

IT632 Software Engineering

202112114 Lab2

Q1 -> Functional Requirements:

❖ New user registration:

Any member of the institute who wishes to avail the facilities of the library has to register himself with the Library Information System. On successful registration, a user ID and password would be provided to the member. He has to use this credential for any future transaction in LIS.

❖ Search book:

Any member of LIS can avail this facility to check whether any particular book is present in the institute's library.

A book could be searched by its:

- Title.
- Author's name.
- Publisher's name.

❖ User login:

A registered user of LIS can login to the system by providing his employee ID and password as set by him while registering. After successful login, "Home" page for the user is shown from where he can access the different functionalities of LIS: search book, issue book, return book, reissue book. Any employee ID not registered with LIS cannot access the "Home" page -- a login failure message would be shown to him, and the login dialog would appear again. This same thing happens when any registered user types in his password wrong. However, if an incorrect password has been provided three times consecutively, the security question for the user (specified while registering) with an input box to answer it is also shown. If the user can answer the security question correctly, a new password would be sent to his email address.

In case the user fails to answer the security question correctly, his LIS account would be blocked. He needs to contact the administrator to make it active again.

❖ **Issue book:**

Any member of LIS can issue a book against his account provided that:

- The book is available in the library i.e., could be found by searching for it in LIS.
- No other member has currently issued the book.
- Current user has not issued the maximum number of books that can.

If the above conditions are met, the book is issued to the member.

Note that this FR would remain **incomplete** if the "maximum number of books that can be issued to a member" is not defined. We assume that this number has been set to four for students and research scholars, and to ten for professors. Once a book has been successfully issued, the user account is updated to reflect the same.

❖ **Return book:**

A book is issued for a finite time, which we assume to be a period of 20 days. That is, a book once issued should be returned within the next 20 days by the corresponding member of LIS. After successful return of a book, the user account is updated to reflect the same.

❖ **Reissue book:**

Any member who has issued a book might find that his requirement is not over by 20 days. In that case, he might choose to reissue the book, and get the permission to keep it for another 20 days. However, a member can reissue any book at most twice, after which he has to return it. Once a book has been successfully reissued, the user account is updated to reflect the information.

Q1 -> Non-Functional Requirements:

❖ Performance Requirements:

- This system should remain accessible 24x7.

❖ Security Requirements:

- This system should be accessible only within the institute LAN.
- The database of LIS should not store any password in plain text -- a hashed value has to be stored.

❖ Design Constraints:

- The LIS has to be developed as a web application, which should work with Firefox 5, Internet Explorer 8, Google Chrome 12, Opera 10.
- The system should be developed using HTML 5.

Q2 -> Functional Requirements:

❖ Receive audio stream:

- The voice interface instance should be able to receive a local audio stream.

❖ Classify audio signal addressee:

- A voice interface instance needs to be able to determine whether or not the stream it's receiving contains linguistic content directed at it.

❖ Map word sequence to action request:

- Given a word sequence a voice interface software agent must attempt to determine what action(s) are being requested of the rover.

Q2 -> Non-Functional Requirements:

- Word recognition error rate on actual rover-directed speech.
- Lag-to-Feedback.
- User Interfaces.