



American International University -Bangladesh

University Library Management System

Software Project-1

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19 December, 2018

Declaration

We declare that the submitted project is our original work and has not been submitted in any form for another degree or diploma at any university or other institute of tertiary education. Information derived from the published and unpublished work of others has been acknowledged in the text and a list of references is given.

We declare that this project does not contain any content that discloses the secret of any organization or related parties. American International University – Bangladesh (AIUB) will not be held liable for any such activities, as for the project is presented as our original work.

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The software project “**University Library Management System**” has been submitted to the following respected members of the board of examiners of the department of computer science in partial fulfilment of the requirements for the degree of Bachelor of Science in Computer Science and Software Engineering / Bachelor of Science in Software Engineering/ Bachelor of Science in Computer Information System on 19.12.2018 and has been accepted as satisfactory.

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Chapter: 1 Statement of Work

1.1 Documentation and history distribution:

Table A-1

Time Duration	Revision date	Descriptions of changes	Authors
4 months	15.12.2018	N/A	Al-Amin Karim, Masudul Hasan, Mehadi Niaz, Mehadi

Table A-2

Recipient Name	Recipient Organization	Distribution Method
Md. Al-Amin	AIUB	Hard Copy

1.2 Objectives:

- Figure out the solution of organized University Library Management System.
- Decrease the communication gap between the students and Library.
- Sort out the requirements.
- Come up with an effective solution.
- Developing a Software University Library Management System.

1.3 Benefits:

- Can see the book availability from Website.
- Cost effective.
- Saves time and Money.
- Easy to manage and instruct.
- User friendly
- Automated

1.4 Software/Technology Proposed :

- Front-End: HTML, CSS, JavaScript, Ajax.
- Server-side language : PHP 5
- Database: MySQL
- SDLC Model: Prototyping

1.5 Hardware and Software Requirements of the project:

- Computers or Laptop
- Any modern browser
- Minimum 1 GB ram to run the system
- MySQL Database
- Operating System: Windows 7, Windows 8 Windows 10
- Internet Browsers

1.6 Deliverable include in scope:

- Full software
- Technical documentation

- User manual

1.7 SDLC methods:

1.7.1 Phase of SDLC:

SDLC is a process for planning, creating, testing, and deploying high qualified software. SDLC stands for system develop life cycle and have six stages. The following image is a representation of the stages of a typical SDLC.

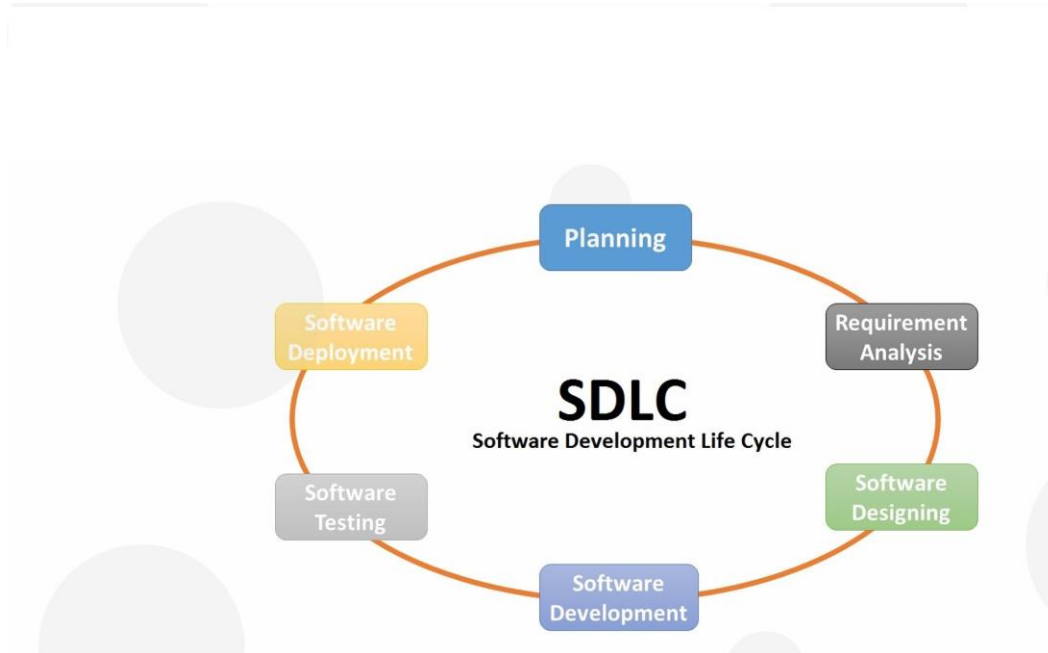


Figure 1: Phase of SDLC

Description of the phases:

Stage 1: Planning and Requirement Analysis

Requirement analysis is the most important and fundamental stage in *SDLC*. It is performed by the senior members of the team with inputs from the customer, the sales department, market surveys and domain experts in the industry. This information is then used to plan the basic project approach and to conduct product feasibility study in the economical, operational and technical areas. Planning for the quality assurance requirements and identification of the risks associated with the project is also done in the planning stage. The outcome of the technical feasibility study is to define the various technical approaches that can be followed to implement the project successfully with minimum risks.

Stage 2: Defining Requirements analysis

Once the requirement analysis is done the next step is to clearly define and document the product requirements and get them approved from the customer or the market analysts. This is done through an SRS (Software Requirement Specification) document which consists of all the product requirements to be designed and developed during the project life cycle.

Stage 3: Designing the Product Architecture

SRS is the reference for product architects to come out with the best architecture for the product to be developed. Based on the requirements specified in SRS, usually more than one design approach for the product architecture is proposed and documented in a DDS - Design Document Specification. This DDS is reviewed by all the important stakeholders and based on various parameters as risk assessment, product robustness, design modularity, budget and time constraints, the best design approach is selected for the product. A design approach clearly defines all the architectural modules of the product along with its communication and data flow representation with the external and third party modules (if any). The internal design of all the modules of the proposed architecture should be clearly defined with the minutest of the details in DDS.

Stage 4: Building or Developing the Product

In this stage of SDLC the actual development starts and the product is built. The programming code is generated as per DDS during this stage. If the design is performed in a detailed and organized manner, code generation can be accomplished without much hassle. Developers must follow the coding guidelines defined by their organization and programming tools like compilers, interpreters, debuggers, etc. are used to generate the code. Different high level programming languages such as C, C++, Pascal, Java and PHP are used for coding. The programming language is chosen with respect to the type of software being developed.

Stage 5: Testing the Product

This stage is usually a subset of all the stages as in the modern SDLC models, the testing activities are mostly involved in all the stages of SDLC. However, this stage refers to the testing only stage of the product where product defects are reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.

Stage 6: Deployment in the Market and Maintenance

Once the product is tested and ready to be deployed it is released formally in the appropriate market. Sometimes product deployment happens in stages as per the business strategy of that organization. The product may first be released in a limited segment and tested in the real business environment (UAT- User acceptance testing). Then based on the feedback, the product may be released as it is or with suggested enhancements in the targeting market segment. After the product is released in the market, its maintenance is done for the existing customer base.

1.7.2 SDLC Models: There are different kinds of SDLC process model. Some are traditional and some agile and other.

Traditional models:

1. Waterfall model:

If all requirements are very clear then this model is chosen. The main thing is that when the working is started it in phase by phase there is no way to move back to the previous phases. This model is chosen for small projects, when the requirements are clear and fixed there is no option to change it. There are advantage and disadvantages in this model.

Advantages:

Waterfall model is simple and easy to use. This model can be easy to implement and manage because each phase has a specific purpose, and development occurs in only one phase at a time.

Disadvantages:

Waterfall model is inappropriate for complex projects. It should not be used for developing object-oriented software, for long-term or ongoing projects, or for projects in which requirements are unknown or subject to change.

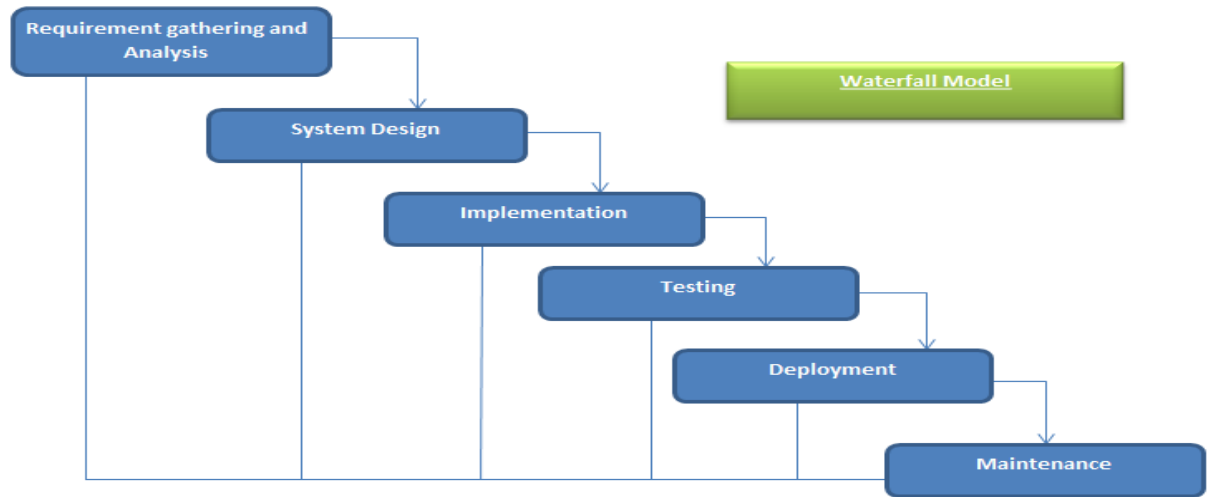


Figure 2: Water Fall Model

2. Incremental life cycle Model:

The Incremental life cycle model builds an iterative approach into the Waterfall model. Development projects are divided into several smaller, more manageable iterations. Each iteration passes through a mini-Waterfall process. Requirement, design, implementation and testing phases are completed for each iteration. It starts implement a subset of the software. This method is based on repeated cycle (iterative). The main plot of this method is to develop a system through repeated cycles (iterative) and in smaller portions at a time (incremental).

