

Online Library/Bookstore

Software Requirements Specification

Software Engineering Project

Version 1.0



Group Id: SE-PID-06

Group Members: 2018-CS-19, 2018-CS-22, 2018-CS-25

Supervisor Name: Ma'am Taliha

Department of Computer Science
University of Engineering and Technology Lahore

Table of Contents

1	INTRODUCTION	3
1.1	SCOPE	3
1.2	GLOSSARY	3
1.3	TECHNOLOGIES TO BE USED	3
2	GENERAL DESCRIPTION	4
2.1	USER CHARACTERISTICS	4
2.2	GENERAL CONSTRAINTS	4
2.3	ASSUMPTIONS AND DEPENDENCIES	4
3	SPECIFIC REQUIREMENTS	5
3.1	EXTERNAL INTERFACE REQUIREMENTS:	5
3.1.1	<i>User Interfaces</i>	5
3.3	Functional Requirements	12
	a) Use Cases:	13
	b) NON-FUNCTIONAL REQUIREMENTS:	19
4	METHODOLOGY	19
4.1	ADOPTED METHODOLOGY	19
4.2	DIAGRAM OF METHODOLOGY	19
4.3	REASON OF CHOOSING METHODOLOGY	20
5	PROJECT WORK PLAN	20

1 Introduction

The introduction of this SRS document gives us a complete overview of project requirements scope and technologies to be used. The SRS fully describes the complete functionality of the software (what the software will do) and how it would be expected to perform. This software requirements specification lists all sufficient and necessary requirements for the project development. It will briefly describe the system's targeted audiences, system's user interface, functional and non-functional requirements.

1.1 Scope

This Library / Bookstore system will provide people at every stage with books information, online viewing of books and all a lot about books facilities. To create an online bookstore/Library where users can view books and then, can purchase/borrow books base on title, author and subject. It impacts positively on the academic achievement of the students as it helps students/Customers to enhance their study and research skills. This SRS will describe the solution of all problems such as time wasting. It will provide facilities to all users to buy and borrow books from the same platform.

1.2 Glossary

Term	Definition
Stakeholder	Any person with an interest in the project who is not a developer.
User	All System Actor (Admin, User)

1.3 Technologies to be used

Technology	Description
Library Management/ Bookstore	This system will be a web base system where both functionalities of buying / purchasing books will be implemented. This Library / Bookstore system will provide people at every stage with books information, online viewing of books and all a lot about books facilities.
Frontend	The frontend will be on HTML CSS. HTML (Hyper Text Markup Language) is a standardized system for tagging text files. CSS (Cascading Style Sheet) is used to format the layout of web pages. JavaScript is a programming language commonly used in web development. Here, Source code is processed by the client's web browser rather than on the web server.
Backend	The backend will be connected to the Firebase database.

2 General Description

2.1 User Characteristics

The user classes of this system are:

- Admin
- Borrower
- Buyer

All these users must know how to operate a system and should have a basic understanding of English language.

Admin:

Admin should know how to deal with problems like system hanging, crashing and power failure so that he can keep up with the system maintenance. Characteristics of the admin include keeping a record of available books, addition of new books and removal of useless books. In case of a buyer, the admin can edit the price list and keep a record of books available in the bookstore. whereas in case of a borrower, he can allocate the books that are borrowed.

Borrower:

Borrower will check if the book he wants to borrow is available or not. He can check borrowed books and personal information like Book Id, Book Title and Author name etc. As well as he can also submit a request to borrow the required book.

Buyer:

Buyer will check if the book he wants to buy is available or is in stock or not. He can check his purchased book list and personal information like Book Id, Book Title, Author name and Book price etc. As well as he can also submit a request to buy the required book.

2.2 General Constraints

The project operates only in one branch of the library and has no interlinks with other libraries.

