get" action="mkbAdmin"
              name="frmQuery"><input name="func" value="query" type="hidden" /><input
              name="lang" value="$lang" type="hidden" /><input name="database"
              value="$database" type="hidden" /><textarea
              accesskey="q" cols="70" rows="15" name="query">$query</textarea><br />
              <input accesskey="G" value="Go" type="submit" /></form>
            No of rows=$count
            <table border="1">
              <tbody>
                <tr>
                  <td>
                    [loop headings]
                    <th>$Loop_heading</th>
                    [loop]
                  </td>
                </tr>
                <tr>
                  <td>
                    [loop rows]

```

```

        <tr>
          [loop fields]
          <td>${Loop_field}</td>
        [ /loop]
      </tr>
    [ /loop]
  </tbody>
</table>
</td>
</tr>
</tbody>
</table>
[include footer.t.html]
</body>
</html>

```

4.8 error.t.html

This is a template of about 50 lines for displaying internal errors for administrators.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
<head>
<meta content="text/html; charset=UTF-8"
http-equiv="content-type" />
<title>MKB Admin Error</title>
<link rel="stylesheet" type="text/css"
href="/mkb/admin/en/style.css" />
<link rel="stylesheet" type="text/css"
href="/mkb/admin/en/thickbox.css" media="screen" />
<!--<script type="text/javascript" src="/mkb/admin/en/jquery.js"></script>
<script type="text/javascript"
src="/mkb/admin/en/thickbox.js"></script>-->
<style type="text/css">
.button {
border-style: outset;
font-family: Arial,Helvetica,sans-serif;
text-decoration: none;
color: black;
background-color: silver;
font-weight: normal;
font-size: x-small;
}
body {
font-family: Arial,Helvetica,sans-serif;
background-color: silver;
}
</style>
</head>
<body>
<h3>MKB Admin Error [mkbadmsid=${mkbadmsid}]</h3>
<table style="text-align: left; width: 100%;" border="0"
cellpadding="2" cellspacing="2">
<tbody>
<tr>
<td style="vertical-align: top; background-color: rgb(255, 204, 204);">
[include menu.t.html]
</td>
</tr>
<tr>
<td
style="vertical-align: top; width: 100%; background-color: rgb(222, 222, 222);">
<font color="red">${error}</font>
</td>
</tr>
</tbody>
</table>
[include footer.t.html]
</body>
</html>

```

5 User Interfaces on Web Server

The web server part of the user interfaces was developed in Perl and uses proprietary modules used by Lund University Libraries for handling cookies, inputs from forms, and output to templates, but they could be replaced by Perl's CGI and HTML::Template modules. There is also one proprietary module to simplify the database management.² The proprietary modules and Perl's standard modules are not discussed in this report. These scripts were tidied using the command:

```
perltidy -l=78 -i=4 -ci=4 -cti=0 -nsfs -ce code.pl
```

5.1 mkb.pl

This is a Perl script of about 300 lines that generates the user interface for the students.

```
#!/usr/bin/perl

# Author: Mikael O. Bonnier

# no warnings 'utf8';
use strict;
$|++; # Disabling the buffering of STDOUT.

# use Mail::Sender;
use Net::LDAP; # from CPAN
use lib './lib';
use webUtil; # from Lund University Libraries, Head Office
use cookies; # from Lund University Libraries, Head Office
use database; # from Lund University Libraries, Head Office

# webUtil, cookies, and database are classes even though they begin with small letters.
use MKBCfg;
use MKBCommon;

my $webUtil = new webUtil;
my $web = $webUtil->getWeb;
my $cfg = new MKBCfg;
copyValues( $cfg, $web );
### Language of the interface
$web->{lang} = $cfg->{defaultLanguage} unless $web->{lang};
$web->{lang} = 'en' unless $web->{lang};
my $templateDir = "$web->{templateDir}/$web->{lang}";

my $mkbDb =
    new database( $cfg->{db}, $cfg->{dbHost}, $cfg->{dbUser},
                 $cfg->{dbPasswd} )
    or fatal('Could not open database.');
```

```
$mkbDb->Do("set names utf8");

my $cookies = new cookies;
$web->{mkbsid} = $cookies->get_cookie('mkbsid');

my @thisYear = localtime();
$web->{currentYear} = $thisYear[5] + 1900;

my $laPrios = MKBCommon::makeLaPrioList( $mkbDb, $web );

# Index is language, and value is priority of language.

my $qtop = qq|select rId,
substring_index(group_concat(rTitle order by elt(rLaId,$laPrios) asc separator '#'), '#', 1) as rTitle,
substring_index(group_concat(rDescription order by elt(rLaId,$laPrios) asc separator '#'), '#', 1)
```

²The designer of the WebUtil framework and author of the modules WebUtil.pm and database.pm is MSc Salam Baker Shanawa, Head Office, Lund University Libraries.

```

    as rDescription,
    substring_index(group_concat(rInfo order by elt(rLaId,$laPrios) asc separator '#'), '#', 1) as rInfo,
    uURI, uType, unix_timestamp(max(rUpdated)) as rLastModified,
    unix_timestamp(max(rInserted)) as rAddDate,
    unix_timestamp(uVisited) as rLastVisited,
    aAuthor, pProtection
    from (( #Resources inner join Langs on rLaId = laId)
    Resources inner join CourseResources on rId = crRid)
    left join URIs on rId = uRid)
    left join Articles on rId = aRid)
    left join Protections on rId = pRid);
my $maxLevel;    # = 3; # This can be used for optimization.

$web->{func} = 'home' unless $web->{func};

checkFunc( $web->{func} );
my $func = \&{ $web->{func} }; # part of webUtil framework
&{$func};                    # part of webUtil framework
exit;

### Functions

sub checkFunc {
    MKBCommon::checkFunc( $webUtil, $templateDir, @_ );
}

sub fatal {
    my $error = shift;
    MKBCommon::fatal( $webUtil, $templateDir, $error );
}

sub copyValues {
    MKBCommon::copyValues(@_);
}

sub home {
    $webUtil->printTemplate( $templateDir, 'home.t.html', $web );
}

sub libsOpen {
    my $q = qq|select distinct dId, dCode, replace(
        substring_index(group_concat(dtName order by elt(dtLaId,$laPrios) asc separator '#'), '#', 1),
        '&', '&amp;') as dName
    from ((Departments inner join DepartmentTexts on dId = dtDid)
    inner join DepartmentCourses on dId = dcDid)
    inner join Courses on dcCid = cId
    where dParent is not NULL and cOnlineStart <= now()
    group by dtDid
    order by dCode|;
    $web->{departments} = $mkDb->SelectMany($q);
    if ( $web->{dId} != -2 ) {
        $q = qq|select cId, cCode, replace(left(
            substring_index(group_concat(rTitle order by elt(rLaId,$laPrios) asc separator '#'), '#', 1),
            70), '&', '&amp;') as cName
        from (Courses inner join Resources on cId = rId)|;
        if ( $web->{dId} != -1 ) {
            $q .= qq| inner join DepartmentCourses on cId = dcCid
                where dcDId = $web->{dId} and cOnlineStart <= now()|;
        } else {
            $q .= qq| where cOnlineStart <= now()|;
        }
        $q .= q| group by rId
            order by cCode|;
        $web->{libraries} = $mkDb->SelectMany($q);
    }
    $webUtil->printTemplate( $templateDir, 'libsOpen.t.html', $web );
}

sub libsLocked {
    $webUtil->printTemplate( $templateDir, 'libsLocked.t.html', $web );
}

sub login {
    MKBCommon::login( $mkDb, $web, $cookies, 'mkbsid' );
    if ( $web->{'mkbsid'} && $web->{postfunc} ne 'login' ) {
        checkFunc( $web->{postfunc} );
        my $func = \&{ $web->{postfunc} };
        &{$func};
    } else {
        $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
    }
}