Advantages:

Unlike the Waterfall and V-Shaped models, the Incremental model generates a working prototype early in the development process. The iterative nature of the Incremental model makes it more flexible when adding or changing requirements. This model is also easier to test and debug because testing is performed incrementally during each iteration on a relatively small amount of new code.

Disadvantages:

The Incremental model is less risky than the Waterfall or V-Shaped models, but it may be inappropriate for large, long-term projects.

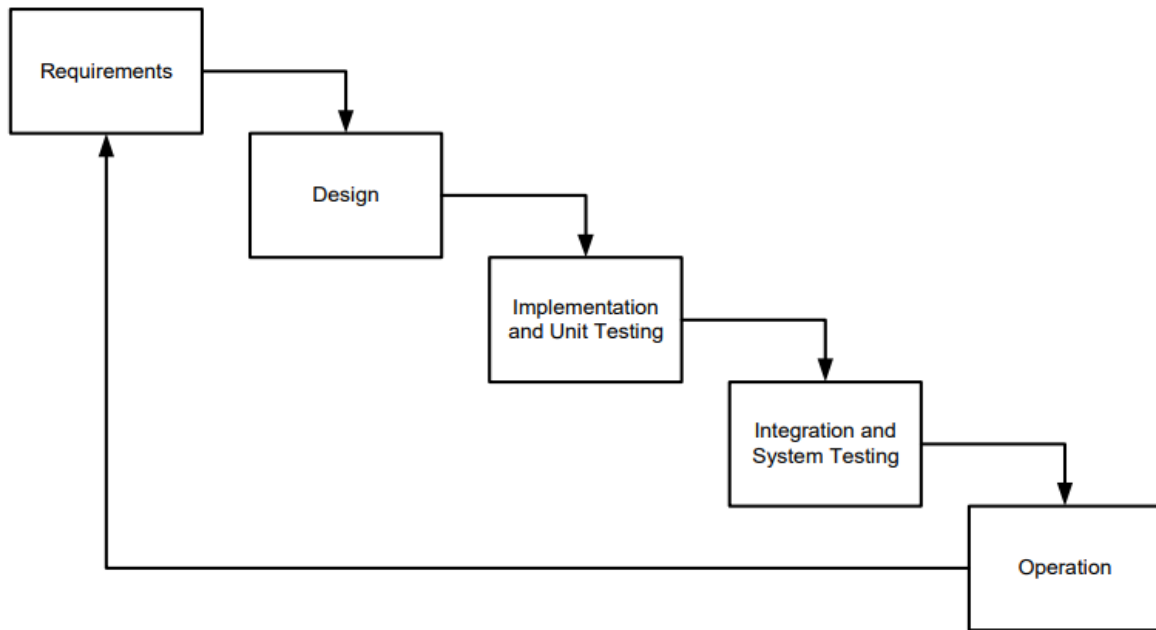


Figure 3: Incremental life cycle model

3. Prototyping model:

In simple words, the prototyping refers to building software application prototypes which displays the functionality of the product under development, but does not hold the exact logic of the original software. Iteration occurs as the prototype is tuned to satisfy the needs of the customer. This model is mainly used for understanding the user requirements clearly. This one helps developer to understand what functionality and system look customer is expecting to build.

Advantages:

This is a step by step process, it make the work of a developer more specific and clear. It is safer than other models.

Disadvantages:

It takes time to implement the project as it is based on the customer demand.

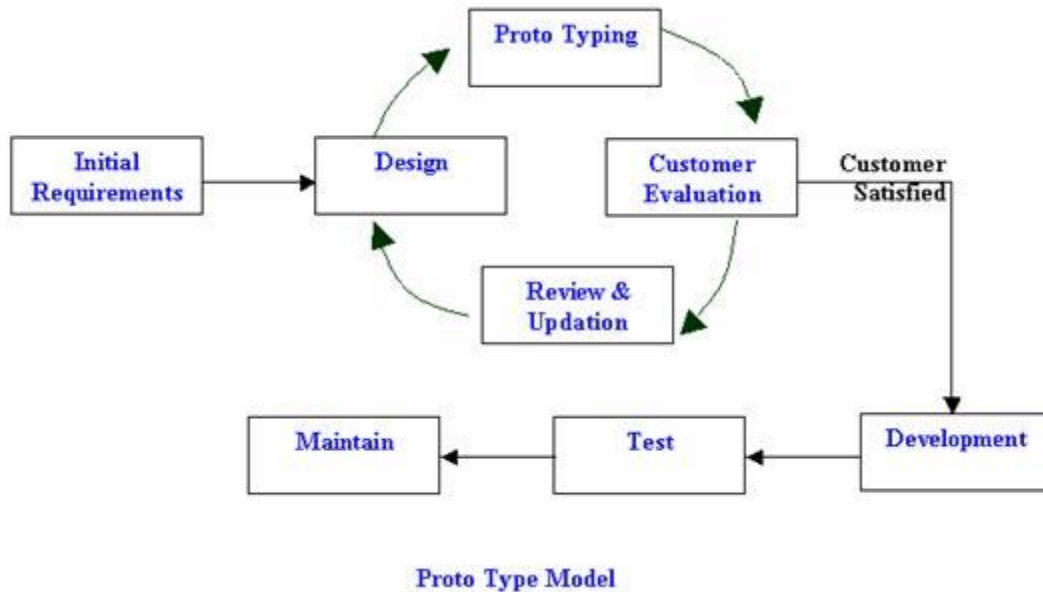


Figure 4: Prototype model

4. V – Model:

This is also known as Verification and Validation Model. The V-Model is an extension of the waterfall model and is based on the association of a testing phase for each corresponding development stage. This means that for every single phase in the development cycle, there is a directly associated testing phase. Like waterfall model here requirements are well defined and fixed and there will be no undefined or ambiguous requirements. This is mainly used for short projects.

Advantages:

Like the Waterfall model, the V-Shaped model is relatively simple and easy to use. Specific goals are defined for each phase. The focus on preparing test plans early in the process gives the V-Shaped model a higher chance for success. Like the Waterfall model, the V-Shaped model is appropriate for small development projects in which requirements are well understood.

Disadvantages:

Like the Waterfall model, all requirements must be stated at the beginning of the project, making it difficult to add or change requirements later in the development process. All

software development occurs in a single phase, so there are no early working versions or prototypes.

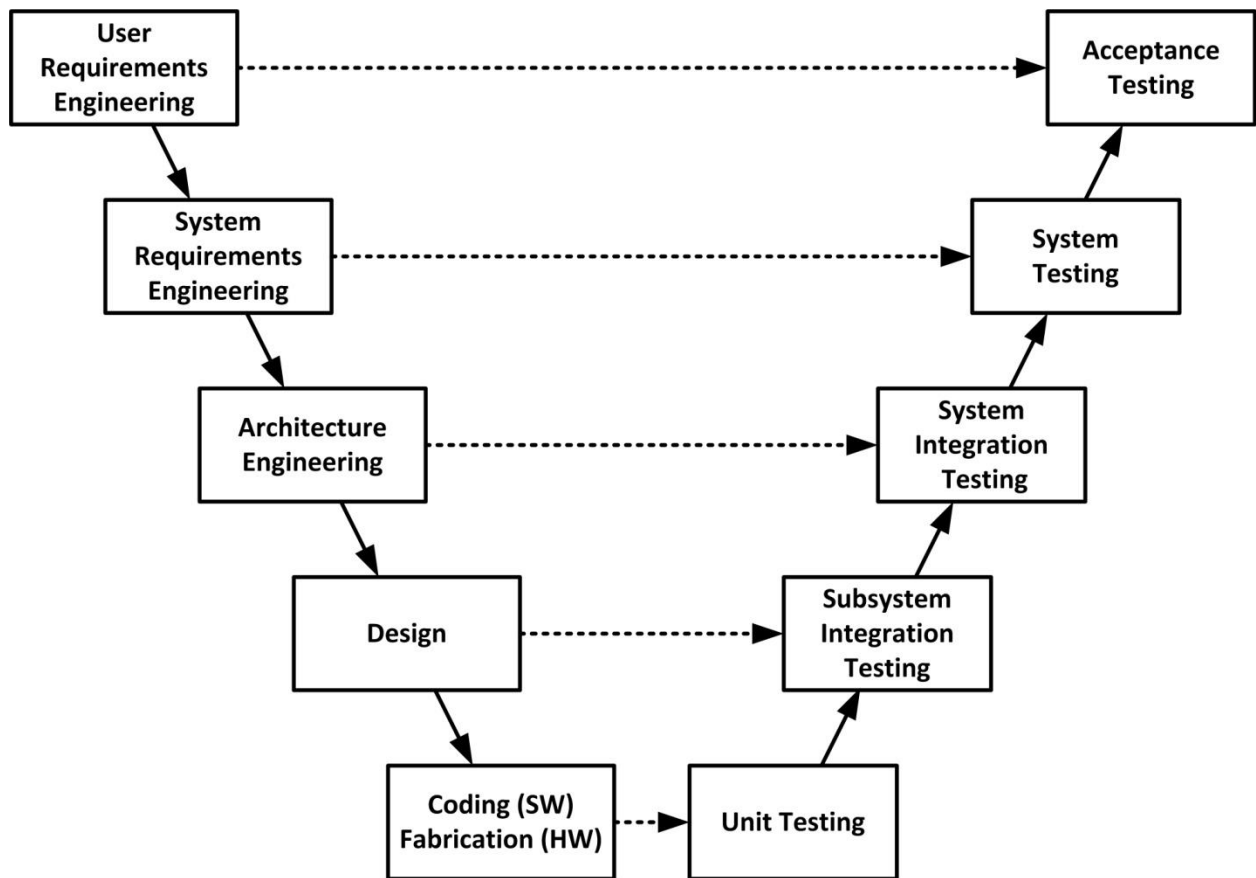


Figure 5: V model.

5. Agile methods:

In Agile model, the tasks are divided to time boxes (small time frames) to deliver specific features for a release. These are done in iteration process. Each iteration process has time limit from 1 week to 4 weeks. Basically now-a-days this model is used in most of the projects. Agile model believes that every project needs to be handled differently and the existing methods need to be tailored to best suit the project requirements. In agile the tasks are divided to time boxes smalltime frames to deliver specific features for a release.