2.3 Assumptions & Dependencies

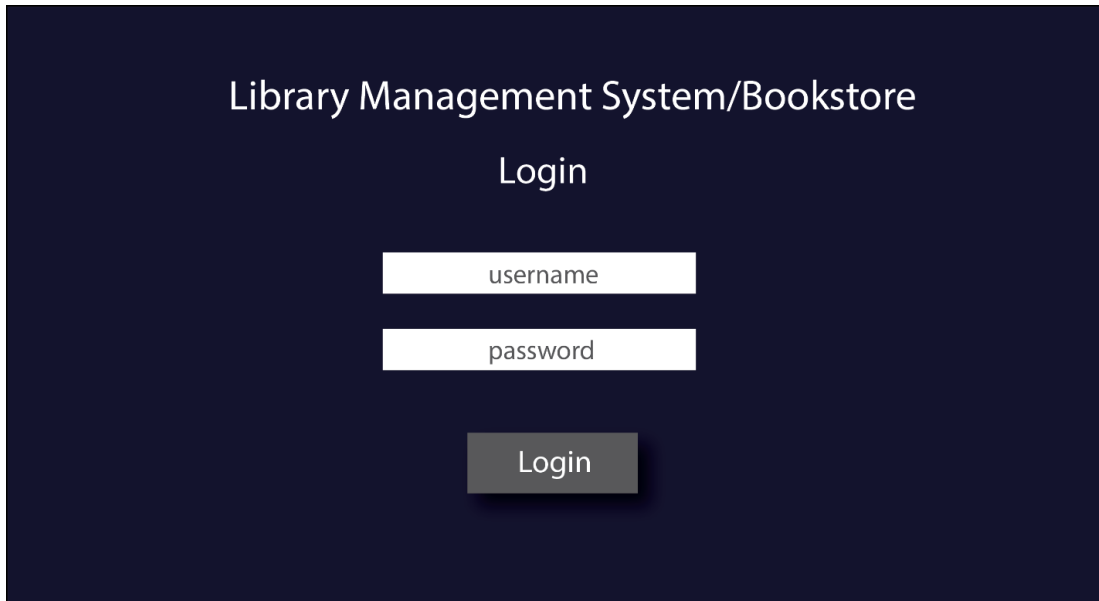
1. Every user must have a stable internet speed to use the system.
2. The user cardinalities will be kept confidential as the accounts contain personal information of users.
3. The system should be capable to work smoothly as there can be a number of users using the system at a time.
4. In case of any system crash, the data records should not be harmed.

3 Specific Requirements

3.1 *External Interface Requirements:*

3.1.1 User Interfaces

Login page:



Library Management System/Bookstore

Login

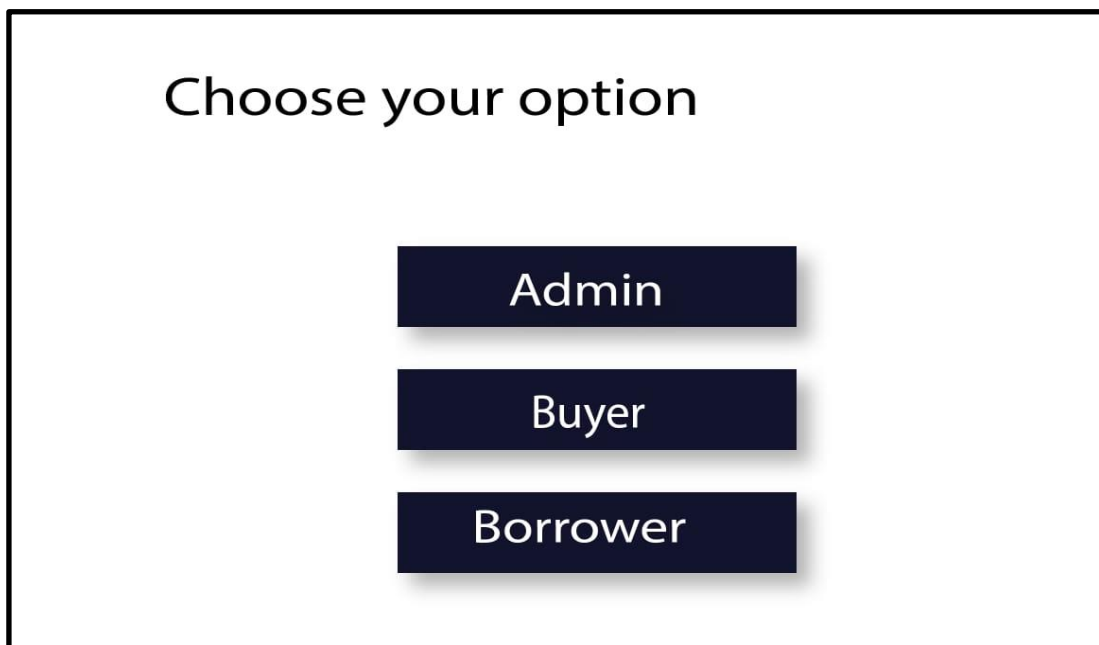
username

password

Login

The login page has a dark blue background. At the top, the text 'Library Management System/Bookstore' is centered in white. Below it, the word 'Login' is also centered in white. There are two white input fields: the first is labeled 'username' and the second is labeled 'password'. Below these fields is a dark grey button with the word 'Login' in white.