```

```

sub logout {
    $web->{cookies} =
        $cookies->remove_cookie( 'mkbsid', '/', $web->{cookieDomain} );
    delete $web->{mkbsid};

    # TODO Increase security.
    $web->{postfunc} = 'home';
    $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
}

sub resources {
    &genResourcesView;
    $web->{tDir} && $templateDir =~ s|^(.+)/(.?)$|1/$web->{tDir}/$2|;
    $webUtil->printTemplate( $templateDir, 'resources.t.html', $web );
}

sub genResourcesView {
    my $q = qq|select cId,
        substring_index(group_concat(rTitle order by elt(rLaId,$laPrios) asc separator '#'), '#', 1)
        as cName,
        unix_timestamp(max(rUpdated)) as cLastModified,
        unix_timestamp(max(rInserted)) as cAddDate,
        tDir, lFirstname, lLastname, lEmail
    from (((Courses inner join CourseResources on cId = crCId)
        inner join Resources on crRId = rId)
        left join Librarians on cUsId = lUsId)
        left join Templates on cTId = tId
    where crParent is NULL and cId = $web->{cId} and cOnlineStart <= now()
    group by rId|;
    my $a = $mkbDb->SelectOneRec($q);
    if ( !defined $a ) {
        fatal('Course not online.');
```

```

    }
    copyValues( $a, $web );
    $q = qq|$qtop
        where crParent = $web->{cId} and crCId = $web->{cId}
        group by rId
        order by crPriority asc|;
    my $h1s = $mkbDb->SelectMany($q);
    $web->{h1s} = genResources( $h1s, 1, 1, 1 );
    $web->{h1s} = '_';
}

sub genResources {
    my ( $h1s, $level, $hasFirstParent, $hasLastParent ) = @_;
    if ( defined $maxLevel && $level >= $maxLevel ) {
        return $h1s;
    }
    my $i = 0;
    for my $h1 ( @$h1s ) {
        ++$i;
        $h1->{level} = $level;
        $h1->{isFirst} = ( $i == 1 );
        $h1->{isLast} = ( $i == scalar @$h1s );
        $h1->{hasFirstParent} = $hasFirstParent;
        $h1->{hasLastParent} = $hasLastParent;
        push @{$web->{resources}}, $h1;
        my $q = qq|$qtop
            where crParent = $h1->{rId}
            group by rId
            order by crPriority asc|;
        my $h2s = $mkbDb->SelectMany($q);

        if ( @$h2s ) {
            genResources( $h2s, $level + 1, $h1->{isFirst}, $h1->{isLast} );
            $h1->{ 'h' . ( $level + 1 ) . 's' } = $h2s;
            $h1->{ 'h' . $level . 'sIndex' } = $i;
            $web->{"rId$h1->{rId}s"} = $h2s;
        }
    }
    push @{$web->{resources}}, { 'end' => 1 };
    return $h1s;
}

sub download {
    if ( !checkProtection( $web->{uRId} ) ) {
        $web->{postfunc} = 'download';
        $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
        return;
    }
    MKBCCommon::download( $mkbDb, $web, 'admin/uploads' );
}

```

```

sub redirect {
    if ( !checkProtection( $web->{uRI} ) ) {
        $web->{postfunc} = 'redirect';
        $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
        return;
    }
    my $q = qq|select uURI
                from URIs
                where uRI = $web->{uRI}|;
    my $URI = $mkbDb->SelectOneRec($q)->{uURI};
    $webUtil->redirect($URI); # Needs bug fixed method
}

sub checkProtection {
    my ($pRI) = @_;
    my $q = qq|select pProtection
                from Protections
                where pRI = $pRI|;
    my $pProtection = eval { $mkbDb->SelectOneRec($q)->{pProtection} };
    return 1 unless $pProtection;
    if ( $pProtection eq 'surface' ) {
        return 1; # TODO Here one can implement proper check if on surface.
    } elsif ( $pProtection eq 'university' ) {
        for my $ip ( @ { $cfg->{universityIPs} } ) {
            return 1 if $ENV{REMOTE_ADDR} =~ m/"$ip/;
        }
        $web->{errorMessages} = 'Not in this university.';
    }
    if ( $web->{mkbsid} ) {
        delete $web->{errorMessages};
        if ( $pProtection eq 'university' ) {
            # Genuinly logged in?
            my $q = qq|select sId
                        from Sessions
                        where sId = $web->{mkbsid}|;
            return 1 if defined eval { $mkbDb->SelectOneRec($q)->{sId} };
            $web->{errorMessages} = 'Not registered in this university.';
        } elsif ( $pProtection eq 'course' ) {
            || $pProtection eq 'passed1'
            || $pProtection eq 'passed2'
            || $pProtection eq 'passed3' )
        {
            my $q = qq|select usId, usUsername
                        from Users, Sessions
                        where usId = sUsId and sId = $web->{mkbsid}|;
            my $a = $mkbDb->SelectOneRec($q);
            my $usUsername = $a->{usUsername};
            $q = qq|select cCode
                    from Courses
                    where cId = $web->{cId}|;
            my $cCode = $mkbDb->SelectOneRec($q)->{cCode};
            return 1
                if MKBCommon::checkUserRegOnCourse( $cfg, $usUsername,
                                                    $cCode );
            $q = qq|select ucId
                    from UserCourses inner join Librarians on ucUsId = lUsId
                    where ucUsId = $a->{usId} and ucId = $web->{cId} and lAccess != 'w'|;
            return 1 if defined eval { $mkbDb->SelectOneRec($q)->{ucId} };
            $web->{errorMessages} = 'Not registered in this course.';
        }
    }
    return 0;
}

```

5.2 admin.pl

This is a Perl script of about 900 lines that generates the user interface for the administrators, i.e. teachers and librarians.

```

#!/usr/bin/perl

# Author: Mikael O. Bonnier

# no warnings 'utf8';
use strict;

