

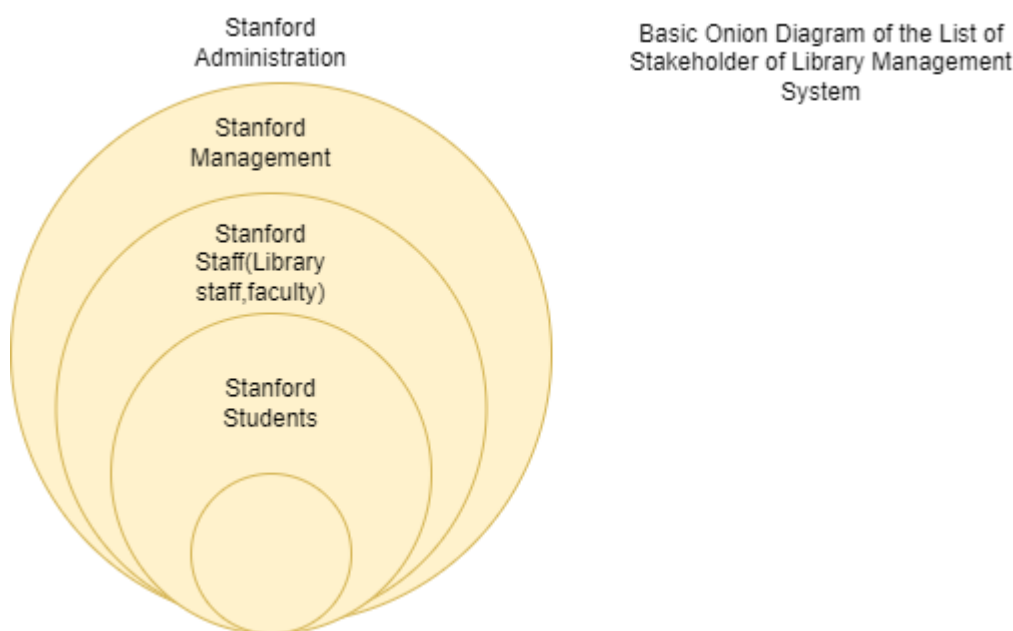
Library Management System for Stanford

Q1) Identifying stakeholders – Create a list of stakeholders (as taught in Business Analysis Planning and Monitoring Knowledge Area)

Ans) The list of the stakeholders are:

- a) Stanford Students: They are using the manual library and will use the automated one in future
- b) Stanford Administration: responsible for the administration of Stanford University
- c) Faculty of Stanford: includes the library staff and the faculty
- d) Stanford Management are the sponsors

This is a basic onion diagram which will display the stakeholder mapping



Q2) Identify the Problem statement in this system

Ans) **Time consuming ,less-efficient and tedious manual library management system** of Stanford

Is the problem statement in this system

The disadvantages of manual library system is as follows:

- a) Management and maintenance of manual library is a time consuming task
- b) The manual library is not having the flexible timings for book deposition
- c) It is not possible to keep 4 million books in the library
- d) There is no facility of report generation in manual library