Accessibility:



Choose your option

Admin

Buyer

Borrower

The screen has a white background with a black border. At the top, the text 'Choose your option' is centered. Below it are three dark blue buttons with white text, stacked vertically: 'Admin', 'Buyer', and 'Borrower'.

Admin page:

The screenshot displays the 'Admin page' for an 'Online Library and Bookstore'. On the left is a dark blue sidebar with the title 'Admin Section' at the top. Below it are seven menu items, each preceded by a test case identifier (T1 through T7): 'Add Book' (T1), 'View Issued Books' (T2), 'Delete Book' (T3), 'View Users' (T4), 'View Records' (T5), 'Issue Book' (T6), and 'Sell Book' (T7). The main content area has a white background with the title 'Online Library and Bookstore' at the top. Below the title is a form titled 'Add book'. The form contains four input fields: 'Book id', 'Book title', 'Author name', and 'Book price'. At the bottom of the form are two buttons: 'Back' on the left and 'Add' on the right.

Test Case	Admin Section
T1	Add Book
T2	View Issued Books
T3	Delete Book
T4	View Users
T5	View Records
T6	Issue Book
T7	Sell Book

Online Library and Bookstore

Add book

Book id

Book title

Author name

Book price

T1: As an admin, I shall be able to add book in the library/bookstore.

T2: As an admin, I shall be able to view issued book to borrowers.

T3: As an admin, I shall be able to delete/remove book from the library/bookstore.

T4: As an admin, I shall be able to view users of my system.

T5: As an admin, I shall be able to view records.

T6: As an admin, I shall be able to issue book to borrower.

T7: As an admin, I shall be able to sell book from the bookstore.

Add Book page:

Add book

Book id

Book title

Author name

Book price

Back

Add

View Issued Book Page:

View Issued Books			
Book id	Book title	Book price	Date of issue
CS231	Communication	300	2-3-2020
PF131	Programming	500	10-3-2020
PL231	Language	400	8-3-2020
DB231	Database	400	7-3-2020
AI231	Artificial	400	9-3-2020
<div>Back</div>			

Delete Book Page:

Delete book

Book id

Book title

Author name

Book price

Back

Delete

View Users Page:

View Users				
Buyer/ Borrower name	CNIC	Phone no	Issued Book Id	Date
Ayesha	1234567890123	12345612345	CS231	2-3-2020
Asma	1234567890113	12675612345	PF131	10-3-2020
Mehru	1234567890103	12345611345	PL231	8-3-2020
Arslan	1234567890163	12346712345	DB231	7-3-2020
Afaaq	1234567890173	12389612345	AI231	7-5-2020
Back				

View Record Page:

View Record

Book id	Book title	Book price
CS231	Communication	300
PF131	Programming	500
PL231	Language	400
DB231	Database	400
AI231	Artificial	400

Back

Issue Book Page:

Issue book

Borrower name

Book id

Book title

Author name

Book price

Back


Issue

Buy Book Page:

Buy book

Buyer name	<input type="text"/>
Book id	<input type="text"/>
Book title	<input type="text"/>
Author name	<input type="text"/>
Book price	<input type="text"/>

Buyer's Page:



Book Buyer

Name:	<input type="text"/>
Adress:	<input type="text"/>
Phone No.	<input type="text"/>

View Cart Page:

[Back](#)

Your Cart


List of books added in your cart:

Total Price:

Continue Shopping

Proceed to Checkout

Borrower's Page:



Book Borrower

Name:

Phone No.

Date:

Book ID:

Author Name:

Back

Borrow

3.2 Functional Requirements

3.2.1 Admin

1. Admin shall be able to login.
2. Admin shall be able to view records of available books.
3. Admin shall be able to add a new book from the library / bookstore.
4. Admin shall be able to remove any book from the library / bookstore.
5. Admin shall be able to manage buyers (One who purchases books from the bookstore).
6. Admin shall be able to manage borrowers (One who borrows books from the library).
7. Admin shall be able to manage books.
8. Admin shall be able to allocate the books to borrowers according to the book prices.
9. Admin shall be able to sell the books to buyers.
10. In case of borrowing books from the library, the admin shall be able to keep a record (Like Student reg No, Id card, Phone No etc.) of that particular student.