Advantages:

It is a very realistic approach to software development Promotes teamwork and cross training. Functionality can be developed rapidly and demonstrated. Resource requirements are minimum and suitable for fixed requirements deliver early partial working solutions.

Disadvantages:

Not suitable for handling complex dependencies. More risk of sustainability, maintainability and extensibility. An overall plan, an agile leader and agile PM practice is a must without which it will not work. Strict delivery management dictates the scope, functionality to be delivered, and adjustments to meet the deadline.

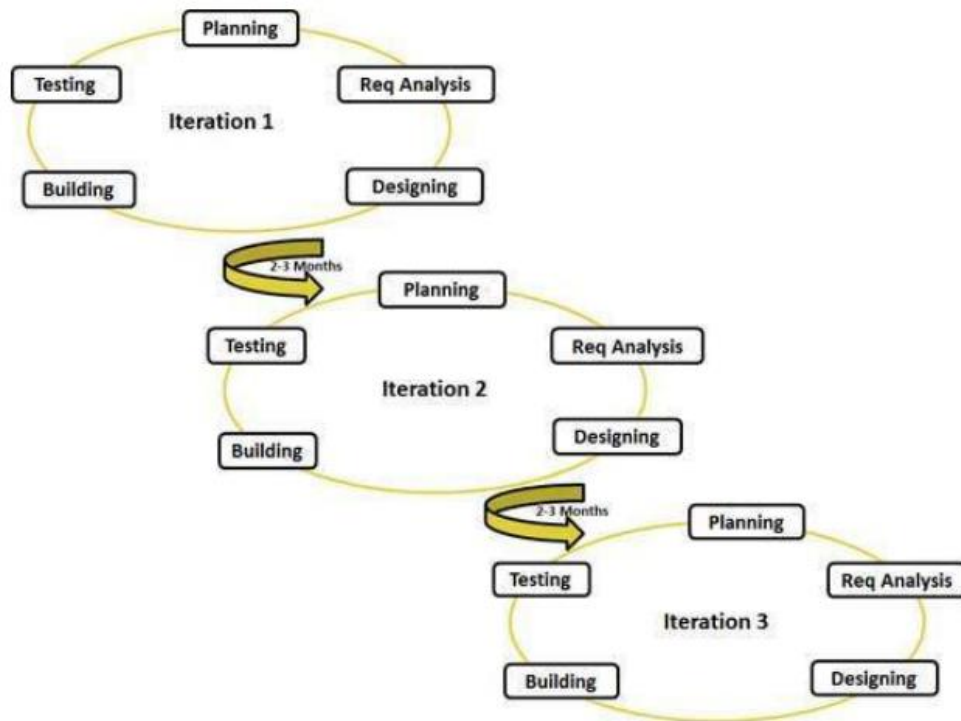


Figure 6: Agile model

1.8 Our chosen SDLC model:

Our chosen SDLC model is ***Agile model***. It is a very realistic approach to software development Promotes teamwork and cross training. The agile method anticipates change and allows for much more flexibility than traditional methods. Clients can make small objective changes without huge amendments to the budget or schedule. The process involves breaking down each project into prioritized requirements, and delivering each individually within an iterative cycle. **The agile method is based on giving high priority to customer participation, from the very beginning of the development cycle. The objective is to keep the client involved at every step so that they have a product that they are happy with at the end.**

1.8.1 Why we choose prototyping model:

There are many advantages of Agile model, Businesses have proven this model of project management with their increased client satisfaction rate. The value for businesses that use this model include :

- Lower Cost
- Enables clients to be happier with the end product by making improvements and involving clients with development decisions throughout the process.
- Encourages open communication among team members, and clients.
- Providing teams with a competitive advantage by catching defects and making changes throughout the development process, instead of at the end.
- Speeds up time spent on evaluations since each evaluation is only on a small part of the whole project.
- Ensures changes can be made quicker and throughout the development process by having consistent evaluations to assess the product with the expected outcomes requested.
- It keeps each project transparent by having regular consistent meetings with the clients and systems that allow everyone involved to access the project data and progress.

As there is a lots of advantages there are also some disadvantages, Businesses use this model of project management to ensure that throughout the process customers save time, money, and have the flexibility to make changes anytime during the development process But among all the models we felt comfortable with the Agile Model.

1.9 Our Related work studies:

There are many library websites we followed and try to implement one of that types of website it offers many flexibilities. Before coming up with the idea we have visited related sites like,

AIUB Library(<https://library.aiub.edu/>) and Kent State University Library (<https://www.library.kent.edu/>) and most importantly our varsity's student portal. In this part, we analysis their software and find out pros and corns of these software. That will help our project development.

Kent-State University Libraries:

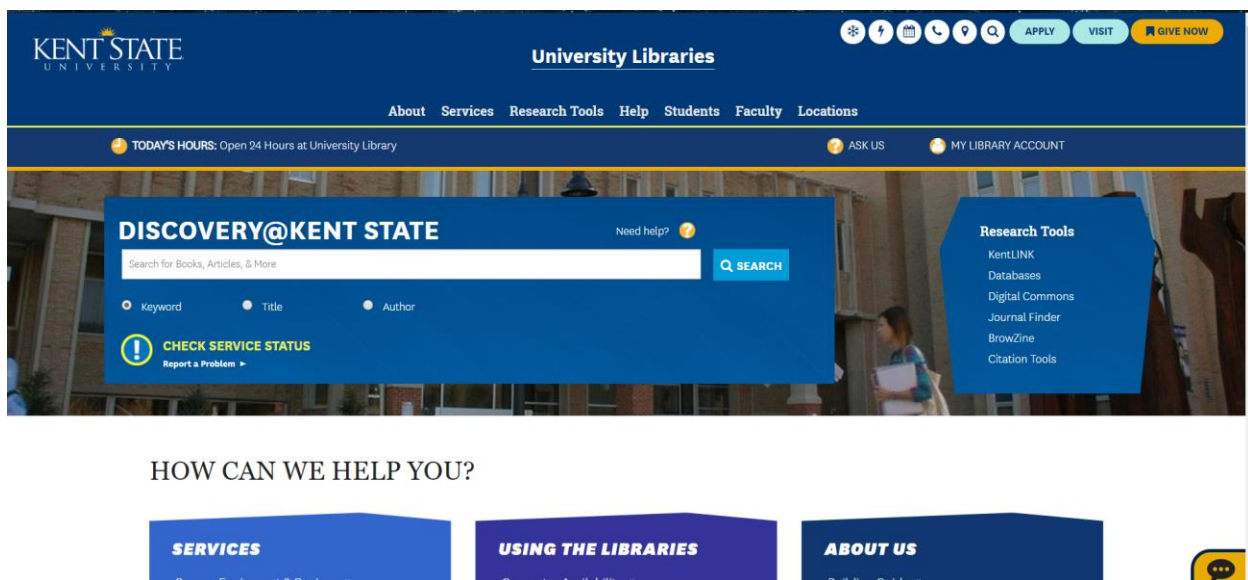


Figure 7: Kent-State University Libraries

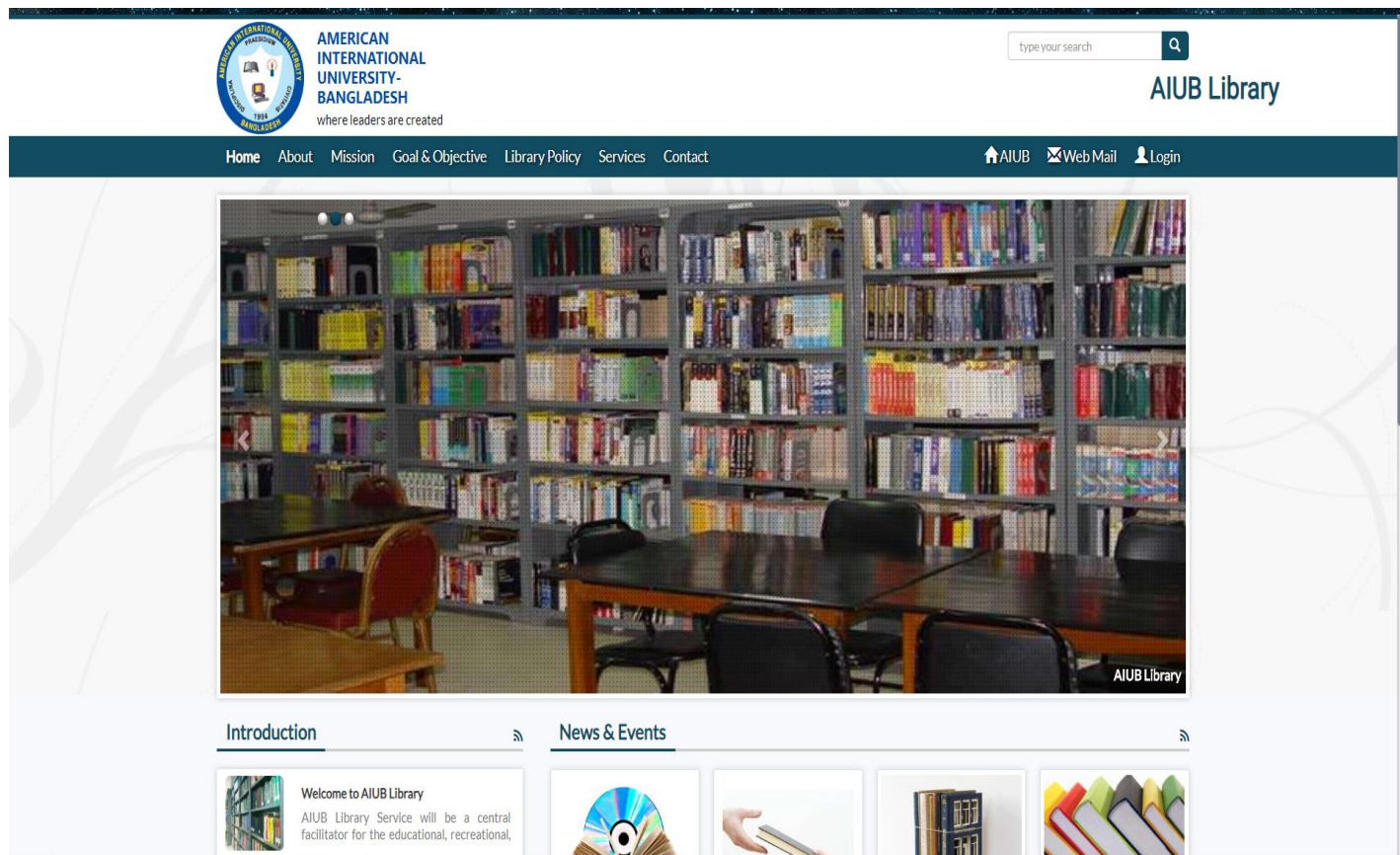


Figure 8: AIUB Library

Chapter 2: Software Requirement Specification

2.1 Project summary

We have chosen to develop software for University Library Management System (library System for both teacher and student).

