README

This readme describes the scisonline automation software deployment, input files formats, semester initialization, semester registration, supplementary registration, and improvement registration.

The software has four different kinds of users: admin, staff, faculty and Student

The source code of the software is available at https://github.com/smarahara92/scisonline.

Load the source code in your favorite Java IDE and build the software to use.

SOFTWARE SETUP

To deploy the software, we need to install and configure the following servers:

1. LDAP server
2. MySQL server
3. Apache Tomcat server

LDAP SERVER CONFIGURATION

This software authenticates its users using LDAP server. It distinguishes different kinds of users using their group IDs in the LDAP accounts. By default all students have group id **503** or **504**, all faculty has the group id **506**, admin and staff users have the group id **507**. We can find this group information in "**auth.jsp**" from the line number 299 to 310.

To configure LDAP server, configure LDAP server name or IP address, TCP port number, base distinguished name for the user accounts, and LDAP server password. The configuration is held in "**conf.jsp**" file. The file contains the highlighted lines as shown below:

String server = "ldap.useraccount.com";   //LDAP server name or IP address

int port = 389;   //The TCP port number on which the server is running

String basedn = "ou=people,dc=xxxx,dc=xxxx,……";   // The base distinguished name for LDAP users account

String ldappasswd="XXXXXXXXXXX";   //LDAP server password

MYSQL SERVER SETUP

The software is using three relational databases for maintaining the department information:

1. dcis_assessment -> maintains data about assessments for all programs
2. dcis_attendance_system -> maintains data about attendance for all programs, maintain curriculum, stores faculty information
3. PhD -> maintains PhD related data

To install MySQL server in Ubuntu system, follow the below link and configure the server according to your requirements

https://help.ubuntu.com/12.04/serverguide/mysql.html

Now, we need to change the MySQL server user account credentials in the source code. We need not change the MySQL server address in the source code because, as per source code the MySQL server and Apache Tomcat server must install on the same host.

To get the list of files and line number where we need to change the credentials, run the following command

grep -rn 'DriverManager\.getConnection' "source code directory path."

After installing the MySQL server, create three databases in the server by running the following queries

- ✓ **create database dcis_assessment;**
- ✓ **create database dcis_attendance_system;**
- ✓ **create database PhD**

If we need to change the database names, we need to modify the database names in the source code of some files. To get the list of files and line number where we need to change the database names, run the following command

grep -rn 'dcis_attendance_system' "source code directory path"

grep -rn 'dcis_assessment' "source code directory path"

APACHE TOMCAT SERVER INSTALLATION

Download the apache tomcat server from the link http://tomcat.apache.org/download-90.cgi and extract the software into a directory.

After successful installation of the Tomcat server load the scisonline software source code into your favorite Java IDE and build the code. This will generate a **"scisonline.war"** file. Move the **"scisonline.war"** into the "webapps" directory which is present in the apache tomcat server installation path.

CURRICULUM FILE FORMAT

To upload the curriculum for a particular course, follow a specific format as shown below:

Minimum number of semester,

X,

Semester(varchar),Cores(int),Labs(int),Electives(int),Projects(boolean),OptionalCore(int),

Semester number in roman numbers,X,X,X,0 or 1,X,

Semester(varchar),SubCode(varchar),SubName(varchar),Credits(int),Type(varchar),Alias(varchar),

Semester number in roman number, subject code, subject name, X, C or L or P, Alias subject code(unique),

'X' is the decimal integer

'C' refers to Core subject
'L' refers to Lab
'P' refers to Project
Warning: Every line must have ended with comma and the file must not have empty lines or spaces

NEW BATCH STUDENT FILE FORMAT

Below is the format of the file to be used to upload new batch information to the scisonline automation software:

Student ID, Student Name,

Note: Every line must have ended with comma and the file must not have empty lines or spaces

ADD NEW PROGRAM

When the school introduced a new program in the university, we need to add the new program in the software so that the software can maintain the data for the program.

Adding a new program is a two-step process:

1. Create program
   a. Go to "Initialization -> Program management"
   b. Select "Add program" in the left panel
   c. Give a new name in the "Program name" column (eg., MTech-IT)
   d. Give a new code to the program in the "Program code column"
      i. E.g., Take an MTech-IT student ID 14MCMB10. In this id, "**MB**" is the code for the MTech-IT program
   e. Give the existing or a new group name to the program in "Group" column (eg., MTech is the group name for MTech-IT, MTech-CS, and MTech-AI because all these three groups use same grading formula for every subject in their programs)
   f. Select current year in the "Year" column
   g. Browse the curriculum file in the "curriculum" column(The file format as specified in Curriculum file format)
   h. Click on submit button
2. Add grade formulae for the group created for the program
   a. Go to "Initialization -> Grade formulae"
   b. Select the program group from the left panel
   c. Give the minimum marks for each grade in right panel
   d. Click on submit button

UPDATE THE CURRICULUM

When a new curriculum is introduced for the existing programs, we need to update the curriculum for the upcoming batches. The new curriculum is not applicable for currently running batches. To update the curriculum:

1. Go to "Initialization -> Program management"
2. Select "update curriculum"
3. Browse the curriculum CSV file and then click on submit button(The file format as specified in Curriculum file format)

ADD ELECTIVES AND OPTIONAL CORES

1. Go to "Initialization -> subject database"
2. Select "add subject" from the left panel
3. Give a unique subject id for the subject in the "subject id" column
4. Give a unique subject name for the subject in the "subject name" column
5. Select type of subject in the "subject type" column
6. Give the number credits for the subject in "credits" column
7. Click on the submit button

ADD FACULTY

1. Go to "Initialization -> faculty database"
2. Select "add faculty" in the left panel
3. Give a unique id (e.g., email-id of the faculty) for the new faculty in the "Faculty UserId" column
4. Give the name of the faculty in the "Faculty name" column
5. Give the organization name (department/school name that he/she belongs to) of the faculty (In some cases faculty from different departments are teaching subjects in our department)

ADD NEW BATCH STUDENTS

1. Go to "Yearly activities -> NewBatch"
2. Choose program, year and click on upload file button
3. In pop-up window browse the student list csv file(file format as specified in New Batch student file format)
4. Click on upload file button

SEMESTER INITIALIZATION

1. Add new batch students (Only for monsoon semester initialization)
2. Add new program (Only if any new program introduced in the department and should do this step in monsoon semester)
3. update the curriculum (the new curriculum applies to respective program from current year batch and this step perform if and only if any changes in the curriculum of a program and should perform in Monsoon semester)
4. Add faculty(Perform this step when new faculty teaching any subject in the department)
5. Add electives and optional cores (Perform this step when a new elective or optional core is introduced in the department)
6. Allocate courses to the faculty
    a. Go to "semester activities -> Course allocation"
    b. Select the session, year and click on "new" button
    c. Select the start date and end date for the semester
    d. Allocate subjects to each faculty for the semester and click the submit button (if the subject is offering as elective then, mark check box in the table cell)
7. Set the stream limits
    a. Go to "semester activities -> Stream limits"
    b. Select the semester and year
    c. Give maximum number of seats allocated for each batch for each subject and click on the submit button

8. Do the course registration for students
   a. Go to "semester activities -> course registration"
   b. Select session and year and click on "register" button
   c. Select the stream in left panel
   d. Select subjects for all students then, click on the submit button