

Technical Documentation of Library Users Management Software

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Introduction

The following is a minimal technical documentation of the web application developed for the Central Library of Amrita University, Ettimadai Campus for the purpose of recording user access of the above mentioned library.

Requirements

The following are the major requirements that were to be fulfilled at the onset of development.

- The existing software in the Library was created in **VisualFox** which had to be installed on every computer where the recording needed to be done. And the Library needed the new software to be network based and installed only on one server system and accessed all over the library.
- The existing software did not have the facility to generate reports of user access. The second major requirement was to be able to generate reports of various kind according to usage.

Major Platforms used

The front end of the Web application is ASP.Net which is used for the designing of the pages.

The backend programming is done in Visual Basic.

The databases are managed using Microsoft SQL server.

The software runs on Microsoft .NET framework 4.5

Major Modules and Objects

1. Default

This is module which consist of the main page (default page). This page will be used to log in in 4 different modules namely, Seniorlib, Assistantlib, Entrance, DigiLib.

2. Entrance

This module is used by the students/staffs to record their entry into the central library. This page also has the provision for the visitors whose details are not in the database. This module can access Entrancescan, Entvisitorscan, Counter, Scanstatus, Scanstatusvis.

3. DigiLib

This module is used by the students/staffs to record their entry into the digital library. This page also has the provision for the visitors whose details are not in the database. This module can access DigiLibscan, digivisitorscan, Counter, Scanstatus1, Scanstatusvis1

4. Seniorlib

This module has the access to all other modules and classes of this software. This module has the ability to access the following modules-useradd, userdelete, usermodify, batchadd, batchdelete, userreport, currentlyinreport, dayreport, customrange, changepass, Counter, photoadd, add, delete.

5. Assistantlib

This module is similar to the previously discussed module, Seniorlib, but has access to reduced modules namely, useradd1, userdelete1, userreport1, currentlyinreport1, dayreport1, customrange1, changepass1, Counter.

6. Scanstatus

This module can access sqlcardcontrol, sqlentdatecontrol, sqltodaycontrol. This module is used to record the time-in and time-out of the person who is entering and exiting the central library.

7. Scanstatus1

This module is very similar to the Scanstatus module except that it will be used for recording the time in and time out of the library users entering and exiting the digital library. This can access the same 3 modules which can be accessed by the Scanstatus module.

8. Scanstatusvis

This module is similar to the previous 2 modules except that this is used to record the time in and out of the library users whose record is not in the database(visitors) who are entering and exiting the central library.

9. Scanstatusvis1

This module is similar to the previous module except that this is used to record the time in and out of the library users whose record is not in the database(visitors) who are entering and exiting the digital library.

10. Useradd

This module can access the sqlcardcontrol module. It is used to add single users to the database. This can be accessed by the Seniorlib module.

11. Useradd1

This module can access the sqlcardcontrol module. It is used to add single users to the database. This can be accessed by the Assistantlib module.

12. Userdelete

This module can access the sqlcardcontrol module. It is used to delete a single user from the database.

13. Usermodify

This module can access the sqlcardcontrol module. It is used to modify a single user from the database.

14. Batchadd

This module can access the sqlcardcontrol module. It is used to add a batch of users to the database. This is done by importing excel file consisting of user details. The reading of details from the excel file is done using oleDb library, which is provided by Microsoft.

15. Batchdelete

This module is used to delete a batch of users from the database. It cannot directly delete records from the database but in turn accesses the deleteview module. And is used to send arguments to the deleteview module about the batch of users to be deleted.

16. Deleteview

This module uses the sqlcommand module provided by sqlclient server to scan for records that match the details in the arguments sent by the batchdelete module and delete them from the database.

17. Userreport

This module uses userreportent and userreportdigi modules to display the library usage report of a particular user. This module is accessed by the Seniorlib module.

18. Userreport1

This module is similar to userreport module and can access userreportent and userreportdigi module. The only difference is that this module can be accessed by the Assistantlib.