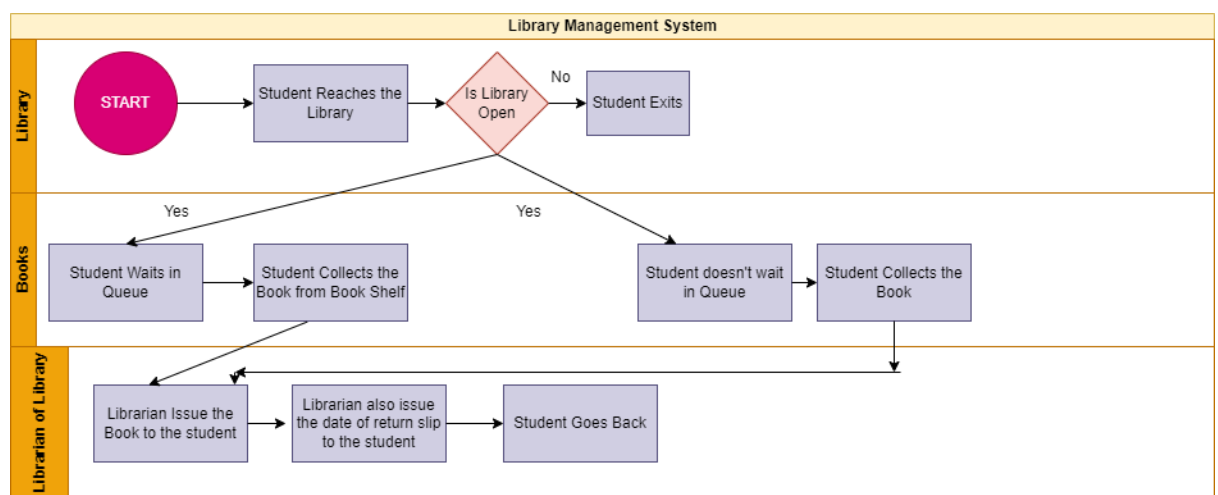
Q3) Identify the advantages of the new library Management System

Ans) The advantages of the new Library Management System are as follows:

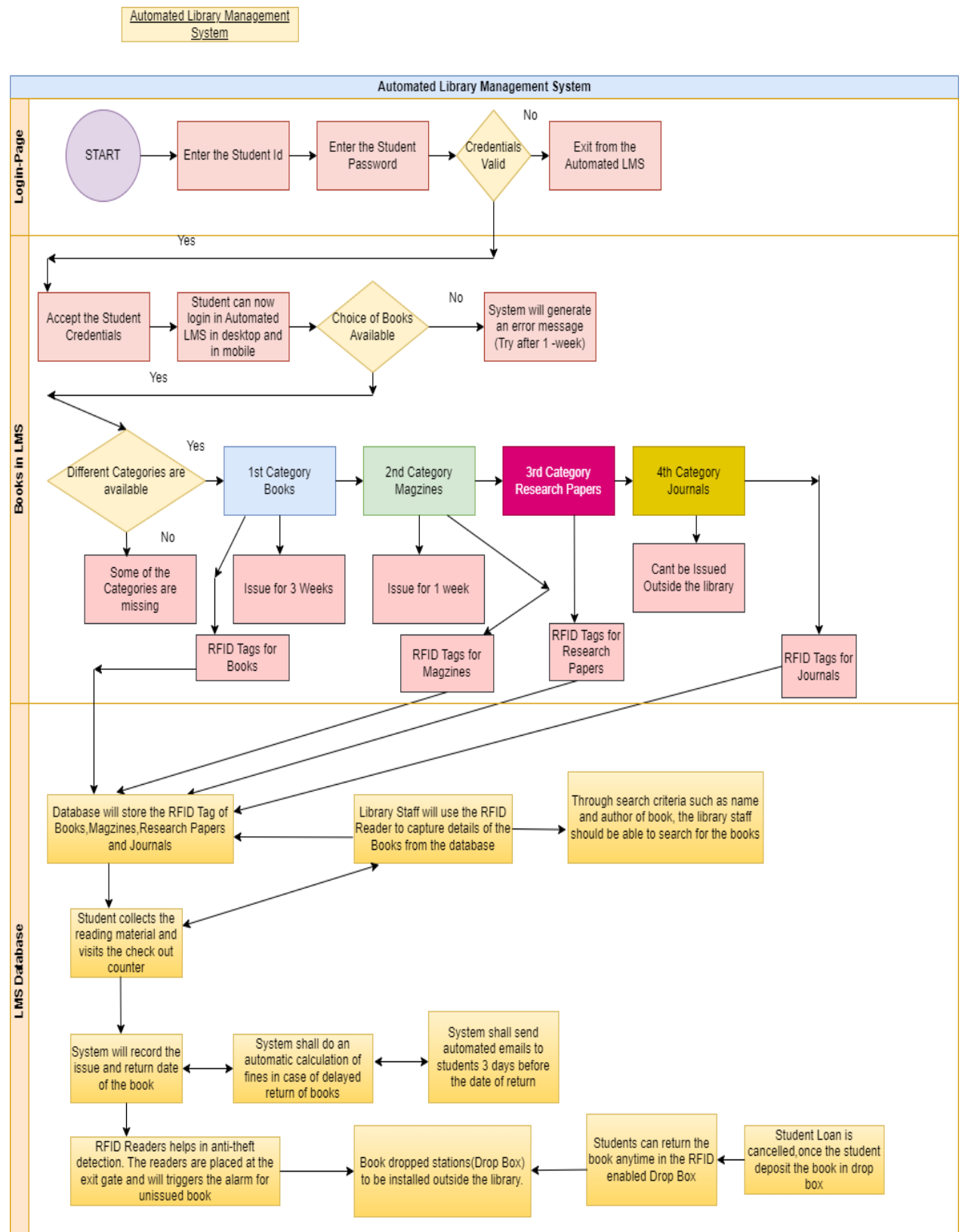
- a) The automated Library Management System or the new Library Management System will reduce the overheads and increase the productivity of library staff
- b) It will help in cost-reduction and dynamic report generation for better decision making
- c) Automated Library Management System will also improve the student engagement
- d) This new system will update book records, research papers, magazines and other materials which are available in manual library management system

