



Project 2: Library Management System for Stanford

Objectives

To manage the library system for Stanford.



Prerequisites



- LMS can be used on any Windows and MacOS run computers.
- Users will need an active internet connection.
- It will be RFID-ready (NCIP 2.0 HTTP server available).
- Auto scheduled tasks like emails and database maintenance.
- Data should be stored in the cloud.
- Highly secure, scalable, and reliable.

Industry Relevance



How this project will make you industry-ready.

- Information curation
- Critical thinking
- Cataloging
- Documentation

Description



Stanford University is a private research university in California. The university was founded in 1885 and as of today, 83 Nobel laureates, 28 Turing Award laureates, and 8 Fields Medalists have been affiliated with Stanford as students, alumni, faculty, or staff.

For the benefit of the students, Stanford started its own library in 1885. The library at Stanford was housed in one large room capable of accommodating 100 readers. As the university grew to enroll more than 20,000+ students in a given year the library grew as well. Today the library boasts of having more than 4 million books in it.

The paper-based maintaining, organizing, and handling of countless books became a nightmare. The university wanted a Library Management Software to automate their library's activities. Using the software one can find books with a click, issue/reissue books quickly, and it will manage all the data efficiently using this system. It also provides immediate and accurate information regarding any type of book, magazine, or research paper, thereby saving a lot of time and efforts.

Description



Problems with the manual library:

- A lot of time is wasted managing the manual library.
- The number of employees needed to manage the library is high.
- Fine calculation is a tedious and time-consuming affair.
- No reports could be generated on books issued due to the manual system.
- It is difficult to manage 4 million books present in the library.
- Students could deposit the books only in the library timings.

Description



Advantages of Library Management System:

- Reduce overheads and increase the productivity of library staff.
- Cost reduction.
- Up-to-date records of all books, research papers, magazines, and other materials available in the library.
- Improve student engagement in the library.
- It will generate dynamic reports for better decision-making.

The client invited Business Analysts trained at Simplilearn to capture the requirements to create this Library Management System.

Note: Library Management System is hereby referred in the case study as LMS

Problem Statement and Motivation



1. The LMS should keep records of different categories of material available in the library like books, magazines, research papers, journals, and newspapers.
2. The books should be classified subject-wise in the software.
3. Each category like books, magazines, research papers, journals, and newspapers will have different issuing periods. For example, a book can be issued for 3 weeks but a magazine only for 1 week. Newspapers cannot be issued for use outside the library and so on.
4. Every reading material available shall have an RFID tag on it. The record of the same will be stored in the database. For each reading material record information like author, book name, publisher name, book edition, date and year of publication, cost of the book, and date of purchase of the book.
5. When a student wants reading material from the library, they will select the material and go to the checkout counter. The library staff will use an RFID reader to capture the details of the book. The student's name is tagged along with the book they borrowed.

Problem Statement and Motivation



6. System will record the issue date and return date of the book.
7. System shall do an automatic calculation of fines in case of delayed return of books.
8. Library staff should be able to search for books on the LMS by search criteria like the name of the book or author.
9. Students should be able to access the library system online to know the return date. They should be able to access it via the web or mobile interface.
10. System shall send automated emails to the students 3 days before the return date to avoid the late return of books.
11. Access to free e-journals and e-books through the software.
12. Anti-theft detection: RFID readers are placed at the exit gate of the library and the RFID reader tracks books to a range of 2 meters and would trigger the alarm with a loud sound in case anyone tried to pass through the gate with an unissued book.

Problem Statement and Motivation



13. Book drop box stations to be installed outside the library: Students can return books at any time in the RFID-enabled book drop box station. A student's loan is immediately canceled once the student deposits the book in the drop box.
14. Management would like the following reports:
 - Which books are most rented?
 - Records of issued and unissued materials in the library (management will decide whether to stock them or not)
 - Amount of fine collected in a day, week, and month.
 - Number of lost books
 - Report on the total number of books, journals, etc.
 - Age of books, that is, which books are more than 20 years old. College generally would prefer not to have very old books since new versions come up every few years.

Task



1. Identifying stakeholders – Create a list of stakeholders (as taught in Business Analysis Planning and Monitoring Knowledge Area)
2. Identify the problem statement in this system
3. Identify advantages of the new Library Management System
4. Create as-is and future process map (using flowcharts). You can use any of the popular tools in the market like Microsoft Visio, Lucid Chart, Creately, Pidoco, or Balsamiq
5. As a Business Analyst working on this project, find out the scope of the Library Management System. To find the scope you can use Use Case diagram (UML) or Context diagram
6. Write down the main features that need to be developed

Task



7. Write the in-scope and out-of-scope items for this software.
8. Draw a data flow diagram for the system.
9. Draw an ER diagram of the system.
10. Write out the Business Requirements, both Functional and Nonfunctional Requirements.
11. Draw wireframes or mock screens for any 2 of the features namely book record creation and any other feature as deemed fit by the student. (Use the technique prototyping or wireframing that is taught in the training). You can use any of the wireframing tools like Microsoft PowerPoint, Microsoft Word, Balsamiq, Sketch, Adobe XD, Adobe Illustrator, Figma, UXPIn, InVision Studio, InVision Freehand, or Moqups

Project Reference

DIGITAL
BUSINESS



To get more ideas refer.

- Task 10 – Section 4, Lesson 5

Submission Process

Minimum 2 projects and 1 test must be completed/passed as a part of certification unlocking criteria



Thank You