2.1.1 Field study:

As we the team members are using already this kind of library management system we thought about the benefits we are getting from it and what else can be done by this kind of system. So, our study field was library of kent-Universssity.

It allows us to see:

1. Free online registration
2. Login to see profile
3. edit profile
4. Book availability
5. How many book issued
6. How many book returned
7. How much fined for the late
8. Payment

2.1.2 Problematic field:

The Library management system software is several years old, and vendors come into and out of the market every month. Since typical licensing and development costs are several hundred thousand dollars or more, vendor selection is high risk. The current volatility of the portal market and the lack of agreed upon standards argues for institutions to wait to jump into a library unless there is a clear need or benefit that requires one.

Developing a campus library management system is a key strategic technology decision that will impact the entire campus community and every other strategic technology program. The decision on a portal strategy requires careful analysis of long-term and short-term needs.

2.1.3 User Story:

Sample use-case	Actor	Corresponding user stories
Admin Account	Admin	As a Admin of that application. I can check all of the information Student, Teacher, Librarians and edit my profile.
Student Account	Student	As a Student. I can edit my profile. See book availability, fine and how many book borrowed.
Faculty Account	Faculty	As a Faculty. I can edit my profile. See book availability, fine and how many book borrowed.
Librarians Account	Librarian	As a Librarian. I can edit my profile and I can see all student and Faculty information. See book availability, fine and how many book borrowed.
Login into account	Faculty, Student	As a Faculty Student. I can login into my account, Edit or update profile, see fine and all book availability.
Login into account	Librarians	As a Librarian. I can edit my profile and I can see all student and Faculty information. See book availability, fine and how many book borrowed.
Login into account	Admin	As a Admin of that application. I can check all of the information Student, Teacher, Librarians and edit my profile.

Table: User Story.

2.2 Project Scope:

In Scope:

- Admin Login
- Admin register Librarians.
- Admin register Students.
- Admin register Faculties.
- Librarians register Faculties and Students
- Faculties and students do registration it-self.
- After login Admin and Librarians can see all the information of Students and faculties.
- After login faculties and student view and edit their profile and see all the books available in library.
- Admin and librarians will see all fine they (student and faculty) have.
- Admin and Librarians will send the mail to the students, faculties or librarians for any emergency.

Out Scope:

- Report
- Payment

2.3 Overall Description

2.3.1 Product Perspective

The purpose of Library Management System is to minimize the difficulties for admin, librarians, teacher and students to maintain the communication.

2.3.2 Project Feature

- Login system for Admin, Librarians, teacher and student.
- Registration for Admin, Librarians, teacher and student.
- Make request for registration.
- Admin can accept or reject request.
- Admin or Librarians can send email or SMS for any problem.
- Student and faculty can see books availability for the borrow.

2.3.3 Operating Environment

The software will run through any modern browser like Google Chrome, Mozilla, Microsoft Edge etc.

2.3.4 Design & Implementation Constraints

“University Library Management System” can be run in any processing system like dual-core, quad-core, hexa-core, octa-core etc. Much higher configured system and well developed operating system will help to run this system more smoothly.

2.3.5 Assumption and Dependencies

There is a dependency of the software and it is

- A good structured and secured hosting service to store the data & files.
- Good internet connection

2.4 System Features

2.4.1 User Option

There are multiple login systems in the software. Every user has a particular homepage. To access the system the need to login through id and password.

2.4.2 Stimulus/Response Sequence

User can login through the id and password or log out. For login, when user give id and password, the software will verify them. If it is allowed it will give access to the user.

2.4.3 Interface Requirement

Graphical user interface will demonstrate the page that will appear to user. GUI contains lots of form that will be used by the users.

2.4.4 User Interface

User interface will contain lots of features that used by users. They will appear step by step while accessing the system. There must be some rules that should follow the user.

2.4.5 Minimum Hardware Requirement

Server Side:

- OS: Linux/Windows Server
- CPU: Minimum Intel Xenon or higher
- RAM: 4 GB or higher
- Hard Drive: 2 TB or more

Client Side:

- Operating System: any operating system with webpage browsing accessibilities
- CPU (PC): Minimum Intel Pentium or higher
- RAM: 512Mb or higher

2.4.6 Software Interfaces:

- Front-End: Html, CSS, JavaScript, Ajax
- Back-End: PHP 5, MySQL
- SDLC Model: Agile

2.4.7 Communication Interface

- Internet connection.

2.5.1 Non-Functional Requirements

• Usability Requirement

The system shall allow the users to access the system from the phone using web browser. Since all users are familiar with the general usage of mobile browser, no special training is required. The system is user friendly, which makes the system easy.

• Availability Requirement

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

• Efficiency Requirement

Mean Time to Repair (MTTR) - Even if the system fails, the system will be recovered back up within an hour or less.

• Accuracy

The system should accurately provide real time information taking into consideration various concurrency issues. The system shall provide 100% access reliability.

• Performance Requirement

The information is refreshed depending upon whether some updates have occurred or not in the application. The system shall respond to the member in not less than two seconds from the time of the request submittal. The system shall be allowed to take more time when doing large processing jobs. Responses to view information shall take no longer than 5 seconds to appear on the screen.

• Reliability Requirement

The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. The system will run 7 days a week, 24 hours a day.

Chapter: 3 Software design specification plan

Documentation history and distribution:

Table 3-1

Revision	Revision date	Descriptions of changes	Authors
1.0A	12.8.2018	N/A	Al-Amin Karim, Masudul Hasan, Mehadi Niaz, Mehadi

Table 3-2

Recipient Name	Recipient Organization	Distribution Method
Md. Al-Amin	AIUB	Hard Copy

3.2 Introduction

In software design specification plan there will be some system diagrams [12], some software UI screenshots, architecture plan, test plan and system overview.