```

```

$|++; # Disabling the buffering of STDOUT.

# use Mail::Sender;
use Net::LDAP; # from CPAN
use Encode; # from CPAN
use lib '../lib';
use webUtil; # from Lund University Libraries, Head Office
use cookies; # from Lund University Libraries, Head Office
use database; # from Lund University Libraries, Head Office

# webUtil, cookies, and database are classes even though they begin with small letters.
use MKBCCommon;
use MKBCfg;

my $webUtil = webUtil->new();
my $web = $webUtil->getWeb;
my $cfg = MKBCfg->new();
copyValues( $cfg, $web );

$web->{lang} = $cfg->{defaultLanguage} unless $web->{lang};
$web->{lang} = 'en' unless $web->{lang};

my $templateDir = "templates";
$templateDir = "$templateDir/$web->{lang}";

my $mkbdb =
    database->new( $cfg->{db}, $cfg->{dbHost}, $cfg->{dbUser},
        $cfg->{dbPasswd} )
    or fatal('Could not open database. ');
$mkbdb->Do("set names utf8");
$web->{langs} = &getLangs;

my $cookies = cookies->new();
$web->{mkbadmsid} =
    $cookies->get_cookie('mkbadmsid'); # Comment away to test from shell

# $web->{mkbadmsid} = '12345';
# From shell: QUERY_STRING='mkbadmsid=12345&func=redirect&uRid=6' perl -W admin.pl
# From shell:
# QUERY_STRING='mkbadmsid=12345&func=libraries&dId=200000&cCode=GSCO02 \
# &cOnlineStart=2008-01-01&cName_en=Higher+Course&cName_sv=H/C3/B6gre+kurs' perl -W admin.pl

# my @thisYear = localtime();
# $web->{currentYear} = $thisYear[5] + 1900;

my $laPrios = MKBCCommon::makeLaPrioList( $mkbdb, $web );

# Index is language, and value is priority of language.

my $qtop =
    qq|select rId, crParent, group_concat(laLang order by elt(rLaId,$laPrios) asc separator ',')
        as laLang,
    substring_index(group_concat(rTitle order by elt(rLaId,$laPrios) asc separator '#'), '#', 1) as rTitle,
    substring_index(group_concat(rDescription order by elt(rLaId,$laPrios) asc separator '#'), '#', 1)
        as rDescription,
    substring_index(group_concat(rInfo order by elt(rLaId,$laPrios) asc separator '#'), '#', 1) as rInfo,
        uURI, uType, aAuthor, aPublisher, aCity, pProtection
    from (((Resources inner join Langs on rLaId = laId)
        inner join CourseResources on rId = crRid)
        left join URIs on rId = uRid)
        left join Articles on rId = aRid)
        left join Protections on rId = pRid|;
my $maxLevel; # = 3; # This can be used for optimization.
my $_resourcesIndex;

$web->{func} = 'libraries' unless $web->{func};

# TODO Better security
if ( !$web->{mkbadmsid}
    and $web->{func} ne 'login'
    and $web->{func} ne 'logout' )
{
    $web->{postfunc} = $web->{func};
    $web->{func} = 'home';
}

checkFunc( $web->{func} );
my $func = \&{ $web->{func} }; # part of webUtil framework
&{$func}; # part of webUtil framework
exit;

### Functions

```

```

sub checkFunc {
    MKBCommon::checkFunc( $webUtil, $templateDir, @_ );
}

sub fatal {
    my $error = shift;
    MKBCommon::fatal( $webUtil, $templateDir, $error );
}

sub copyValues {
    MKBCommon::copyValues(@_);
}

sub home {

    # my $q = "select * from Librarians";
    # my $as = $mkbdb->SelectMany($q);
    # $web->{librarians} = $as;
    $web->{postfunc} or $web->{postfunc} = 'libraries';
    $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
}

sub login {
    MKBCommon::login( $mkbdb, $web, $cookies, 'mkbadmsid' );
    if ( $web->{'mkbadmsid'} && $web->{postfunc} ne 'login' ) {
        checkFunc( $web->{postfunc} );
        my $func = \%{ $web->{postfunc} };
        &{$func};
    } else {
        $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
    }
}

sub logout {
    $web->{cookies} =
        $cookies->remove_cookie( 'mkbadmsid', '/', $web->{cookieDomain} );
    delete $web->{mkbadmsid};

    # TODO Increase security.
    $web->{postfunc} = 'libraries';
    $webUtil->printTemplate( $templateDir, 'login.t.html', $web );
}

sub libraries {
    $web->{usId} = &getUsId;
    &showLibraries;
}

sub getUsId {
    !defined $web->{mkbadmsid} and return undef;
    my $q = qq|select sUsId
        from Sessions
        where sId = $web->{mkbadmsid}|;
    return eval { $mkbdb->SelectOneRec($q)->{sUsId} };
}

sub addLibrary {
    $web->{usId} = &getUsId;
    my $info;
    my $langs = &getLangs;
    my $cId;
    for my $lang (@$langs) {
        if ( $web->{"cName_$lang->{laLang}"} ) {
            $info->{rTitle} = $web->{"cName_$lang->{laLang}"};
            $info->{rLaId} = $lang->{laId};
            if ($cId) {
                $info->{rId} = $cId;
                $mkbdb->Insert( 'Resources', $info );
            } else {
                $mkbdb->Insert( 'Resources', $info );
                $cId =
                    $mkbdb->{dbh}
                    ->last_insert_id( undef, undef, undef, undef );
            }
        }
        undef $info;
    }
    $info->{cId} = $cId;
    $info->{cCode} = $web->{cCode};
    $info->{cTId} = $web->{tId} != -1 ? $web->{tId} : 'NULL';
    $info->{cUsId} = $web->{usId}; # TODO Different course responsables
    $info->{cOnlineStart} = $web->{cOnlineStart};
}