19. Userreportent

This module uses the sqlcommand module provided by sqlclient server to scan for records of particular user from the Entrancerecord database whose details are sent to this module and displays them. It uses a specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

20. Userreportdigi

This module uses the sqlcommand module provided by sqlclient server to scan for records of particular user from the DigiLibrecord database whose details are sent to this module and displays them. It uses a specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

21. Currentlyinreport

This module uses inreportent and inreportdigi modules to display the library usage report of users who are currently inside the library. This module is accessed by the Seniorlib module.

22. Currentlyinreport1

This module is similar to currentlyinreport module and can access inreportent and inreportdigi module. The only difference is that this module can be accessed by the Assistantlib.

23. inreportent

This module uses the sqlcommand module provided by sqlclient server to scan for records of users whose timeout is NULL in the Entrancerecord database. It uses a specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

24. inreportdigi

This module uses the sqlcommand module provided by sqlclient server to scan for records of users whose timeout is NULL in the DigiLibrecord database. It uses a

specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

25. dayreport

This module uses `dayreportent` and `dayreportdigi` modules to display the library usage report of users who have used the library for that day. This module is accessed by the `Seniorlib` module.

26. dayreport1

This module is similar to `dayreport` module and can access `dayreportent` and `dayreportdigi` module. The only difference is that this module can be accessed by the `Assistantlib`.

27. dayreportent

This module uses the `sqlcommand` module provided by `sqlclient` server to scan for records of users whose `timein` is that current day from the `Entrancerecord` database. It uses a specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

28. dayreportdigi

This module uses the `sqlcommand` module provided by `sqlclient` server to scan for records of users whose `timein` is that current day from the `DigiLibrecord` database. It uses a specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

29. Customrange

This module uses `customreportent` module to display the library usage report based upon the following 3 search criteria-

- a) Date range
- b) Department/designation (details)
- c) Id

All the search parameters are passed to `customreportent` as arguments.

30. Customrange1

This module is similar to that of `customrange` module except that this module is accessed by the `Assistantlib` module.

31. Customreportent

This module uses the `sqlcommand` module provided by `sqlclient` server to scan for records of users based on the parameters sent by the `customrange` module from the `Entrancerecord` database. It uses a specialized open source library namely, iTextSharp, which is used to export the report in pdf format.

32. Changepass

This module is used to update the password to access the `Seniorlib` module.

33. Changepass1

This module is used to update the password to access the `Assistantlib` module.

34. Counter

This module is used to display the following details

- a) Count of users currently inside the central library
- b) Count pf users currently inside the digital library

- c) Count of users visited the central library for that day
- d) Count of users visited the digital library for that day.

This module is refreshed every 10 seconds to display live count.

Can be accessed by Seniorlib and Assistantlib modules.

35. Add

This module is used to create new accounts that can access the Assistantlib modules. This is done adding new records to the *login* table of the *library database*.

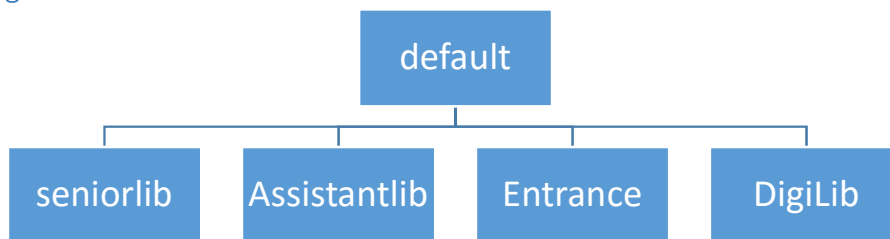
36. Delete

This module is used to delete a particular account which can access the Assistantlib module. This is done by deleting the details of the account in the *login* table of the *library database*.

37. Photoadd

This module is used to link photos to existing library user records. The name of the photos that are to be linked should be the same as the ID of the student/staff to whom the photo should be linked to.

Module Diagrams



Seniorlib

useradd
userdelete
batchadd
batchdetele
userreport
currentlyinreport
dayreport
customrange
changepass
counter
photadd
add
delete

Assistantlib	useradd1
	userreport1
	currentlyinreport1
	dayreport1
	customrange1
	changePASS1
	counter1
entrance	entrancescan
	entrancescanvis
	scanstatus
	scanstatusvis
digilib	digilibscan
	digilibscanvis
	scanstatus1
	scanstatusvis1