3.3 System Overview

3.3.1 Activity Diagram

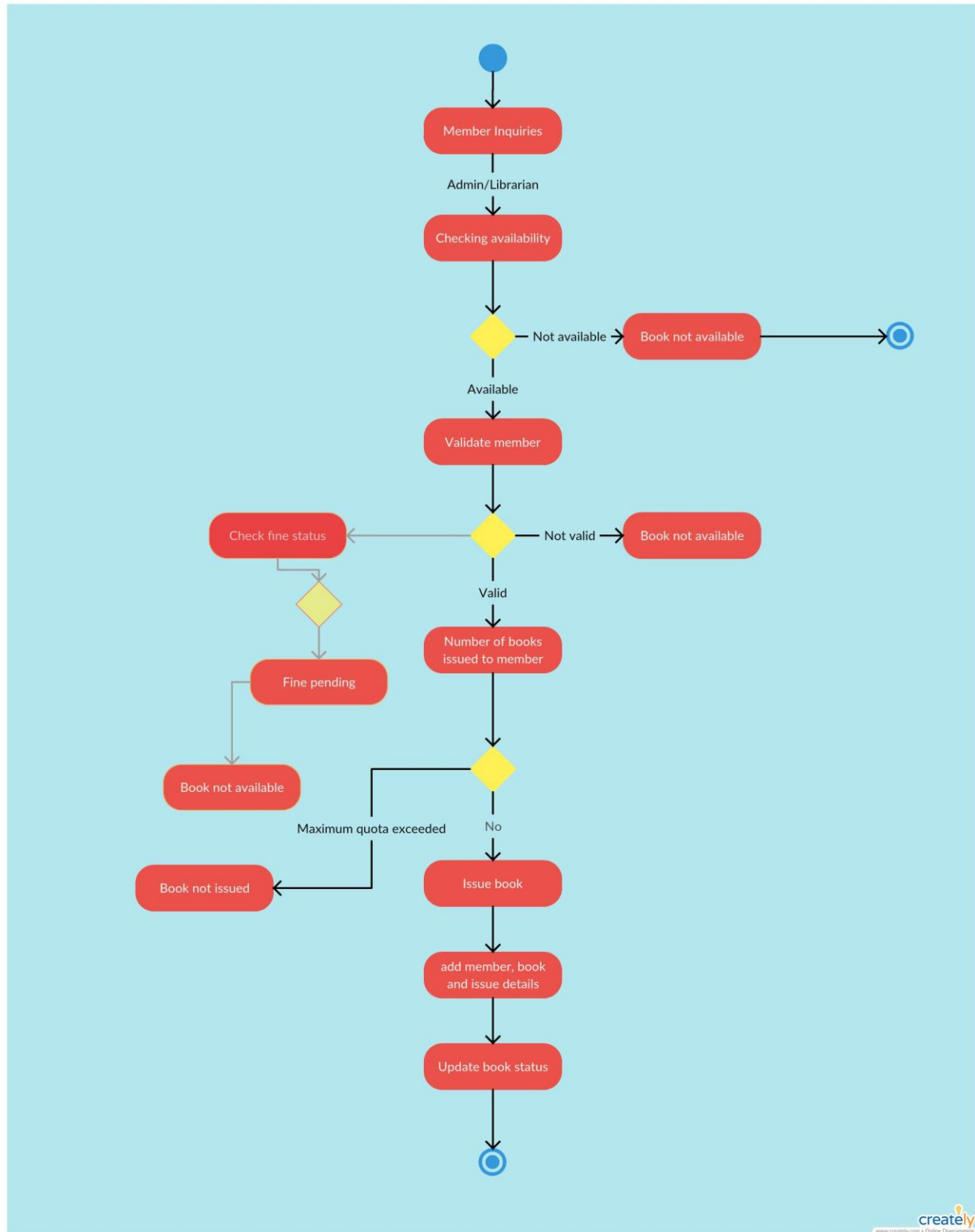


Figure 9: Activity diagram

3.4.2 ER Diagram

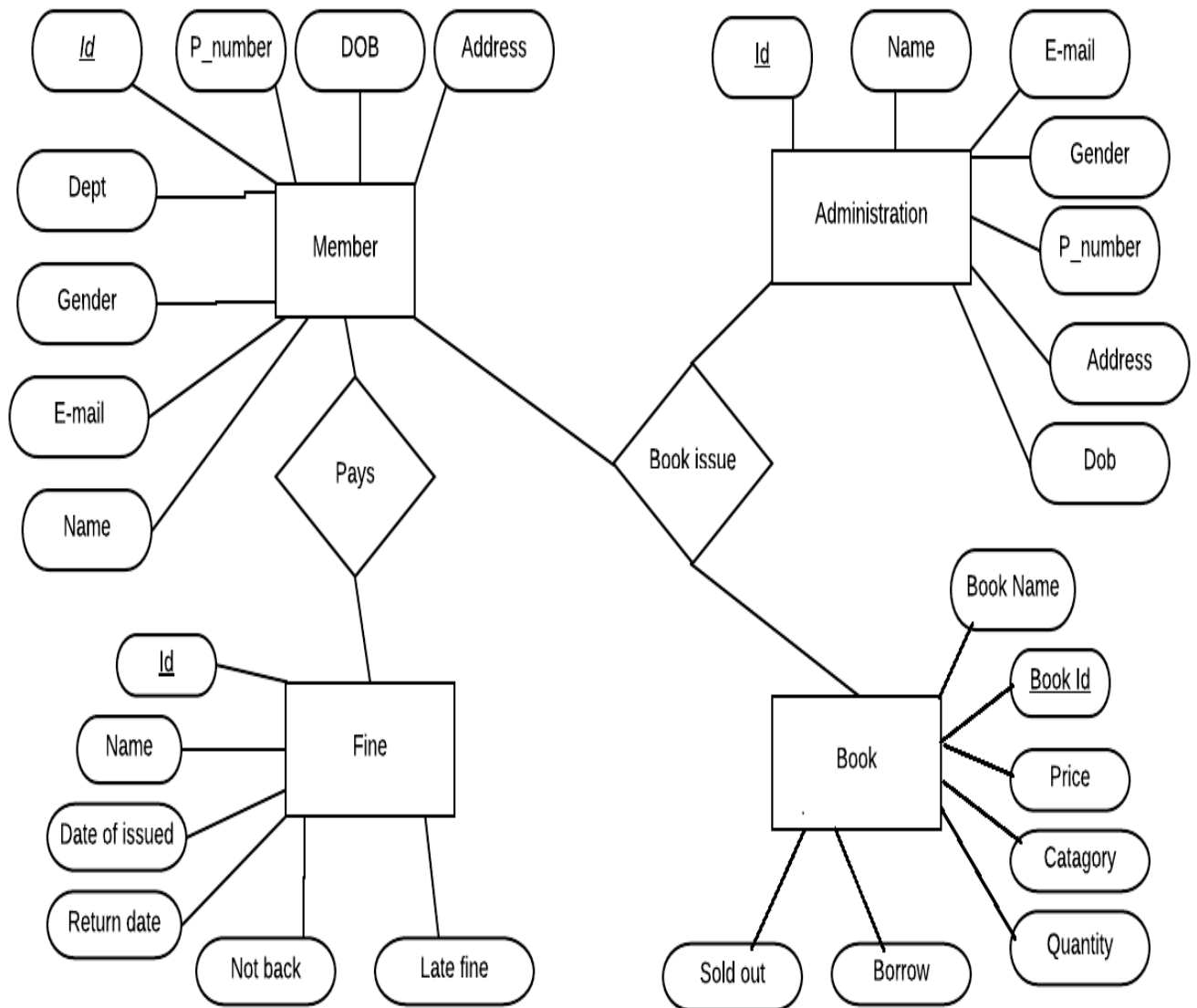


Figure 10: ER Diagram of the system

3.4.3 Use case Diagram

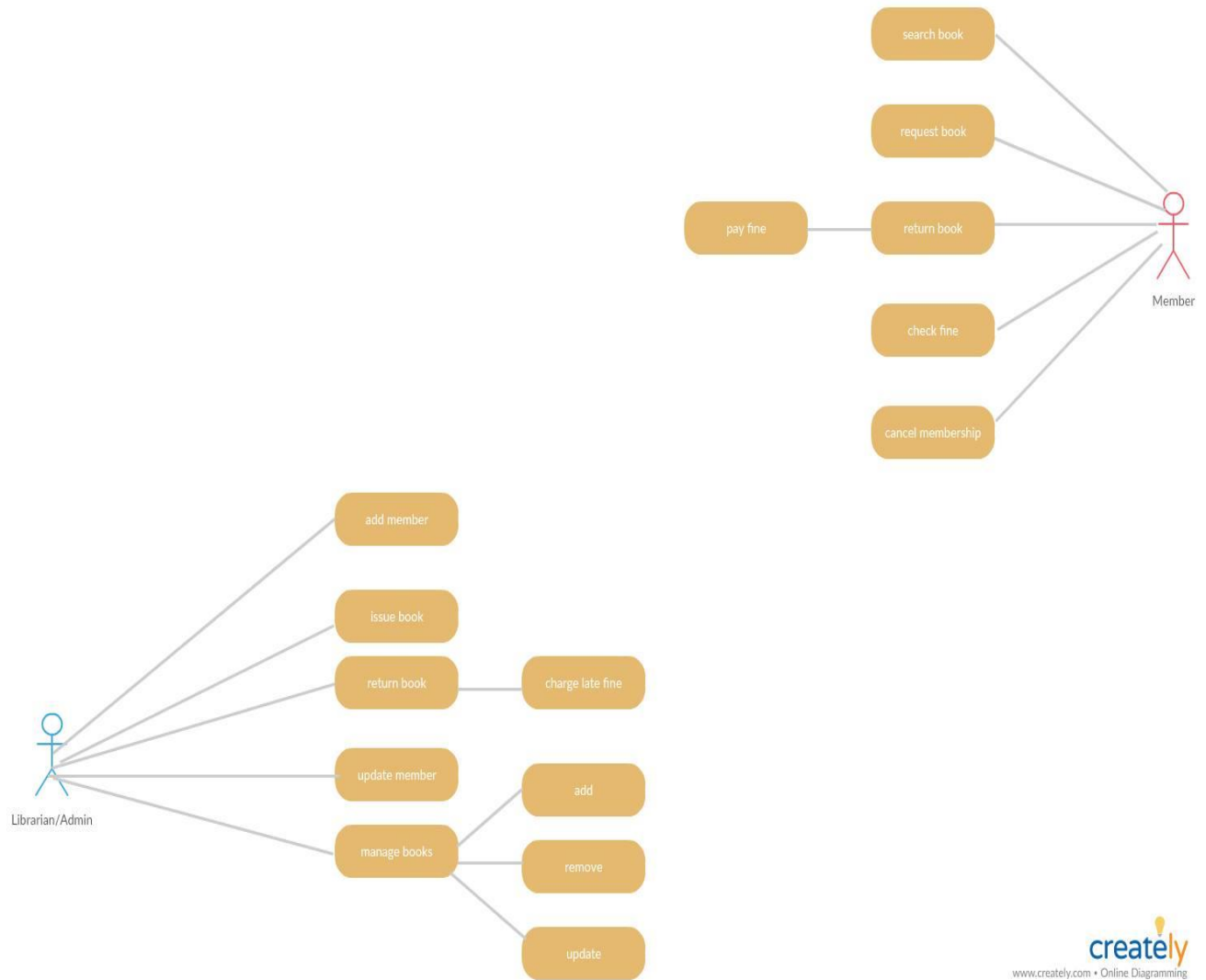


Figure12: Use Case Diagram

3.4.4 Class Diagram

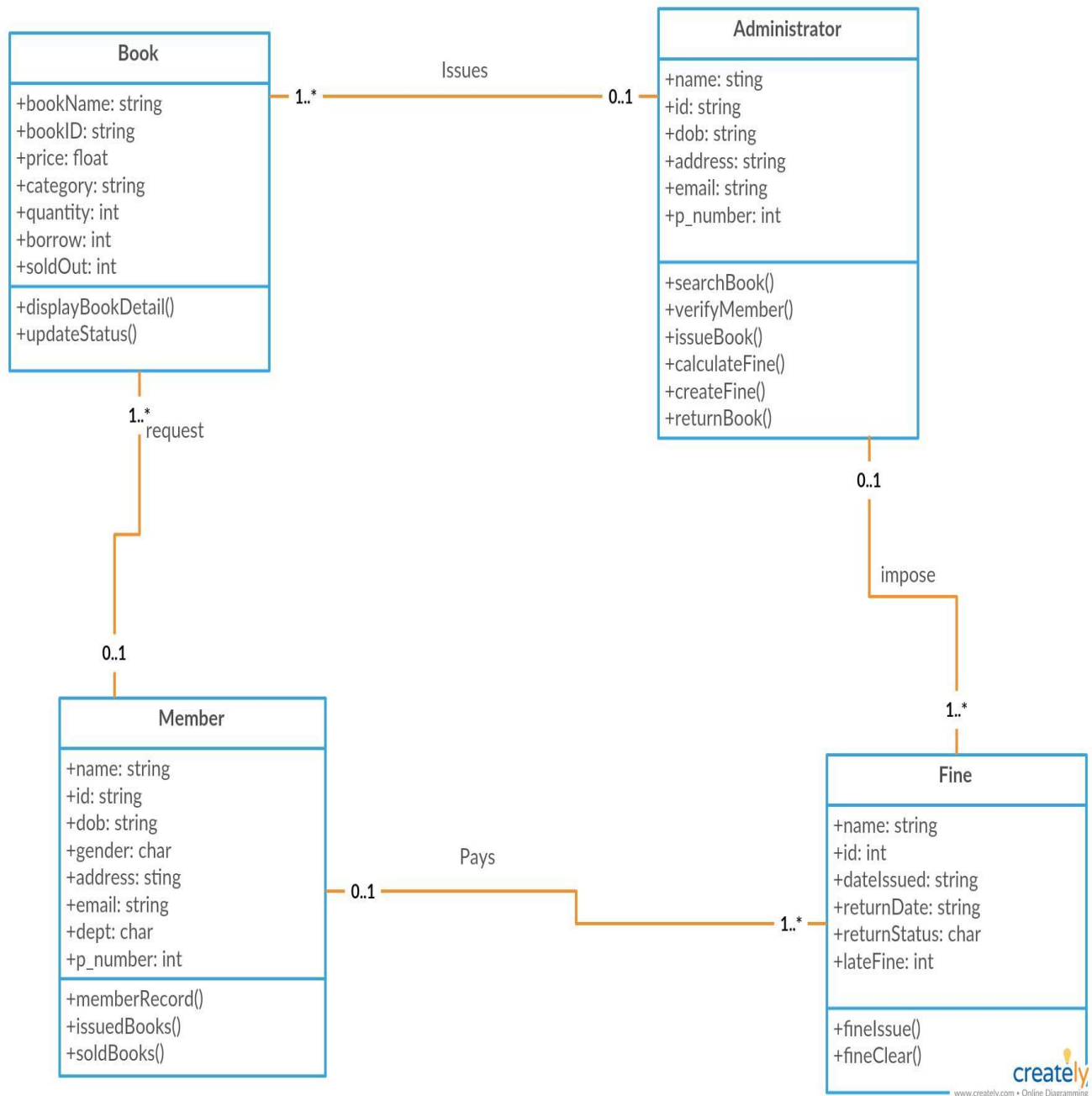


Figure 13: Class Diagram

3.5 User Interface Design

3.5.1 Without Login into system

3.5.1.1 Home Page:

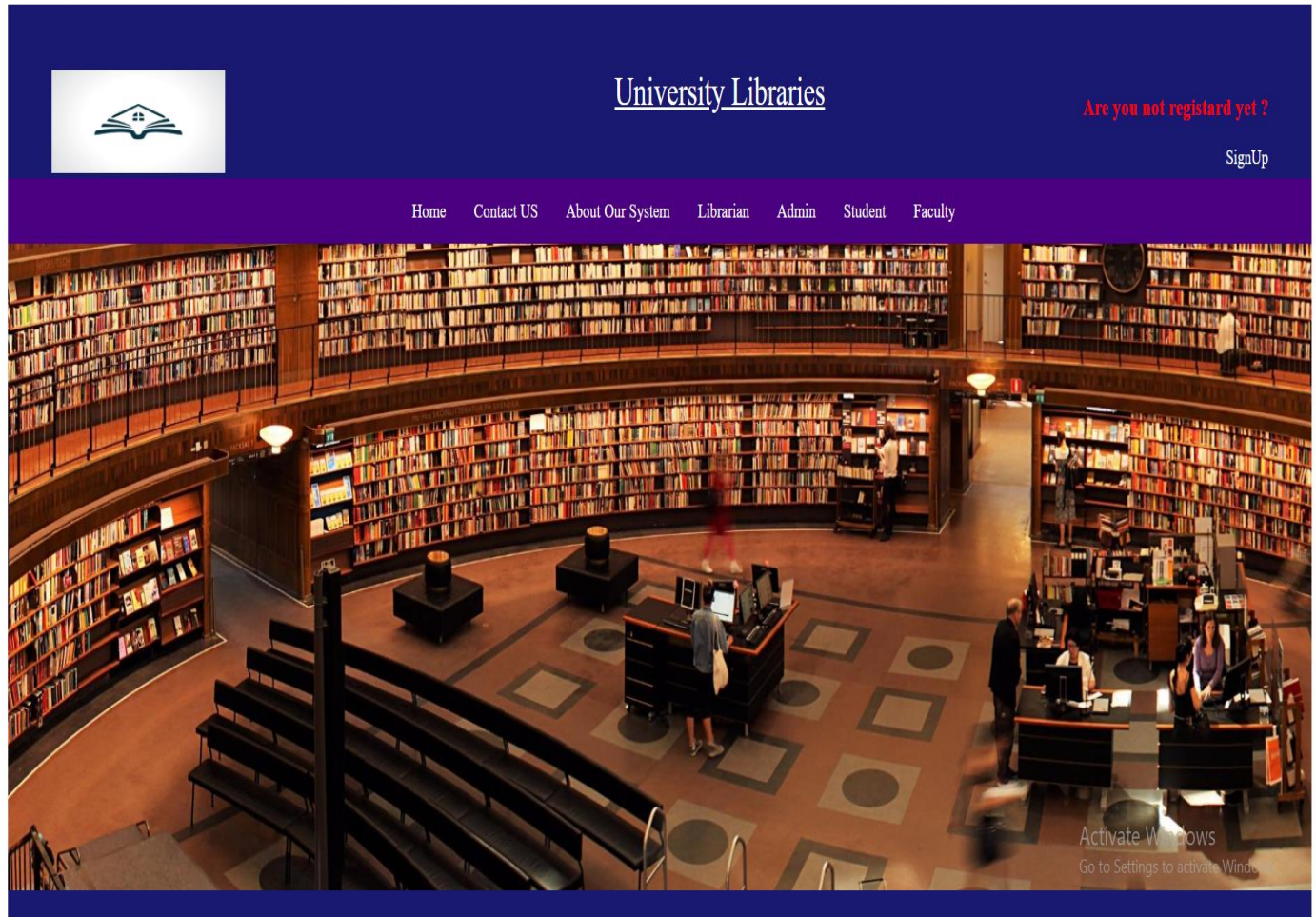


Figure 11: Home Page

3.5.1.2 Login:

University Library Management System

Login form

UserId: enter your email address

Password: enter your password

Login

Registration

Forgot Password

Activate Windows
Go to Settings to activate Windows.

Figure 12: login Page

3.5.1.3 Registration:

University Library Management System

Registration Form

Name : Gazi Al-Amin

ID : 15-30781-3

Email : gazialamin96@gmail.com

Password :

Gender : ☒ Male ☐ Female

P_Number : 01773754462

Address : Shekhertech,
Mohammadpur, Dhaka

Department: Information Technology ▾

DOB : mm/dd/yyyy

Course : Computer science and engineering ▾

SignUp LogIn

Figure 13: Registration Form

3.5.2 Faculty login into system:

3.5.2.1 Dashboard:



Figure 14: Dashboard

3.5.2.2 Previous Issued Books:

Welcome To Library Management System					
Faculty Previous Issued Books :					
Book Code	Book Name	Date Of Issued	Return Date	Back the book	Not back
1001	Advance Database Management System	12/13/2018	12/16/2018	not	still Issuing
1002	Java Programming	12/13/2018	12/16/2018	not	still Issuing
1003	Teach Yourself C++	12/13/2018	12/16/2018	backed	
1004	Introduction to Programming	12/13/2018	12/16/2018	not	still Issued