Q4) 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

Ans) The Flowchart of manual library system is as follows:



The flowchart of Automated Library Management System is as follows:



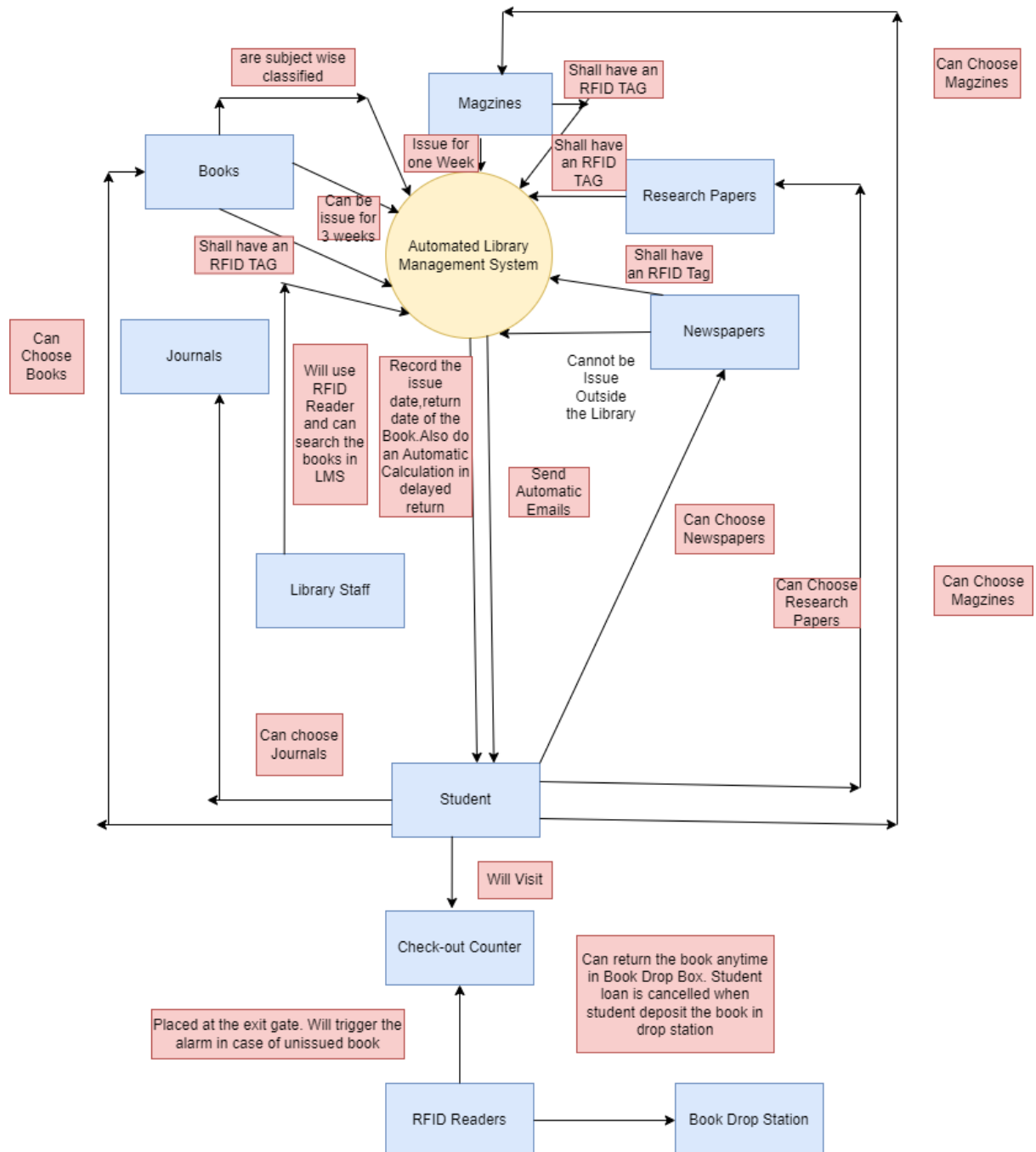
Q5) As a Business Analyst, working on this project, find out the scope of the library Management System. To find out the scope you can use Use case diagram or context diagram