3.2.2 Borrower (Library):

11. The borrower shall be able to login.
12. The borrower/student shall be able to view the book record so that he/she can choose the required book.
13. The borrower shall be able to view the Complete information of any book like Book Id, Book Title, Author name etc.

3.2.3 Buyer (Book Store)

14. Buyer shall be able to login.
15. Buyer shall be able to view the book record so that he/she can purchase the required book.
16. Buyer shall be able to view the complete information of any book like Book Id, Book Title, Author name and Book price etc.

a. Use Cases:

Use Case Title	Login
Use Case Id	1
Requirement Id	1
Description: This use case describes that the user gets access to Library Management System/Bookstore through login process.	
Pre Conditions: 1. Load the “Sign-in” screen.	
Normal Flow	
1. The user browses to the “Sign-in” page.	
<ul style="list-style-type: none"> • The user enters username and password. • The system provides all the required information based on the user class. 	
Alternative Flow	
3a. The data provided is incorrect. <ul style="list-style-type: none"> ○ The system determines that the username or password is incorrect and asks the user to input credentials again. 	
Post Conditions: <ul style="list-style-type: none"> ○ The user is either logged in to the system or fails to log in and is notified. 	
Open issues: If the user is not registered, the he/she needs to wait for one to so that admin can process.	
Authority: Admin, buyer and borrower	

Use Case Title	View books records
Use Case Id	2
Requirement Id	2
Description: This use case is about how admin can keep the record of books.	
Pre Conditions: 1. The user must be logged in as admin. 2. Database should be available. 3. All required information must be available.	
Normal Flow	
1. The user gets to manage the “View record” page.	
<ul style="list-style-type: none"> • System displays a list of books in the system record. 	
Alternative Flow	
2a. Admin views an empty table or some information is missing. User needs to reload the page.	
Post Conditions: <ul style="list-style-type: none"> ○ Records in the database are successfully viewed by the user. 	
Open issues: Database crashes and nothing is appearing on screen.	
Authority: Admin	

Use Case Title	Add a Book
Use Case Id	3
Requirement Id	3
Description: This use case is about how admin can add a book.	
Pre Conditions: <ol style="list-style-type: none"> 1. The user must be logged in as admin. 2. Database should be available. 3. All required information must be available. 	
Normal Flow	
1. Add: The user provides required information to add a book.	
• Add: System confirms after adding data in database.	
Alternative Flow	
1a. The required data is not entered. <ul style="list-style-type: none"> ○ Admin enters the required information. 	
1a. There is a problem in the data provided; some data needs to be corrected. <ul style="list-style-type: none"> ○ Admin checks the available information and corrects the error. 	
Post Conditions: <ul style="list-style-type: none"> ○ Records in the database are added by the user. 	
Open issues: Data is not stored in database due to some issues. Admin needs to refill the requirements in order to process.	
Authority: Admin	

Use Case Title	Remove a Book
Use Case Id	4
Requirement Id	4
Description: This use case is about how admin can remove a book.	
Pre Conditions: <ol style="list-style-type: none"> 1. The user must be logged in as admin. 2. Database should be available. 3. All required information must be available. 	
Normal Flow	
1. Delete: The user removes the book from the system.	
• Delete: System confirms after deleting data in database.	
Alternative Flow	
1a. The required data is not entered. <ul style="list-style-type: none"> ○ Admin enters the required information. 	
1a. There is a problem in the data provided; some data needs to be corrected. <ul style="list-style-type: none"> ○ Admin checks the available information and corrects the error. 	
Post Conditions: <ul style="list-style-type: none"> ○ Records in the database are deleted by the user. 	
Open issues: Data is not deleted from database due to some issues. Admin needs to refill the requirements in order to process.	
Authority: Admin	