Figure 15: Faculty Previous Issued Books

3.5.2.3 Present Issued Books :

Welcome To Library Management System

Faculty Present Issued Books :

Book Code	Book Name	Date Of Issued	Return Date
2001	Advance Database Management System	12/13/2018	12/16/2018
2002	Java Programming	12/13/2018	12/16/2018
2018	Mathematics	12/13/2018	12/16/2018
2020	Physics	12/13/2018	12/16/2018

Figure 16: Faculty Present Issued Books

3.5.2.4 Faculty Late fine:

Welcome To Library Management System

Faculty Late Fine's :

Book Code	Book Name	Date Of Issued	Return Date	Back the book	Not back	Late Fine's
2001	Advance Database Management System	12/13/2018	12/16/2018	12/18/2018	back	10tk
2002	Java Programming	12/13/2018	12/16/2018	12/19/2018	back	30tk
2008	Advance Operating System	12/13/2018	12/16/2018	12/16/2018	back	0tk
2010	Introduction to Programming	12/13/2018	12/16/2018	12/20/2018	back	20tk
2001	Advance Database Management System	12/13/2018	12/16/2018	12/18/2018	back	10tk

Figure 17: Faculty Late fine

3.5.2.5 View All books from library:

Book Management Form						
Back to Home						
View Book List						
Search Book Name : <input type="text"/> <input type="button" value="Submit"/>						
Book Id	Book Name	Category	Price	Quantity	Borrowed	sold Out
1001	Advance Database Management System	IT	300	10	1	2
1006	Introduction to Database	Information TechnologyT	250	20	2	3
2002	Introduction to java	Information Technology	250	30	2	5
5001	Bangla literature	Bangla	200	4	2	1

Figure 18: View all books

3.5.3.1 Student Dashboard:

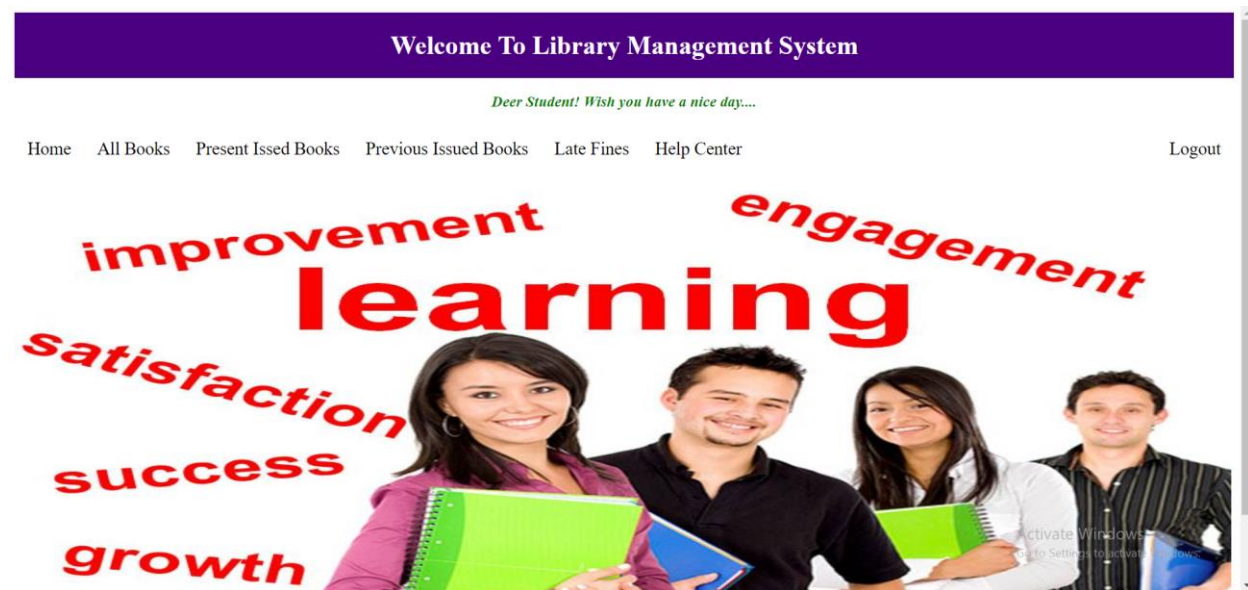


Figure 19: Student Homepage

3.5.3.2 Student Present Issued Books:

Welcome To Library Management System

Student Present Issued Books :