Ans) Scope of the Library Management System

Scope Modelling is one of the Acceptance Criteria of Business Analysis. Scope Modelling is of two types one is In-Scope and the next one is Out-scope. Example of In-Scope in Library Management System are as follows:

- Stanford Library is capable of accommodating 100 readers
- Library is having more than 4 million books
- The Library Timings are fixed, hence the book deposition is done at fixed hours only
- Library staff are required for the fine-calculation and books handover to students
- Records are maintained via papers in manual library system

The context diagram of Library Management System is mentioned below:



Q6) Write down the main features that need to be developed

Ans) The main features that need to be developed are as follows:

- a) The new automated LMS must have different categories of materials available in Library. These categories of materials must be divided in books ,magazines, research papers,journals and newspapers
- b) The system must be keep the record of the issue period of books which is of 3 weeks, magazine for 1 week
- c) The system must have the facility of the assignment of RFID Tag on various materials ie on Books,Magazines,research papers,journals and newspapers
- d) The database of the automated LMS must store the author, book name, publisher name, book edition, date and year of publication, cost of the book and date of the purchase of the book
- e) Their must be a RFID reader in automated LMS which will capture the details of the book. RFID Reader also captures the student's name along with the book they borrowed
- f) There must be some Book Drop Stations which has to be installed outside the library. Book Drop Stations are having the facility of flexible return of books and loan cancellation, once the student deposits the book in drop box

Q7) Write In Scope and out of scope items for this software

Ans) In-Scope requirements of the software are the requirements which lie inside the boundary while out-scope requirements of the software are those requirements which lie outside the boundary

Some of the In-Scope Requirements are listed below:

In-Scope Requirements

- a) Various Categories of Materials such as Books, Magazines, Research-Papers, Journals and NewsPapers must be visible in the automated LMS
- b) The automated LMS must be capable of handling the various classification of Books
- c) Automated Library Management System must have one section which will display the issue period of Books for 3 weeks and magazine for 1 week
- d) The automated LMS must have the facility of assignment of RFID Tags on each and every reading materials ie on Books,Magazines,Research-Papers,Journals and Newspapers
- e) There is one checkout counter for student visit
- f) RFID Reader will be use by Library Staff for capturing the details of the books and the details of the students
- g) Automated Library Management System will record the issue date and the return date of the book. This automated LMS is also capable of doing automatic calculation in case of delayed return
- h) Library Staff should be able to search for the books through search criteria such as name or author of the book

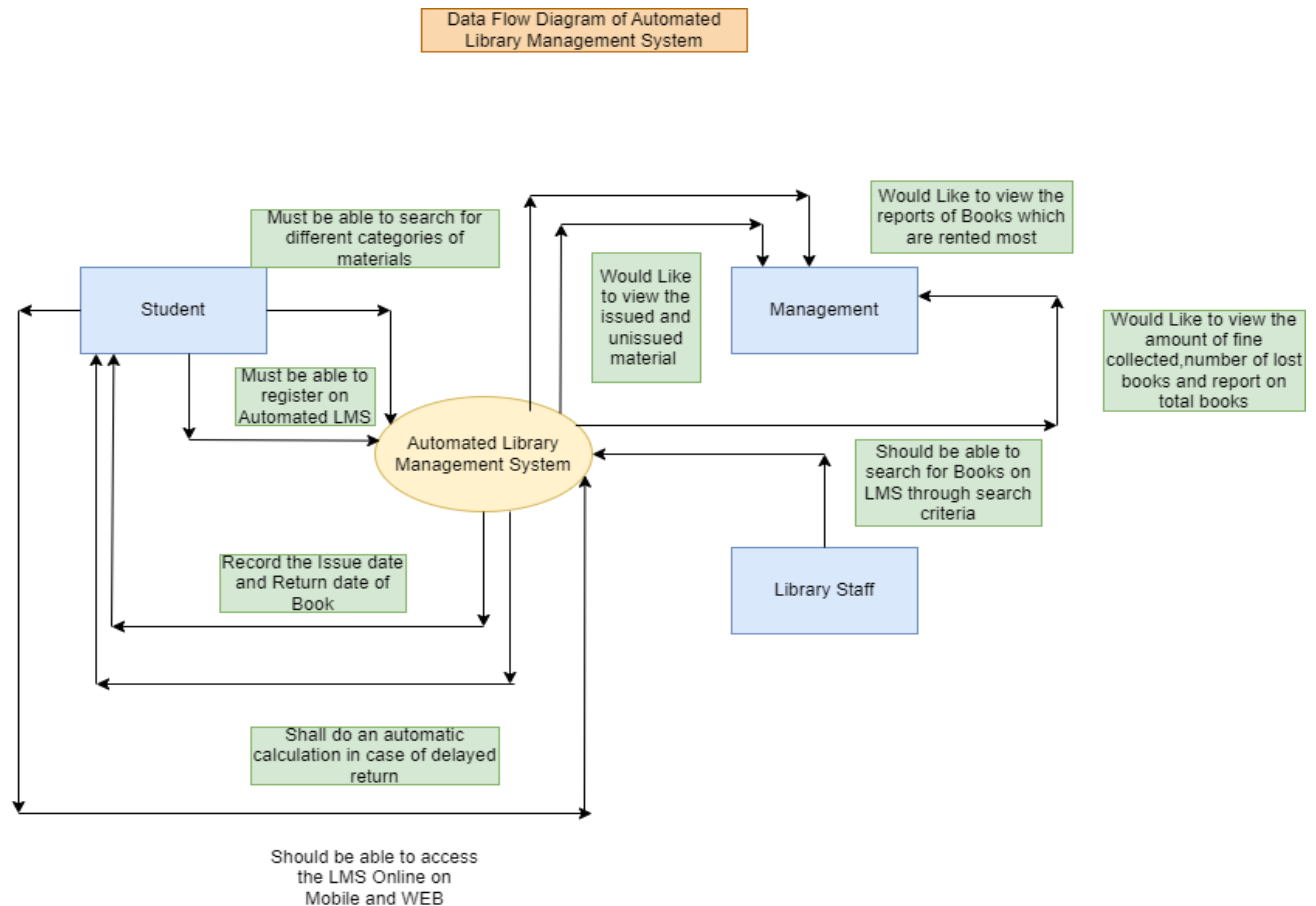
Some of the Out-Scope Requirements are listed below:

Out-Scope Requirements

- a) RFID Generation
- b) Anti-Theft Detection
- c) Installation of Book Drop Station
- d) Collection of Late Return

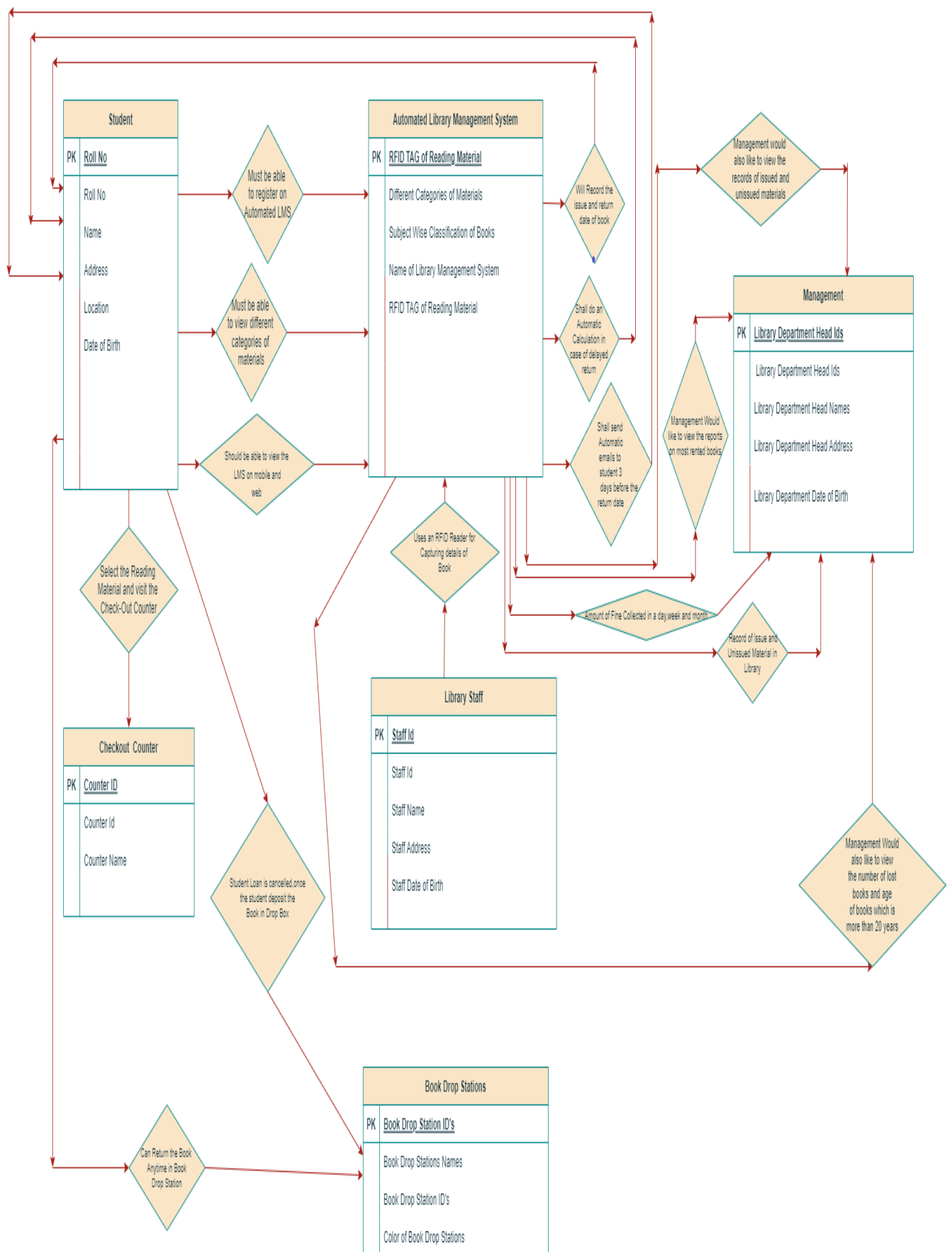
Q8) Draw a Data Flow Diagram for the Same

Ans) The Data Flow Diagram of Automated Library Management System is as follows:



Q9) Draw the ER Diagram of the same

Ans) The ER diagram of the automated Library Management System is as follows:



Q10) Write down the Business Requirements, both functional and non-functional requirements

Ans) **Functional requirements:** are the requirements which must be present in the product. These are the functional requirements that developer must enable to accomplish the task

Some of the Functional requirements of Automated Library Management System are as follows:

- a) The automated Library Management System must contain the Login page. The Login page must have feature of accepting the student's credentials i.e. their student roll no and password
- b) The password of the Automated LMS must be alphanumeric and there should be one submit and reset button
- c) The submit button gives the facility to students to enter their credentials while reset button erases the student roll no and password field
- d) Once the student login to the automated LMS, they should be able to view the different categories of materials
- e) The automated LMS must have one section of subject wise classification of books
- f) The automated LMS must have various categories of materials and these categories are books, magazines, research papers, journals and newspapers for different issue periods
- g) The automated LMS should have one RFID Tag and the same record should be stored in a Database
- h) Database of Library Management System must store the information of the reading material which includes author name, book name, publisher name, book edition, date and year of publication, cost of book and date of purchase of the book
- i) The automated Library Management System must record the issue and return date of the book. It shall also do an automatic calculation of fines in case of delayed return
- j) There must be one search section in Automated Library Management system which enables the Library staff to search for the book through parameters such as author name, book edition, date of purchase of the book and so on
- k) Students should be able to access the Library Management system online through web and mobile interface
- l) There must be one facility of sending automatic emails to students in the system 3 days before the return date to avoid the late return of book
- m) Management should be able to generate the reports in the software

Non-Functional Requirements: are the support features. These are the Quality attributes which define the quality of the system. Some of the Non-functional requirements are as follows:

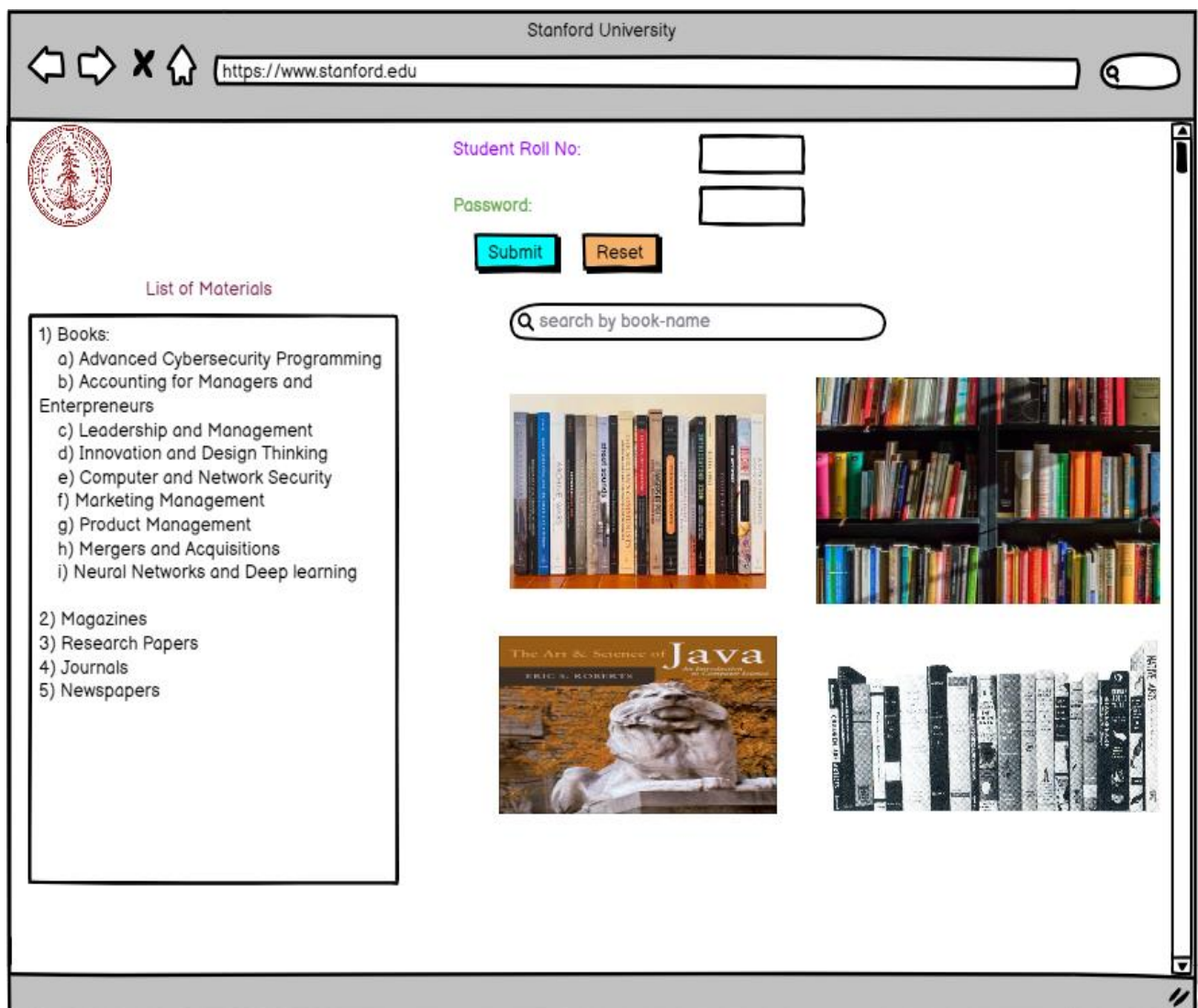
- a) Availability: The automated LMS (software) must be available 24x7
- b) Compatibility: The software should be accessible on both Windows and Mac OS Platforms
- c) Usability: The software is easy to use for Stanford Students
- d) Portability: The automated Library Management System is accessible on desktop and mobile interface
- e) Security: The Library Management System can handle threats, viruses and malicious attacks
- f) Localization: The programming language used for developing the Library Management System is Java and user-interface of LMS is in English
- g) Compliance: Only Stanford students, Stanford faculty and Stanford Alumni can use the

Automated Library Management System. No outsider is eligible for Library Management Software Access

- h) Extensibility: The software can incorporate new features according to Stakeholders requirements
- i) Scalability: The software must be capable of handling 4 million books and 20,000+ registration of students.

Q11) 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 Moqup

Ans) Wireframe of Book Record Creation is as follows:



Wireframe of Reports viewed by the Management is as follows:

Stanford Automated Library Management System	
<div>Profile</div> <div>Report Generation</div> <div>Total Count of Most Rented Books <input type="text" value="7"/></div> <div>Record of Issued and Unissued Materials <input type="text" value="12"/></div> <div>Amount of Fine Collected in Day,Week and Month <input type="text" value="4500"/></div> <div>Number of Lost Books <input type="text" value="10"/></div> <div>Age of Books which are more than 20 years <input type="text" value="2"/></div>	
<div>Open CTRL+O</div> <div>Open Recent ></div> <div>● Option One</div> <div>Option Two</div> <div>✓ Toggle Item</div> <div>Disabled Item</div> <div>Exit CTRL+Q</div>	