Use Case Title	Manage buyers
Use Case Id	5
Requirement Id	5
Description: This use case is about how admin can manage the buyers.	
Pre Conditions: <ol style="list-style-type: none"> 1. The user must be logged in as admin. 2. Database should be available. 3. All required information such as buyers list, sold books list with dates must be available. 	
Normal Flow	
1. The system provides all the required information of buyers.	
Alternative Flow	
1a. A problem occurs in the provided data(related to buyer) , the data needs to be corrected. <ul style="list-style-type: none"> • The user checks the information and corrects the error and continues the process. 	
Post Conditions: <ul style="list-style-type: none"> ○ Records in the database are viewed by the user. 	
Open issues: Due to some internet issues it is difficult to manage buyers and there might be issues of database.	
Authority: Admin	

Use Case Title	Manage borrowers
Use Case Id	6
Requirement Id	6
Description: This use case is about how admin can manage the borrowers.	
Pre Conditions: <ol style="list-style-type: none"> 1. The user must be logged in as admin. 2. Database should be available. 3. All required information such as borrower list, borrowed books list with dates must be available. 	
Normal Flow	
1.The system provides all the required information of borrowers.	
Alternative Flow	
1a. A problem occurs in the provided data(related to the borrower) , the data needs to be corrected. <ul style="list-style-type: none"> • The user checks the information and corrects the error and continues the process. 	
Post Conditions: <ul style="list-style-type: none"> ○ Records in the database are viewed by the user. 	
Open issues: Due to some internet issues it is difficult to manage borrowers and there might be issues of database.	
Authority: Admin	

Use Case Title	Manage books
Use Case Id	7
Requirement Id	7
Description: This use case is about how admin can manage the books.	
Pre Conditions: <ol style="list-style-type: none"> 1. The user must be logged in as admin. 2. Database should be available. 3. All required information such as books(Book id, book title, author name , book price) must be available. 4. No duplication of books in the database. 	
Normal Flow	
1.The system provides all the required information of books.	
Alternative Flow	
1a. A problem occurs in the provided data(related to the book) , the data needs to be corrected. <ul style="list-style-type: none"> • The user checks the information and corrects the error and continues the process. 	
Post Conditions: <ul style="list-style-type: none"> ○ Records in the database are viewed by the user. 	
Open issues: Database crashes and information is not stored in database.	
Authority: Admin	

Use Case Title	Books Allocation
Use Case Id	8
Requirement Id	8
Description: This use case is about how admin can allocate the books to borrowers.	
Pre Conditions: <ol style="list-style-type: none"> 1.The user must be logged in as admin. 2.Admin should have complete required information about the borrower. 3.All required information must be available. 4.The Database should be available. 	
Normal Flow	
1. The admin gets the “Borrow Books” screen.	
<ul style="list-style-type: none"> • Borrow: User provides required information(about books and borrower) to allocate a book. 	
3. Borrow: The system after confirmation, allocates the book to the borrower.	
Alternative Flow	
2a. The required data is not entered. <ul style="list-style-type: none"> ○ Admin enters the required information. 	
2a. There is a problem in the data provided; some data needs to be corrected. <ul style="list-style-type: none"> ○ Admin checks the available information and corrects the error. 	
Post Conditions: <ul style="list-style-type: none"> ○ The required book is allocated to the borrower. 	
Open issues: Books are not allocated to the user due to some database crashes issues.	
Authority: Admin	

Use Case Title	Books Selling
Use Case Id	9
Requirement Id	9
Description: This use case is about how admin can sell the books to buyers according to book prices.	
Pre Conditions: <ol style="list-style-type: none"> 1.The user must be logged in as admin. 2.Admin should have complete required information about the buyer. 3.All required information must be available. 4.The Database should be available. 	
Normal Flow	
1. The admin gets the “Sell Books” screen.	
2. Sell: User provides required information (about books and buyer) to allocate a book.	
3. Sell: The system after confirmation, sells the book to the buyer.	
Alternative Flow	
2a. The required data is not entered. <ul style="list-style-type: none"> o Admin enters the required information. 	
2a. There is a problem in the data provided; some data needs to be corrected. <ul style="list-style-type: none"> o Admin checks the available information and corrects the error. 	
Post Conditions: <ul style="list-style-type: none"> o The required book is sold to the buyer. 	
Open issues:	
Authority: Admin	

Use Case Title	View System Record
Use Case Id	10
Requirement Id	10
Description: This use case is about how admin can view the record of system.	
Pre Conditions: <ol style="list-style-type: none"> 1. The user must be logged in as admin. 2. Database should be available. 3. All required information must be available. 	
Normal Flow	
1. The user gets to manage the “View System record” page.	
2. System displays a list of students who borrowed books in the system record.	
Alternative Flow	
2a. Admin views an empty table or some information is missing. User needs to reload the page.	
Post Conditions: <ul style="list-style-type: none"> o Records in the database are successfully viewed by the user. 	
Open issues: Database crashes and nothing is appearing on screen.	
Authority: Admin	