Book Code	Book Name	Date Of Issued	Return Date
2001	Advance Database Management System	12/13/2018	12/16/2018
2002	Java Programming	12/13/2018	12/16/2018
2018	Mathematics	12/13/2018	12/16/2018
2020	Physics	12/13/2018	12/16/2018

Figure 20: Student Present Issued Books

3.5.3.3 Student Previous Issued Books

Welcome To Library Management System

Student Previous Issued Books :

Book Code	Book Name	Date Of Issued	Return Date	Back the book	Not back
1001	Advance Database Management System	12/13/2018	12/16/2018	not	still Issuing
1002	Java Programming	12/13/2018	12/16/2018	not	still Issuing
1003	Teach Yourself C++	12/13/2018	12/16/2018	backed	
1004	Introduction to Programming	12/13/2018	12/16/2018	not	still Issued

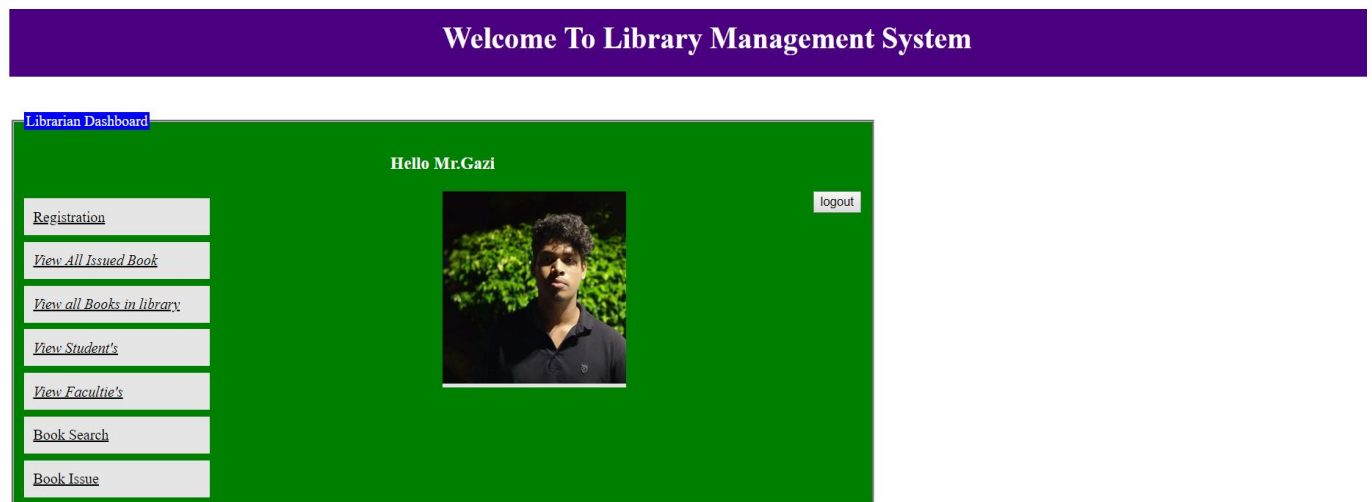
Figure 21: Student Previous Issued Books

3.5.3.4 Late fine of student :

Welcome To Library Management System						
<i>Student Late Fine's :</i>						
Book Code	Book Name	Date Of Issued	Return Date	Back the book	Not back	Late Fine's
2001	Advance Database Management System	12/13/2018	12/16/2018	12/18/2018	back	10tk
2002	Java Programming	12/13/2018	12/16/2018	12/19/2018	back	30tk
2008	Advance Operating System	12/13/2018	12/16/2018	12/16/2018	back	0tk
2010	Introduction to Programming	12/13/2018	12/16/2018	12/20/2018	back	20tk
2001	Advance Database Management System	12/13/2018	12/16/2018	12/18/2018	back	10tk

Figure 22: Ex Late fine of student

3.5.4.1 Librarian Dashboard



Activate Windows
Go to Settings to activate Windows.

Figure 23: Librarian dashboard

3.5.4.2 View All Issued books (Librarian)

View all issued book's below :

Book Id	Book Name	Short Description	Student Id	Student Name	Issued Date	Expired date	Due Date	Status	Action
1002	Java Programming	Its a programming books	15-30781-1	Al-Amin	12/12/2018	12/16/2018	12/18/2018	not back	Send Email
1003	Teach Yourself C++	Its a Programming books	15-30781-3	Gazi Sultan	12/12/2018	12/16/2018	12/16/2018	back	Send Email
1004	Introduction to Programming	Its a Programming books	15-30781-1	Gazi Arman	12/12/2018	12/16/2018	12/16/2018	back	Send Email

Figure 24: All issued books

3.5.4.3 View all Student info :

View All Student's Information :

Student Id	Student Name	Email Address	Phone Number	Address	Course	Year's	Due_Amount	Action
15-30781-3	Gazi Al-Amin	gazialamin96@gmail.com	01773754462	mohammadpur,Dhaka,bd	BSC. SE	2016-2017	50tk	Send Email
15-30771-3	Masud Mahmud	masud@gmail.com	01773125471	Boshundhara,Dhaka,bd	BSC. SE	2016-2017	40tk	Send Email
15-30725-3	Rudro	rudronil@gmail.com	01773755462	mohammadpur,Dhaka,bd	BSC. SE	2017-2018	50tk	Send Email
14-30561-1	Al-Amin	alamin96@gmail.com	01773712462	mohammadpur,Dhaka,bd	BSC. SE	2014-2015	20 tk	Send Email

Figure: View all Student info

3.5.4.4 View all the books

Book Management Form

[Back to Home](#)

[View Book List](#)

Search Book Name :

Book Id	Book Name	Category	Price	Quantity	Borrowed	Sold Out
1001	Advance Database Management System	IT	300	10	1	2
1006	Introduction to Database	Information Technology I	250	20	2	3
2002	Introduction to java	Information Technology	250	30	2	5
5001	Bangla literature	Bangla	200	4	2	1

Figure : View all the books

3.5.4.5 Add books

University Library Management System

[Back to Home](#)

[Add Book](#)

Book Code :

Book Name :

Author Name :

Publication :

Price of Book :

Category :

Book Quantity :

Issue Date :

Cover Photo : No file chosen

Advance Database Management System is a book of database.....

Short Description

Activate Windows
Go to Settings to activate Windows.

Figure : Add books by librarian

3.5.4.6 Book issue for students and faculties :

University Library Management System

Issue Book by Librarians

Book Code :	1565
Book Name :	C# Programming
Total quantity :	25
Price :	220
Name of Borrower :	Gazi Al-Amin
Phone Number :	01773754462
Email :	gazi.alamin96@gmail.com
Address :	Shekhertech, Mohammadpur, Dhaka
Date of Issued :	mm/dd/yyyy
Date of return :	mm/dd/yyyy

Issued

Figure : Book issue by Librarian

3.5.5 Admin

3.5.5.1 Dashboard:



Figure 25: Admin Dashboard

3.5.5.2 View All books:

Book Management Form

[Back to Home](#)

[View Book List](#)

Search Book Name :

Book Id	Book Name	Category	Price	Quantity	Borrowed	Sold Out
1001	Advance Database Management System	IT	300	10	1	2
1006	Introduction to Database	Information Technology	250	20	2	3
2002	Introduction to java	Information Technology	250	30	2	5
5001	Bangla literature	Bangla	200	4	2	1

Figure 26: view all books

3.5.5.3 Admin and librarian registration form:

University Library Management System

[Back to Home](#)

Admin & Librarian Registration Form

User's :

Name :

ID :

Email :

Gender : ☒ Male ☐ Female ☐ Others

P_Number :

Address :

DOB :

Figure 27: Admin and librarians registration form

3.5.5.5 all issued books:

View all issued book's below :

Book Id	Book Name	Short Description	Student Id	Student Name	Issued Date	Expired date	Due Date	Status	Action
1002	Java Programming	Its a programming books	15-30781-1	Al-Amin	12/12/2018	12/16/2018	12/18/2018	not back	Send Email
1003	Teach Yourself C++	Its a Programming books	15-30781-3	Gazi Sultan	12/12/2018	12/16/2018	12/16/2018	back	Send Email
1004	Introduction to Programming	Its a Programming books	15-30781-1	Gazi Arman	12/12/2018	12/16/2018	12/16/2018	back	Send Email

Figure 28: all issued books

Testing

3.6 Test plan

3.6.1 Register Account

Table 3-C: Test Plan for Register Account

No.	Test	Case	Coverage
1	Register Account	Check all the text boxes that accepts texts and numbers	Check all the boxes with valid or invalid inputs
			Data storing in database in successful registration
			registration without typing required data
2		Check the buttons	Sign Up button navigation
			Register Button navigation
			Check button's properties
3		Check system's registration functionality	System's processing time and functionality to complete a successful registration

3.6.2 Login into Account

Table 3-D: Test Plan for Login into Account

No.	Test	Case	Coverage
5	Log into Account	Check all the text boxes that accepts texts and numbers	Check all the boxes with valid or invalid inputs
			Match successful login with the database
			Login typing required data
6		Check the buttons	Sign in button navigation
			Login Button navigation
			Check button’s color and placeholders
7		Check the User Interface design	System’s user interface design in Web view

3.6.3 Teacher

Table 3-E: Test Plan for Faculty

No.	Test	Case	Coverage
8	Faculty	Check all the text boxes that accepts texts and numbers	Check all the boxes with valid or invalid inputs
			Match successful login with the database
			Check login typing required data
9		Check the buttons	Submit button function
			View Profile Navigation
			Button’s properties
			Check Upload Photo button
10	Check the Dashboard	Check the Dashboard function	

3.6.4 Student

Table 3-F: Test Plan for Student

No.	Test	Case	Coverage
11	Student	Check all the text boxes that accepts texts and numbers	Check all the boxes with valid or invalid inputs
			Match successful login with the database
			Check login typing required data
12		Check the buttons	Submit button function
			View Profile Navigation
			Button's properties
			Check Upload Photo button
13	Check the Dashboard	Check the Dashboard function	

3.6.5 Dashboard

Table 3-G: Test Plan for Dashboard

No.	Test	Case	Coverage
14	Dashboard	Faculty Dashboard Test	Check all the buttons sizing and colors
			Check all the button’s navigation
			Check accessing dashboard without login
15		Student Dashboard Test	Check all the buttons sizing and colors
			Check Assignment ,Notice ,Attendance and view profile functionalities
			Check the UI design in Web view
16		Admin Dashboard Test	Check all the buttons sizing and colors
			Check Student and Teacher
			Check accessing dashboard without login

17		Librarian	Check all the buttons sizing and colors

3.6.6 Book Create

Table 3-H: Test Plan for Class create

No.	Test	Case	Coverage
17	Add books	Check book	Check button properties
			Check book add
			Check class how many add
18		Check availability of books	Check button navigations and correct functionalities
			Check Book List

3.6.7 Book Upload

Table 3-I: Test Plan for File Upload

No.	Test	Case	Coverage
19	Book Upload	Check as an Teacher of the system	Check the update File format
			Check the box with all format of file
			Check the Expire date of Assignment
			Check the uploading buttons
			Check Assignment searching results validity and on click navigation
20	Book Upload	Check as a Student	Check the box positioning and sizing
			Check the update assignment

3.6.8 Edit / Delete

Table 3-J: Test Plan for Edit/Delete

No.	Test	Case	Coverage
21	Edit/Delete	Check all the text boxes that accepts texts and numbers	Title and Body properties
			Keywords validity
			Submission with/without editing data
22		Check the buttons, dropdowns and checkbox	Submit button properties
			Check buttons that navigate to edit post
			Check button's color and placing's and the functionality
			Check dropdown & checkbox functional validity
23	Check the changing picture functionality	Check the functionality of removing/changing pic	

3.6.9 Request Course

Table 3-K: Test Plan for Request Login

No.	Test	Case	Coverage
24	Request Login	Check button	Check button properties
			Check navigation functionality and Button
25		Check Functionality	Check time functionality
			Check Validation
			Check Login info

3.6.10 Enrolled Login

Table 3-L: Test Plan for Enrolled Login

No.	Test	Case	Coverage
26	Enrolled Login	Check button	Check button properties
			Check navigation functionality and Button
27		Check Functionality	Check time functionality
			Check Login Validation
			Check Login info

3.6.11 View Page

Table 3-M: Test Plan for View Page

No.	Test	Case	Coverage
28	View page	UI Design and Properties	Check button properties
			Check attached photo sizing
			Check File container size, properties
29		General Functionalities	Check button navigations and correct functionalities
			Check Book create
			Check the database values and the outputs of the posts

3.6.12 Additional test

Table 3-N: Test Plan for Additional Test

No.	Test	Case	Coverage
30	Additional	Navbar properties	Check the link redirector texts
			Check user name properties, and dropdown menu
31		UI design in web view	Check high prioritized Books
32		High priority functional requirement's Performance	Check high prioritized functionalities performance, constraints, and system dependencies

3.7 Test Case

3.7.1 Registration

Table 3-P: Test cases for Registration

Test Case ID	Test Scenario	Test Steps	Expected Results	Actual Result	Pass Fail
TU01	Check Registration in valid syntax	1. Click Sign Up button. 2. Enter email 3. Enter name 4. Enter phone number 5. Enter password (valid) 6. Enter Confirm password 7. Click Register	The registration should be successful	As expected	Pass
TU02	Check Registration process with invalid password types (using less than 4 characters)	1. Follow test steps 1-4 (TU01) 2. Enter invalid password 3. Enter Confirm password 4. Click Register	Message should pop up saying 'password must be minimum 8 characters'	As expected	Fail
TU03	Check Registration process with invalid password types (using different passwords in both password)	1. Follow test steps 1-4 (TU01) 2. Enter password (4 characters) 3. Enter Confirm password (using different password)	An Error message should pop up saying 'passwords did not match'	As expected	Fail
TU04	Check Registration process without filling any of the input boxes	1. Click Sign Up button. 2. Enter phone number 3. Enter password (8 characters) 4. Enter Confirm password	message should pop up saying 'required input boxes cannot be empty'	As expected	Pass

3.7.2 LOGIN into system as a Teacher

Table 3-Q: Test cases for LOGIN into system as a Teacher

Test Case ID	Test Scenario	Test Steps	Expected Results	Actual Result	Pass Fail
TU01	Check Teacher Login process in valid syntax	1. Click Login button. 2.Enter valid email 3.Enter valid password type & Press Login	Login into that account should be successful	As expected	Pass
TU02	Check Teacher Login process with invalid passwords (using less than 4 characters)	1.Follow Test Steps 1-3 (TU01) 2.Enter invalid Password (less than 4 characters) 3.Press Login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU03	Check Teacher Login process with invalid passwords (using wrong passwords)	1. Follow Test Steps 1-3 (TU01) 2.Enter wrong Password 3. Press login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU04	Check Teacher Login process without filling the input boxes	1. Follow Test Steps 1-2 (TU01) 2.Press Login	Error message pops up saying 'input boxes cannot be empty'	As expected	Pass

3.7.3 LOGIN into system as a Student

Table 3-S: Test cases for LOGIN into system as a Student

Test Case ID	Test Scenario	Test Steps	Expected Results	Actual Result	Pass Fail
TU01	Check Student Login process in valid syntax	1. Click Login button. 2.Enter valid email 3.Enter valid password type & Press Login	Login into that account should be successful	As expected	Pass
TU02	Check Student Login process with invalid passwords (using less than 4 characters)	1.Follow Test Steps 1-3 (TU01) 2.Enter invalid Password (less than 4 characters) 3.Press Login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU03	Check Student Login process with invalid passwords (using wrong passwords)	1. Follow Test Steps 1-3 (TU01) 2.Enter wrong Password 3. Press login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU04	Check Student Login process without filling the input boxes	1. Follow Test Steps 1-2 (TU01) 2.Press Login	Error message pops up saying 'input boxes cannot be empty'	As expected	Pass

3.7.4 3 LOGIN into system as a Librarian

Table 3-T: Test cases for Librarian

Test Case ID	Test Scenario	Test Steps	Expected Results	Actual Result	Pass Fail
TU01	Check Librarian Login process in valid syntax	1. Click Login button. 2. Enter valid email 3. Enter valid password type & Press Login	Login into that account should be successful	As expected	Pass
TU02	Check Librarian Login process with invalid passwords (using less than 4 characters)	1. Follow Test Steps 1-3 (TU01) 2. Enter invalid Password (less than 4 characters) 2. Press Login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU03	Check Librarian Login process with invalid passwords (using wrong passwords)	1. Follow Test Steps 1-3 (TU01) 2. Enter wrong Password 3. Press login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU04	Check Librarian Login process without filling the input boxes	1. Follow Test Steps 1-2 (TU01) 2. Press Login	Error message pops up saying 'input boxes cannot be empty'	As expected	Pass

3.7.4 3 LOGIN into system as a Admin

Figure: Test cases for LOGIN into system as a Admin

Test Case ID	Test Scenario	Test Steps	Expected Results	Actual Result	Pass Fail
TU01	Check Admin Login process in valid syntax	1. Click Login button. 2.Enter valid email 3.Enter valid password type & Press Login	Login into that account should be successful	As expected	Pass
TU02	Check Admin Login process with invalid passwords (using less than 4 characters)	1.Follow Test Steps 1-3 (TU01) 2.Enter invalid Password (less than 4 characters) 3.Press Login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU03	Check Admin Login process with invalid passwords (using wrong passwords)	1. Follow Test Steps 1-3 (TU01) 2.Enter wrong Password 3. Press login	An Error message should pop up saying 'email password did not match'	As expected	Pass
TU04	Check Admin Login process without filling the input boxes	1. Follow Test Steps 1-2 (TU01) 2.Press Login	Error message pops up saying 'input boxes cannot be empty'	As expected	Pass

3.7.5 Edit / Delete

Figure: Test cases for Update Profile

Test Case ID	Test Case Scenario	Test Steps	Expected Results	Actual results	Pass / Fail
TU01	Check all in Valid syntax with photo changing	1.Sign in as a Teacher/student Account. 2.Go to profile & photo uploaded 3. Click Edit picture. 4.Change Picture	The post image should be successfully Changed.	As	Pass
TU02	Check all in Invalid syntax without photo changing	1.Follow Test Steps 1-2 of TU01 2. Click Submit.	The image should be not successfully Changed.	As expected	Pass
TU03	Check all in valid syntax (attendance)	1.Sign in as a Teacher Account. 2.Go to Class and Select attendance 3. Choose any student 4.Remark	Attendance should be successfully Changed	As expected	Pass

Chapter 4: Project Management

4.1 Project Scheduling

Table 4-A: Project Schedule

Task	Time (week)
Field study	0-1
Study on previous works	1-2
Study on SDLC	2-3
Prepare user story	3-4
Identify user requirements	4-5
Develop Use case diagram	5-6
Develop Activity diagram	5-6
Develop Activity diagram	5-6
Develop Class diagram	5-6
Develop E-R diagram	5-6
Agile	6-8
Create Database	8-10
Create user interface	10-11
Software Development	10-19
Prepare Test plan	11-14
Prepare Test Suit	11-14
Software Testing and Debugging	14-18
Documentation	18-19

5 : CONSTRAINTS

Any update regarding the book from the library is to be recorded to have update & correct values, and any fine on a member should be notified as soon as possible and should be correctly calculated.

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