```

```

# TODO Implement cLevel
$mkbdb->Insert( 'Courses', $info );
undef $info;
$info->{ucUsId} = $web->{usId};
$info->{ucCid} = $cId;
$mkbdb->Insert( 'UserCourses', $info );
undef $info;
$info->{dcDid} = $web->{dId};
$info->{dcCid} = $cId;
$mkbdb->Insert( 'DepartmentCourses', $info );
undef $info;
$info->{crCid} = $cId;
$info->{crRid} = $cId;
$info->{crPriority} = $cId;
$mkbdb->Insert( 'CourseResources', $info );

for ( my $i = 1; $i <= 2; ++$i ) {
    undef $info;
    $info->{crCid} = $cId;
    $info->{rLaId} = 1;
    $info->{rTitle} = "Tab $i";
    $mkbdb->Insert( 'Resources', $info );
    my $rId = $mkbdb->{dbh}->last_insert_id( undef, undef, undef, undef );
    undef $info;
    $info->{crCid} = $cId;
    $info->{crRid} = $rId;
    $info->{crPriority} = $rId;
    $info->{crParent} = $cId;
    $mkbdb->Insert( 'CourseResources', $info );
}
&showLibraries;
}

sub addExLibrary {
    $web->{usId} = &getUsId;
    my $info;
    $info->{ucUsId} = $web->{usId};
    $info->{ucCid} = $web->{cId};
    $mkbdb->Insert( 'UserCourses', $info );
    &showLibraries;
}

sub delLibrary {
    $web->{usId} = &getUsId;
    $mkbdb->Delete( 'UserCourses',
        "ucCid = $web->{cId} and ucUsId = $web->{usId}" );

    # TODO Write MySQL trigger.
    &showLibraries;
}

sub edLibrary {
    $web->{usId} = &getUsId;
    my $info;
    my $langs = &getLangs;
    for my $lang (@$langs) {
        if ( $web->{ 'cName_' . $lang->{laLang} } ) {
            $info->{rTitle} = $web->{ 'cName_' . $lang->{laLang} };
            my $q = qq|select count(*) as rCount
            from Resources
            where rid = $web->{cId} and rLaId = $lang->{laId}|;
            if ( $mkbdb->SelectOneRec($q)->{rCount} ) {
                $mkbdb->Update( 'Resources', $info,
                    "rId = $web->{cId} and rLaId = $lang->{laId}" );
            } else {
                $info->{rLaId} = $lang->{laId};
                $info->{rId} = $web->{cId};
                $mkbdb->Insert( 'Resources', $info );
            }
        } else {
            $mkbdb->Delete( 'Resources',
                "rId = $web->{cId} and rLaId = $lang->{laId}" );
        }
    }
    undef $info;
}
$info->{cCode} = $web->{cCode};
$info->{cTId} = $web->{tId} != -1 ? $web->{tId} : 'NULL';
$info->{cUsId} = $web->{usId}; # TODO Different course responsables
$info->{cOnlineStart} = $web->{cOnlineStart};

# TODO Implement cLevel
$mkbdb->Update( 'Courses', $info, "cId = $web->{cId}" );
undef $info;

```

```

$info->{dcDid} = $web->{dId};
$mkbDb->Update( 'DepartmentCourses', $info,
  "dcDid = $web->{dIdSave} and dcCId = $web->{cId}" );
&showLibraries;
}

sub showLibraries {
  my @langs1 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
  $web->{langs1} = \@langs1;
  my $q = qq|select tId, tDir
    from Templates
    order by tId|;
  $web->{templates} = $mkbDb->SelectMany($q);
  $q = qq|select distinct dId, dCode, replace(
    substring_index(group_concat(dtName order by elt(dtLaId,$laPrios) asc separator '#'), '#', 1),
    '&', '&') as dName
    from Departments inner join DepartmentTexts on dId = dtDId
    where dParent is not NULL
    group by dtDId
    order by dCode|;
  $web->{departments} = $mkbDb->SelectMany($q);
  $q = qq|select cId, cCode, replace(left(
    substring_index(group_concat(rTitle order by elt(rLaId,$laPrios) asc separator '#'), '#', 1),
    40), '&', '&') as cName
    from Courses inner join Resources on cId = rId
    where cId not in (select ucCId
      from UserCourses
      where ucUsId = $web->{usId})
    group by rId|;
  $web->{nonUserLibraries} = $mkbDb->SelectMany($q);
  $q = qq|select cId, cCode, replace(left(
    substring_index(group_concat(rTitle order by elt(rLaId,$laPrios) asc separator '#'), '#', 1),
    40), '&', '&') as cName,
    cOnlineStart, dcDId as dIdSave, coalesce(cTId, -1) as tIdSave
    from ((Courses inner join UserCourses on cId = ucCId)
      left join DepartmentCourses on cId = dcCId)
      left join Resources on cId = rId
    where ucUsId = $web->{usId}
    group by rId|;
  $web->{libraries} = $mkbDb->SelectMany($q);

  for my $library ( @{$web->{libraries}} ) {
    my @templates =
      @{$web->{templates}};
    }; # TODO Remove if webUtil is fixed regarding shift.
    $library->{templates} = \@templates;
    my @departments =
      @{$web->{departments}};
    }; # TODO Remove if webUtil is fixed regarding shift.
    $library->{departments} = \@departments;
    my $rId = $library->{cId};
    my $q = qq|select distinct laId, laLang, rTitle as cName
      from Langs left join (select rLaId, rTitle from Resources where rId = $rId) as Resources
        on laId = rLaId
        order by laId asc|;
    $library->{langs1} = $mkbDb->SelectMany($q);
  }
  $web->{=} = '_';
  $webUtil->printTemplate( $templateDir, 'libraries.t.html', $web );
}

sub librarians {
  if ( $web->{input} eq 'add' ) {
    my $q = qq|select usId
      from Users
      where usUsername = '$web->{usUsername}'|;
    my $usId = eval { $mkbDb->SelectOneRec($q->{usId} ) };
    my $info;
    unless ($usId) {
      my $infoUs;
      $infoUs->{usUsername} = $web->{usUsername};
      $mkbDb->Insert( 'Users', $infoUs );
      $info->{lUsId} =
        $mkbDb->{dbh}->last_insert_id( undef, undef, undef, undef );
    } else {
      $info->{lUsId} = $usId;
    }
    $info->{lManager} = getUsId();
    setUserParms($info);
    $mkbDb->Insert( 'Librarians', $info );
  } elsif ( $web->{input} eq 'remove' ) {
    $mkbDb->Delete( 'Librarians', "lUsId = $web->{usId}" )
    ; # TODO MySQL trigger.
  }
}

```

```

} elsif ( $web->{input} eq 'edit' ) {
    my $infoUs;
    $infoUs->{usUsername} = $web->{usUsername};
    $mkbDb->Update( 'Users', $infoUs, "usId = $web->{usId}" );
    my $info;
    $info->{lManager} = getUsId();
    setUserParmsEdit($info);
    $mkbDb->Update( 'Librarians', $info, "lUsId = $web->{usId}" );
}
my $q = q|select usId, usUsername, lPassword, lEmail, lPhone, lMobile,
    lFirstname, lLastname, lAccess
    from Users, Librarians
    where usId = lUsId|;

# and (lManager = $web->{usId} or lUsId = $web->{usId})|; # TODO Implement managers.
$web->{librarians} = $mkbDb->SelectMany($q);
$webUtil->printTemplate( $templateDir, 'librarians.t.html', $web );
}

sub setUserParms {
    my $info = shift;
    $web->{lPassword} and $info->{lPassword} = $web->{lPassword};
    $web->{lEmail} and $info->{lEmail} = $web->{lEmail};
    $web->{lPhone} and $info->{lPhone} = $web->{lPhone};
    $web->{lMobile} and $info->{lMobile} = $web->{lMobile};
    $web->{lFirstname} and $info->{lFirstname} = $web->{lFirstname};
    $web->{lLastname} and $info->{lLastname} = $web->{lLastname};
    $info->{lAccess} = $web->{lAccess}; # TODO Improve template.
}

sub setUserParmsEdit {
    my $info = shift;
    $info->{lPassword} = $web->{lPassword} ? $web->{lPassword} : 'NULL';
    $info->{lEmail} = $web->{lEmail} ? $web->{lEmail} : 'NULL';
    $info->{lPhone} = $web->{lPhone} ? $web->{lPhone} : 'NULL';
    $info->{lMobile} = $web->{lMobile} ? $web->{lMobile} : 'NULL';
    $info->{lFirstname} = $web->{lFirstname} ? $web->{lFirstname} : 'NULL';
    $info->{lLastname} = $web->{lLastname} ? $web->{lLastname} : 'NULL';
    $info->{lAccess} = $web->{lAccess}; # TODO Improve template.
}

sub resources {
    $web->{usId} = $getUsId;
    if ( $web->{input} eq 'link' || $web->{input} eq 'file' )
    {
        # AddResource or AddFile
        $addResource;
    } elsif ( $web->{input} eq 'shortcut' ) {
        $addExResource;
    } elsif ( $web->{input} eq 'remove' ) {
        $delResource;
    } elsif ( $web->{input} eq 'edit' ) {
        $edResource;
    }
    $genResourcesView;
    $webUtil->printTemplate( $templateDir, 'resources.t.html', $web );
}

sub addResource {
    my $info;
    my $langs = $getLangs;
    my $rId;
    for my $lang ( @$langs ) {
        if ( $web->{"rTitle_$lang->{laLang}"} ) {
            $info->{rTitle} = $web->{"rTitle_$lang->{laLang}"};
            $info->{rLaId} = $lang->{laId};
            $web->{"rDescription_$lang->{laLang}"}
                and $info->{rDescription} =
                    $web->{"rDescription_$lang->{laLang}"};
            $web->{"rInfo_$lang->{laLang}"}
                and $info->{rInfo} = $web->{"rInfo_$lang->{laLang}"};
            if ( $rId ) {
                $info->{rId} = $rId;
                $mkbDb->Insert( 'Resources', $info );
            } else {
                $mkbDb->Insert( 'Resources', $info );
                $rId =
                    $mkbDb->{dbh}
                    ->last_insert_id( undef, undef, undef, undef );
            }
        }
        undef $info;
    }
    $web->{crParent} and $info->{crParent} = $web->{crParent};
}

```

```

$info->{crPriority} = $rId;
$info->{crCId}     = $web->{cId};
$info->{crRId}     = $rId;
$mkbDb->Insert( 'CourseResources', $info );
undef $info;
delete $web->{crParent};
$info->{urUsId} = $web->{usId};
$info->{urRId} = $rId;
$mkbDb->Insert( 'UserResources', $info );
undef $info;
my $q = qq|select dcDId
           from DepartmentCourses
           where dcCId = $web->{cId}|;
my $departments = $mkbDb->SelectMany($q);

for my $department ( @$departments ) {
    $info->{drDId} = $department->{dcDId};
    $info->{drRId} = $rId;
    $mkbDb->Insert( 'DepartmentResources', $info );
    undef $info;
}
if ( $web->{aAuthor} || $web->{aPublisher} || $web->{aCity} ) {
    my $info;
    $info->{aRId} = $rId;
    $web->{aAuthor} and $info->{aAuthor} = $web->{aAuthor};
    $web->{aPublisher} and $info->{aPublisher} = $web->{aPublisher};
    $web->{aCity} and $info->{aCity} = $web->{aCity};
    $mkbDb->Insert( 'Articles', $info );
}
if ( $web->{uURI} ) {
    my $info;
    $info->{uRId} = $rId;
    $info->{uURI} = $web->{uURI};
    $info->{uType} = $web->{input};
    if ( $web->{input} eq 'link' ) { # AddResource
        $info->{uURI} = $web->{uURI};
    } elsif ( $web->{input} eq 'file' ) { # AddFile
        my $uploadDir = 'uploads';
        my $ext =
            $web->{uURI}
            {filename}; # TODO Filter out dangerous characters.

        # $ext =~ s|(.*)\.(.+)|$2|;
        my $outFilename = $rId . '-' . $ext;
        my $UPLDFILE;
        open $UPLDFILE, '>', "$uploadDir/$outFilename";
        binmode $UPLDFILE;
        print $UPLDFILE $web->{uURI}{content};
        close $UPLDFILE;
        $info->{uURI} = $web->{uURI}{filename};
    }
    $mkbDb->Insert( 'URIs', $info );
}
if ( $web->{pProtection} != -1 ) {
    my $info;
    $info->{pRId} = $rId;
    $web->{pProtection} and $info->{pProtection} = $web->{pProtection};
    $mkbDb->Insert( 'Protections', $info );
}
}

sub addExResource {
    my $info;
    $info->{crCId} = $web->{cId};
    $info->{crRId} = $web->{rId};
    $web->{crParent} and $info->{crParent} = $web->{crParent};
    $info->{crPriority} = $web->{rId};
    $mkbDb->Insert( 'CourseResources', $info );
    undef $info;
    my $q = qq|select 1 as urIn
               from UserResources
               where urUsId = $web->{usId} and urRId = $web->{rId}|;
    my $urIn = eval { $mkbDb->SelectOneRec($q)->{urIn} };

    unless ($urIn) {
        $info->{urUsId} = $web->{usId};
        $info->{urRId} = $web->{rId};
        $mkbDb->Insert( 'UserResources', $info );
    }
    delete $web->{crParent};
}

sub delResource {

```

```

    $mkbDb->Delete( 'CourseResources',
        "crCid = $web->{cId} and crRid = $web->{rId}" ); # TODO MySQL trigger.
}

sub delResources {
    $mkbDb->Delete( 'CourseResources',
        "crCid = $web->{cId} and crRid in ($web->{fromRids})" );

    # TODO MySQL trigger.
    &genResourcesView;
    $webUtil->printTemplate( $templateDir, 'resources.t.html', $web );
}

sub edResource {
    my $info;
    my $langs = &getLangs;
    for my $lang (@$langs) {
        for my $lang (@$langs) {
            if ( $web->{ 'rTitle_' . $lang->{laLang} } ) {
                $info->{rTitle} = $web->{ 'rTitle_' . $lang->{laLang} };
                $info->{rDescription} =
                    $web->{"rDescription_$lang->{laLang}"}
                    ? $web->{"rDescription_$lang->{laLang}"}
                    : 'NULL';
                $info->{rInfo} =
                    $web->{"rInfo_$lang->{laLang}"}
                    ? $web->{"rInfo_$lang->{laLang}"}
                    : 'NULL';
                my $q = qq|select 1 as hasResource
                    from Resources
                    where rId = $web->{rId} and rLaId = $lang->{laId}|;
                my $hasResource = eval { $mkbDb->SelectOneRec($q)->{hasResource} };
                if ($hasResource) {
                    $mkbDb->Update( 'Resources', $info,
                        "rId = $web->{rId} and rLaId = $lang->{laId}" );
                } else {
                    $info->{rLaId} = $lang->{laId};
                    $info->{rId} = $web->{rId};
                    $mkbDb->Insert( 'Resources', $info );
                }
            } else {
                $mkbDb->Delete( 'Resources',
                    "rId = $web->{rId} and rLaId = $lang->{laId}" );
            }
        }
    }
    undef $info;
}

if ( $web->{aAuthor} || $web->{aPublisher} || $web->{aCity} ) {
    my $info;
    $info->{aAuthor} = $web->{aAuthor} ? $web->{aAuthor} : 'NULL';
    $info->{aPublisher} =
        $web->{aPublisher} ? $web->{aPublisher} : 'NULL';
    $info->{aCity} = $web->{aCity} ? $web->{aCity} : 'NULL';
    my $q = qq|select 1 as hasArticle
        from Articles
        where aRid = $web->{rId}|;
    my $hasArticle = eval { $mkbDb->SelectOneRec($q)->{hasArticle} };
    if ($hasArticle) {
        $mkbDb->Update( 'Articles', $info, "aRid = $web->{rId}" );
    } else {
        $info->{aRid} = $web->{rId};
        $mkbDb->Insert( 'Articles', $info );
    }
} else {
    $mkbDb->Delete( 'Articles', "aRid = $web->{rId}" );
}

if ( $web->{uURI} ) {
    my $info;
    $info->{uURI} = $web->{uURI};
    my $q = qq|select 1 as hasURI
        from URIs
        where uRid = $web->{rId}|;
    my $hasURI = eval { $mkbDb->SelectOneRec($q)->{hasURI} };
    if ($hasURI) {
        $mkbDb->Update( 'URIs', $info, "uRid = $web->{rId}" );
    } else {
        $info->{uRid} = $web->{rId};
        $info->{uType} = 'link';
        $mkbDb->Insert( 'URIs', $info );
    }
} else {
    $mkbDb->Delete( 'URIs', "uRid = $web->{rId}" );
}
}

```

```

if ( $web->{pProtection} != -1 ) {
    my $info;
    $info->{pRId} = $web->{rId};
    $info->{pProtection} = $web->{pProtection};
    my $q = qq|select 1 as hasProtection
              from Protections
              where pRId = $web->{rId}|;
    my $hasProtection =
        eval { $mkbDb->SelectOneRec($q)->{hasProtection} };
    if ($hasProtection) {
        $mkbDb->Update( 'Protections', $info, "pRId = $web->{rId}" );
    } else {
        $info->{pRId} = $web->{rId};
        $mkbDb->Insert( 'Protections', $info );
    }
} else {
    $mkbDb->Delete( 'Protections', "pRId = $web->{rId}" );
}
}

sub getLangs {
    my $q = qq|select laId, laLang
              from Langs
              order by laId asc|;
    my $langs = $mkbDb->SelectMany($q);
    return $langs;
}

sub up {
    upDown( '<', 'desc' );
}

sub down {
    upDown( '>', 'asc' );
}

sub upDown {
    my ( $ltGt, $descAsc ) = @_;
    my $q = qq|select crPriority, crParent
              from CourseResources
              where crCId = $web->{cId} and crRId = $web->{rId}|;
    my $resource = $mkbDb->SelectOneRec($q);
    $resource->{crParent} or $resource->{crParent} = 'NULL';
    $q = qq|select crRId, crPriority
              from CourseResources
              where crCId = $web->{cId} and crParent <=> $resource->{crParent}
              and crPriority $ltGt $resource->{crPriority}
              order by crPriority $descAsc|;
    my $resourceTarget = $mkbDb->SelectOneRec($q);
    my $info;
    $info->{crPriority} = $resource->{crPriority};
    $mkbDb->Update(
        'CourseResources', $info, "crCId = $web->{cId}
        and crRId = $resourceTarget->{crRId}"
    );
    undef $info;
    $info->{crPriority} = $resourceTarget->{crPriority};
    $mkbDb->Update(
        'CourseResources', $info, "crCId = $web->{cId}
        and crRId = $web->{rId}"
    );
    &genResourcesView;
    $webUtil->printTemplate( $templateDir, 'resources.t.html', $web );
}

sub left {
    leftRight( '<', 'desc' );
}

sub right {
    leftRight( '>', 'asc' );
}

sub leftRight {
    # Reparenting
    my ( $ltGt, $descAsc ) = @_;
    my $q = qq|select crParent, crPriority
              from CourseResources
              where crCId = $web->{cId} and crRId in (select crParent
              from CourseResources
              where crCId = $web->{cId} and crRId = $web->{rId})
              limit 1|;

```

```

my $resource = $mkbdb->SelectOneRec($q);
$resource->{crParent} or $resource->{crParent} = 'NULL';
$q = qq|select crRid
      from CourseResources
      where crCid = $web->{cId} and crParent <=> $resource->{crParent}
      and crPriority $!tGt $resource->{crPriority}
      order by crPriority $descAsc
      limit 1|;
my $resourceTarget = $mkbdb->SelectOneRec($q);
my $info;
$info->{crParent} = $resourceTarget->{crRid};
$mkbdb->Update( 'CourseResources', $info,
              "crCid = $web->{cId} and crRid = $web->{rId}" );
$genResourcesView;
$webUtil->printTemplate( $templateDir, 'resources.t.html', $web );
}

sub move {
# Reparenting
my $info;
$info->{crParent} = $web->{toRid};

# TODO Check that toRid not in fromRids.
$mkbdb->Update( 'CourseResources', $info,
              "crCid = $web->{cId} and crRid in ($web->{fromRids})" );
$genResourcesView;
$webUtil->printTemplate( $templateDir, 'resources.t.html', $web );
}

sub genResourcesView {
my @langs1 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
$web->{langs1} = \@langs1;
my @langs2 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
$web->{langs2} = \@langs2;
my @langs3 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
$web->{langs3} = \@langs3;
my @langs4 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
$web->{langs4} = \@langs4;
my $q = qq|select cId,
      replace(
        substring_index(group_concat(rTitle order by elt(rLaId,$!aPrios) asc separator '#'), '#', 1),
        '&', '&'); as cName,
        lFirstname, lLastname, lEmail
      from ((Courses inner join CourseResources on cId = crCid)
           inner join Resources on crRid = rId)
           left join Librarians on cUsId = lUsId
           where crParent is NULL and cId = $web->{cId}
           group by rId|;
my $a = $mkbdb->SelectOneRec($q);

if ( !defined $a ) {
fatal('Course not online. ');
}
copyValues( $a, $web );
$q = qq|select rId as rIdShortcut,
      group_concat(laLang order by elt(rLaId,$!aPrios) asc separator ',') as laLang,
      substring_index(group_concat(rTitle order by elt(rLaId,$!aPrios) asc separator '#'), '#', 1)
      as rTitle, pProtection
      from ((Resources inner join Langs on rLaId = laId)
           inner join CourseResources on rId = crRid)
           left join Protections on rId = pRid
           where crParent is not NULL and rId not in (select crRid
           from CourseResources where crCid = $web->{cId})
           group by rId
           order by crPriority asc|;
my $shortcuts = $mkbdb->SelectMany($q);
$web->{'shortcuts'} = $shortcuts;
$q = qq|$qtop
      where crParent = $web->{cId} and crCid = $web->{cId}
      group by rId
      order by crPriority asc|;
my $his = $mkbdb->SelectMany($q);
$_resourcesIndex = 0;
$web->{his} = genResources( $his, 1, 1, 1 );
$web->{_} = '_';
}

sub genResources {
my ( $his, $level, $hasFirstParent, $hasLastParent ) = @_;
if ( defined $maxLevel && $level >= $maxLevel ) {
return $his;
}
my $i = 0;

```

```

for my $h1 (@$h1s) {
    ++$i;
    my @langs1 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
    $h1->{langs1} = \@langs1;
    my @langs2 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
    $h1->{langs2} = \@langs2;
    my @langs3 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
    $h1->{langs3} = \@langs3;
    my @langs4 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
    $h1->{langs4} = \@langs4;
    my @langs5 = @{$web->{langs}}; # TODO Remove if webUtil is fixed.
    $h1->{langs5} = \@langs5;
    my $q = qq|select laId, laLang, rTitle, rDescription, rInfo
    from Langs left join (select rLaId, rTitle, rDescription, rInfo
    from Resources
    where rId = $h1->{rId}) as Resources
    on laId = rLaId
    order by laId asc|;
    $h1->{langsEdit} = $mkbDb->SelectMany($q);
    my @langsEdit2 =
        @{$h1->{langsEdit}}; # TODO Remove if webUtil is fixed.
    $h1->{langsEdit2} = \@langsEdit2;
    my @langsEdit3 =
        @{$h1->{langsEdit}}; # TODO Remove if webUtil is fixed.
    $h1->{langsEdit3} = \@langsEdit3;
    my @shortcuts =
        @{$web->{'shortcuts'}}; # TODO Remove if webUtil is fixed.
    $h1->{shortcuts} = \@shortcuts;
    $h1->{level} = $level;
    $h1->{isFirst} = ( $i == 1 );
    $h1->{isLast} = ( $i == scalar @$h1s );
    $h1->{hasFirstParent} = $hasFirstParent;
    $h1->{hasLastParent} = $hasLastParent;
    $h1->{resourcesIndex} = ++$resourcesIndex;
    push @{$web->{resources}}, $h1;
    $q = qq|qtop
    where crParent = $h1->{rId}
    group by rId
    order by crPriority asc|;
    my $h2s = $mkbDb->SelectMany($q);

    if (@$h2s) {
        genResources( $h2s, $level + 1, $h1->{isFirst}, $h1->{isLast} );
        $h1->{'h' . ( $level + 1 ) . 's'} = $h2s;
        $h1->{'h' . $level . 'sIndex'} = $i;
        $web->{"rId$h1->{rId}s"} = $h2s;
    }
    push @{$web->{resources}}, { 'end' => 1 };
    return $h1s;
}

sub download {
    MKBCommon::download( $mkbDb, $web, 'uploads' );
}

sub redirect {
    my $q = qq|select uURI
    from URIs
    where uRId = $web->{uRId}|;
    my $URI = $mkbDb->SelectOneRec($q->{uURI});
    $webUtil->redirect($URI); # Needs bug fixed method
}

sub query {
    if ( $web->{database} eq 'MKB' ) {
        &queryMKB;
    } elsif ( $web->{database} eq 'OldMKB' ) {
        &queryOldMKB;
    } elsif ( $web->{database} eq 'LADok' ) {
        &queryLADok;
    }
    $webUtil->printTemplate( $templateDir, 'query.t.html', $web );
}

sub queryMKB {
    my $dbh = $mkbDb->{dbh};
    if ( $web->{query} ) {
        answer($dbh);
    }
}

sub queryOldMKB {

```



```

my $fromDatabase = 'mkb_lub';
my $fromDb =
    database->new( $fromDatabase, $cfg->{dbHost}, $cfg->{dbUser},
        $cfg->{dbPasswd} );
my $dbh = $fromDb->{dbh};
if ( $web->{query} ) {
    answer( $dbh, 'iso-8859-1' );
}
$fromDb->Disconnect;
}

sub queryLADok {
    my $dbh =
        DBI->connect( "dbi:Mimer:$cfg->{LADokDb}", $cfg->{LADokUser},
            $cfg->{LADokPassword} )
        or fatal( 'Unable to connect to LADOK database. Please try again later' );

    # "SELECT 1 FROM lu.ffgkurs WHERE kurs='$code' AND (termin = '$termin' OR (termin <
    # '$termin' AND omgang > '1')) AND pnr = '$pnr'"
    # SELECT * FROM lu.ffgkurs WHERE pnr = 'YYMMDDNNNN' order by termin
    if ( $web->{query} ) {
        answer( $dbh, 'iso-8859-1' );
    }
    $dbh->disconnect;
}

sub answer {
    my ( $dbh, $encodeFrom ) = @_;
    my $sth = $dbh->prepare( $web->{query} );
    my $result = $sth->execute;
    my @rows = ();
    my @headings = ();
    while ( my $fields = $sth->fetchrow_hashref ) {
        my @fields = ();
        if ( !@headings ) {
            for my $heading ( keys %$fields ) {
                Encode::from_to( $heading, $encodeFrom, 'utf8' )
                    if $encodeFrom;
                push @headings, { heading => $heading };
            }
        }
        for my $field ( values %$fields ) {
            Encode::from_to( $field, $encodeFrom, 'utf8' ) if $encodeFrom;
            push @fields, { field => $field };
        }
        push @rows, { fields => \@fields };
    }
    $web->{headings} = \@headings;
    $web->{rows} = \@rows;
}

__END__

```

5.3 MKBCommon.pm

In this Perl module of about 200 lines there are some common functions that are used by both the student and the administrator Perl scripts.

```

# Author: Mikael O. Bonnier

package MKBCommon;

no warnings 'utf8';
use strict;
use File::stat;    # part of Perl
use lib './lib';
use webUtil;      # from Lund University Libraries, Head Office
use cookies;      # from Lund University Libraries, Head Office
use database;     # from Lund University Libraries, Head Office

sub makeLaPrioList {
    my ( $mkbDb, $web ) = @_;
    my $q = q|select laId, laLang
        from Langs
        order by laId|;
    my $langs = $mkbDb->SelectMany($q);
}

```

```

my @laPrios;
my $i = 0;
my $j = 2;
for my $lang (@$langs) {
    if ( $web->{lang} eq $lang->{laLang} ) {
        $laPrios[$i] = 1;
    } else {
        $laPrios[$i] = $j;
        ++$j;
    }
    ++$i;
}

# Index is language, and value is priority of language.
return q'|' . join( q'|', '|', @laPrios ) . q'|';
}

sub login {
    my ( $mkDb, $web, $cookies, $sIdCookie ) = @_;
    my $LDAPServer = $web->{LDAPServer}; # TODO Use MKBCfg?
    my $LDAPBaseDN = $web->{LDAPBaseDN};
    my $LDAPServer2 = $web->{LDAPServer2};
    my $LDAPUIAttr = $web->{LDAPUIAttr};
    my $cookieDomain = $web->{cookieDomain};
    my $ldap = Net::LDAP->new($LDAPServer) or fatal(!);
    my $msg = $ldap->bind( "$LDAPUIAttr=$web->{username},$LDAPBaseDN",
        password => $web->{password} );

    if ( $msg->code ) {
        $ldap->unbind;
        $ldap = Net::LDAP->new($LDAPServer2) or fatal(!);
        $msg = $ldap->bind( "$LDAPUIAttr=$web->{username},$LDAPBaseDN",
            password => $web->{password} );
    }
    if ( !$msg->code ) {
        $msg = $ldap->search(
            base => $LDAPBaseDN,
            filter => "(&($LDAPUIAttr=$web->{username}))",
            attrs => [ 'displayName', 'mail' ]
        );
    }
    $web->{errorMessages} = $msg->error if $msg->code;

    my $displayName;
    my $mail;
    if ( !$msg->code ) {
        for my $entry ( $msg->all_entries ) {
            $displayName = $entry->get_value('displayName');
            $mail = $entry->get_value('mail');
            # $entry->dump;
            last;
        }
    }
    $msg = $ldap->unbind;
    if ( !$displayName ) {
        my $q = qq|select lPassword, lFirstname, lLastname, lEmail
            from Users, Librarians
            where usId = lUsId and usUsername = '$web->{username}'|;
        my $a = eval { $mkDb->SelectOneRec($q) };
        my $lPassword = eval { $a->{lPassword} };
        if ( $lPassword and $lPassword eq $web->{password} ) {
            $displayName = $a->{lFirstname} . ' ' . $a->{lLastname};
            $mail = $a->{lEmail};
            delete $web->{errorMessages};
        }
    }
    if ($displayName) {
        $web->{displayName} = $displayName;
        $web->{mail} = $mail;
        $web->{username} = ~ tr/[A-Z]/[a-z]/;
        my $info;
        $info->{sIp} = $ENV{REMOTE_ADDR};
        my $q = qq|select usId
            from Users
            where usUsername = '$web->{username}'|;
        my $usId = eval { $mkDb->SelectOneRec($q)->{usId} };

        if ( !$usId ) {
            my $info;
            $info->{usUsername} = $web->{username};
            $mkDb->Insert( 'Users', $info );
            $usId =
                $mkDb->{dbh}->last_insert_id( undef, undef, undef, undef );

```

```

    }
    $info->{sUsId} = $sUsId;
    $mkbDb->Insert( 'Sessions', $info );
    my $sId = $mkbDb->{dbh}->last_insert_id( undef, undef, undef, undef );
    $web->{cookies} =
        $cookies->set_cookie( $sIdCookie, $sId, 120, '/', $cookieDomain );
    $web->{$sIdCookie} = $sId;
}
}

sub checkUserRegOnCourse {
    my ( $cfg, $sUsername, $cCode ) = @_;
    my $pnr = getPnr( $cfg, $sUsername );
    if ( $pnr ) {
        return checkRegInLADok( $cfg, $pnr, $cCode );
    } else {
        return 0;
    }
}

sub getPnr {
    my ( $cfg, $suid ) = @_;

    my $LDAPServer = $cfg->{LDAPServer};
    my $LDAPBaseDN = $cfg->{LDAPBaseDN};
    my $LDAPServer2 = $cfg->{LDAPServer2};
    my $LDAPUIAttr = $cfg->{LDAPUIAttr};
    my $LDAPBind = $cfg->{LDAPBind};
    my $LDAPPass = $cfg->{LDAPPass};
    my $LDAPPnr = $cfg->{LDAPPnr};

    my $ldap = Net::LDAP->new( $LDAPServer ) || fatal($!);

    $ldap->bind( $LDAPBind, password => $LDAPPass );
    my $mesg = $ldap->search(
        base => $LDAPBaseDN,
        scope => 'sub',
        filter => "$LDAPUIAttr=$suid"
    );

    $mesg->code && fatal( $mesg->error );
    my @entries = $mesg->entries;

    my $pnr;
    for my $entry ( @entries ) {
        last if $pnr = $entry->get_value( $LDAPPnr );
    }

    return $pnr;
}

sub checkRegInLADok # LADok = Lokalt Adb-baserat Dokumentationssystem
{
    my ( $cfg, $pnr, $cCode ) = @_;
    my $database = $cfg->{LADokDb};
    my $sUsername = $cfg->{LADokUser};
    my $sPassword = $cfg->{LADokPass};

    my $dbh = DBI->connect( "dbi:Mimer:$database", $sUsername, $sPassword )
        || fatal(
            'Unable to connect to LADOK database to verify course registration. Please try again later'
        );

    # "SELECT 1 FROM $cfg->{univPrefix}.ffgkurs WHERE kurs='$cCode' AND (termin = '$termin' OR (termin <
    # '$termin' AND omgang > '1')) AND pnr = '$pnr'"

    my $q = "SELECT omgang FROM $cfg->{univPrefix}.ffgkurs WHERE kurs='$cCode' AND pnr='$pnr'"
        ; # TODO Encode $cCode.

    my $sth = $dbh->prepare($q);
    $sth->execute;
    my $result = eval { $sth->fetchrow_hashref->{OMGANG} };
    undef $sth;
    $dbh->disconnect;
    return $result && $result > '0' ? 1 : 0;
}

sub download {
    my ( $mkbDb, $web, $uploadDir ) = @_;
    my $UPLDDIR;
    opendir $UPLDDIR, $uploadDir;
    my @files = grep /~$web->{uRid}-/, readdir $UPLDDIR;
    closedir $UPLDDIR;
}

```

```

my $inFilename = shift @files;
my $q          = qq|select uURI
                from URIs
                where uRid = $web->{uRid}|;
my $saveFilename = $mkbDb->SelectOneRec($q)->{uURI};
my $DNLDFILE;
open $DNLDFILE, '<', "$uploadDir/$inFilename";
binmode $DNLDFILE;
my $st = stat $DNLDFILE;
my $content;
read $DNLDFILE, $content, $st->size;
$web->{cookies} && print $web->{cookies}, "\n";
print "Content-Type: application/octet-stream\n";
print "Content-Disposition: attachment; filename=$saveFilename\n";
print "Content-Length: $st->size\n\n";
print $content;
close $DNLDFILE;
}

# The following three functions are based on another script
# written by Salam Baker Shanawa at Lund University Libraries, Head Office.
# He also designed the webUtil framework which most systems here have used
# since many years. These functions are necessary for the webUtil framework.
sub checkFunc {
    my ( $webUtil, $templateDir, $func ) = @_;
    my $checkString = 'main::' . $func;
    defined &{$checkString}
        || fatal( $webUtil, $templateDir, "No such function $func." );
    1;
}

sub fatal {
    my ( $webUtil, $templateDir, $error ) = @_;
    my $web = $webUtil->getWeb;
    $web->{error} = $error;
    $webUtil->printTemplate( $templateDir, 'error.t.html', $web );
    exit;
}

sub copyValues {
    my ( $source, $target ) = @_; # Note that the order is different from strcpy in C/C++.
    for my $k ( keys %{$source} ) {
        $target->{$k} = $source->{$k};
    }
}

1;

```

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