Use Case Title	Borrower View Books
Use Case Id	11
Requirement Id	11
Description: This use case is about how a borrower can view books that are available to borrow.	
Pre Conditions:	
1. The user must be logged in as a borrower.	
2. The user must open the view books page.	
3. Database should be available.	
Normal Flow	
1. The borrower gets the “View Books” screen.	
2. System shows necessary information to the borrower for each book.	
3. Borrower views each book price, Id and author name on the screen.	
4. Borrowers can go back to the previous page by clicking Back.	
5. System shows the previous screen when the borrower clicks on the Back button.	
Alternative Flow	
2a. Borrower views an empty table or some information is missing. Borrower needs to reload the page.	
4a. By clicking on Back button the user cannot see the previous screen.	
Post Conditions:	
○ The user gets all information about available books.	
Open issues: Database crashes and nothing is appearing on screen.	
Authority: Borrower	

Use Case Title	Buyer View Books Record
Use Case Id	12
Requirement Id	12
Description: This use case is about how a buyer can view book records to purchase a book.	
Pre Conditions:	
1. The user must be logged in as a buyer.	
2. The user must open the view Records page.	
3. Database should be available.	
Normal Flow	
1. The buyer gets the “View Records” screen.	
2. System shows necessary information to the buyer for the books that have already been bought by the user.	
3. Buyer views book price, Id and author name on the screen.	
4. Buyer can go back to the previous page by clicking Back.	
5. System shows the previous screen when the buyer clicks on the Back button.	
Alternative Flow	
2a. Buyer views an empty table or some information is missing. Buyer needs to reload the page.	
4a. By clicking on Back button, the user cannot see the previous screen.	
Post Conditions:	

○ The user gets all information about the books that users bought before.
Open issues: Database crashes and nothing is appearing on screen.
Authority: Buyer

b. Non Functional Requirements:

- **Large Data**

The system must not crash for the safety of record as it will deal with large amounts of data.

- **Speed Efficiency**

The speed of the system will depend on the connection speed of the user and not on the system functionalities.

- **Interface easy to use**

The system will provide an interface that is easy to use and does not need any further training.

- **Accessible on Web**

As it is a web application, so the user must have an internet facility (User must be connected to a strong internet).

- **Managing Accounts**

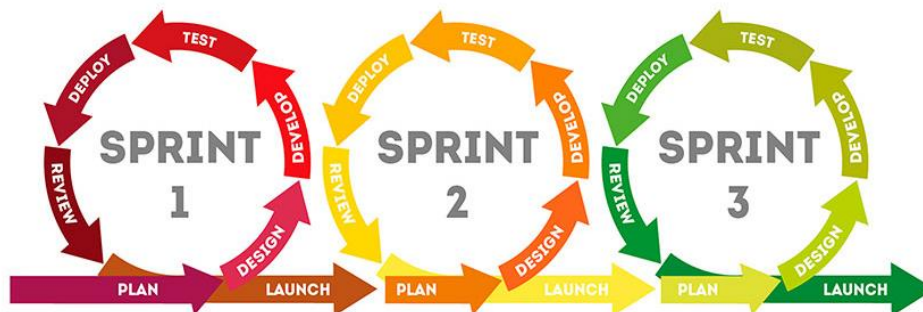
As the system has a requirement that the user must have to login to start the application. So, when the user logs in the system will have to provide all the functionalities related to it.

14. Methodology

a. Adopted Methodology

The methodology we are going to use for this project is Agile Model. Libraries must continually adapt to meet the ever-changing needs of users. Doing so requires the ability to be flexible and respond quickly. In general, the agile development process means an incremental work process that promotes the importance of customer satisfaction, collaboration, communication, teamwork, good quality and planned follow-up practices.

b. Diagram of Methodology



c. Reason of Choosing Methodology

Following are the reasons for choosing Agile model Methodology:

- Changings requested by customers are always accepted during any phase of the product.
- It supports team-building and teamwork.
- Rapid delivery of the working product leads to customer satisfaction.
- Continuous testing.
- Attention is paid to the good design of the product.

15. Project Work Plan

The Gantt chart of our project is given below:

