Software Requirements Specification for a Online Book-Store and Exchanging Application.

Project : Bookbin

nurolmahadi0132@gmail.com

 Daffodil Smart City, Ashulia Savar

Version 3.0

PROJECT NAME : BOOKBIN

1. PROJECT OVERVIEW

An online Book Exchanging Platform. Users have to create an account and log in. Afterwards they can log in to their accounts and display their books for exchanging and put on requests.

- BookBin is a online book exchanging app.

- Users can search though libraries and purchase new books like any other normal online book store. But the main focus of this app is exchanging books between users.

- Users would have to create accounts and can build their own profile. They can display what books they have for exchanging and also what books they are searching for.

- Users can buy, sell, exchange books.

- Users can interact with each other, talk and negotiate with each other while exchanging (like any social media app).

- The app also has E-Book options. Users will have an option to subscribe to a yearly subscription system for the E-Book section. The yearly subscription includes access to all of the E-Books in the E-Book library section. However, users without the subscription will have to buy each E-Book they want to access and download.

- We won't have any physical location to store books. Every exchange would be done through users.

- Selling point of the new books would be libraries that we are partnered with. Thus, when any user puts on a order to buy books, that order would be placed to the libraries that we are partnered with and they will process that order. The users can also request books from the libraries if their stock don't have those certain books.

1.1 INTENDED AUDIENCE

Bookbin is designed for a diverse audience, including:

- Faculty Members.

- Casual Book readers.

- Academic Students.

- Dashboard
  - Home
  - Events
  - Properties
    - On Click A Properties View Project Details
      - Exchange
      - Buy Now
      - Cart
  - Contact
  - Login
- Application System
  - User

- Login

  - User Id and Password are provide by admin

- Payment Status

- Payment History

- Exchange History

- Cart

- Download Receipt

○ Admin

  - Create User

  - Submit User Payment

  - See User Payment Status

  - Payment History

  - Generated Receipt

3. TECHNOLOGY REQUIREMENTS (APPLICATION AND HARDWARE)

- Framework: JFrame.

- Database: MySQL.

- Design: Standard.

- Coding Architecture: OOP.

- Security: Standard.

5. SPECIFIC REQUIREMENTS

5.1. USER REGISTRATION AND AUTHENTICATION:

- Users can sign up using email, social media accounts.

- Secure authentication mechanisms for user safety.

5.2. USER PROFILES:

- Users can create profiles with profile pictures, bios, and personal preferences.

- Users can customize their account based on their preference of books and genre.

- AI-driven profile overview based on user's search and preferences.

5.3. INTERACTION AND ENGAGEMENT:

- Comments, and reviews are available for everyone.

- Live chat interactions for negotiations and book quality.

5.4. SEARCH AND DISCOVERY:

- Users can search for specific books, genres, or authors.

- AI-driven recommendations suggest relevant books based on user preferences.

5.5 NOTIFICATIONS:

- Users receive notifications for new books, followers, and interactions.

- Customizable notification settings ensure user control.

6.SYSTEM REQUIREMENTS

- Platform Compatibility : iOS, Android, Windows, and macOS platform compatibility.

- Internet Connection.

Accessibility: The app should conform to accessibility standards, ensuring usability for all users.

7. DATA MANAGEMENT

- User Data : Store user profiles, authentication credentials, and interaction history securely.

- Interaction Data : Store chat messages, comments, reactions, and analytics data.

8. SDLC

SDLC is a process followed for a software project, within a software organization. It consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software. The life cycle defines a methodology for improving the quality of software and the overall development process.

8.1 SOFTWARE DEVELOPMENT METHODOLOGIES

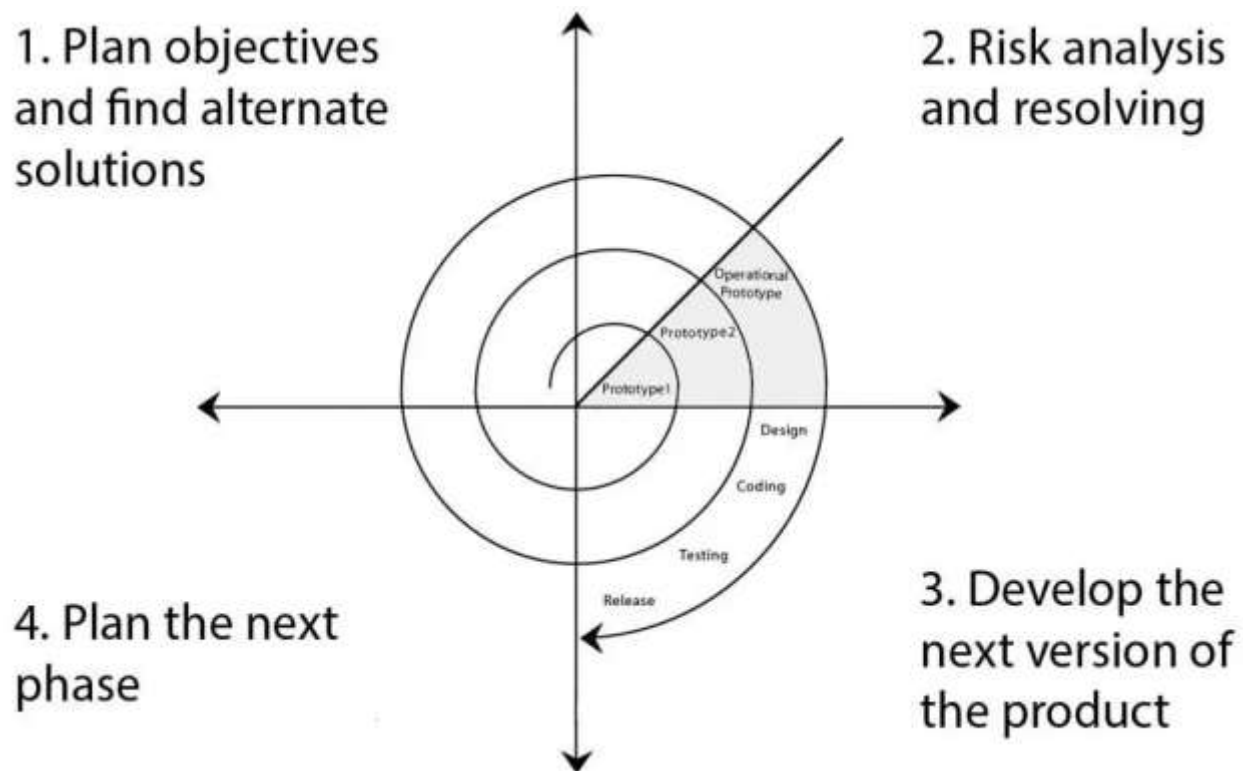## 8.1.1 WATERFALL MODEL

Waterfall model
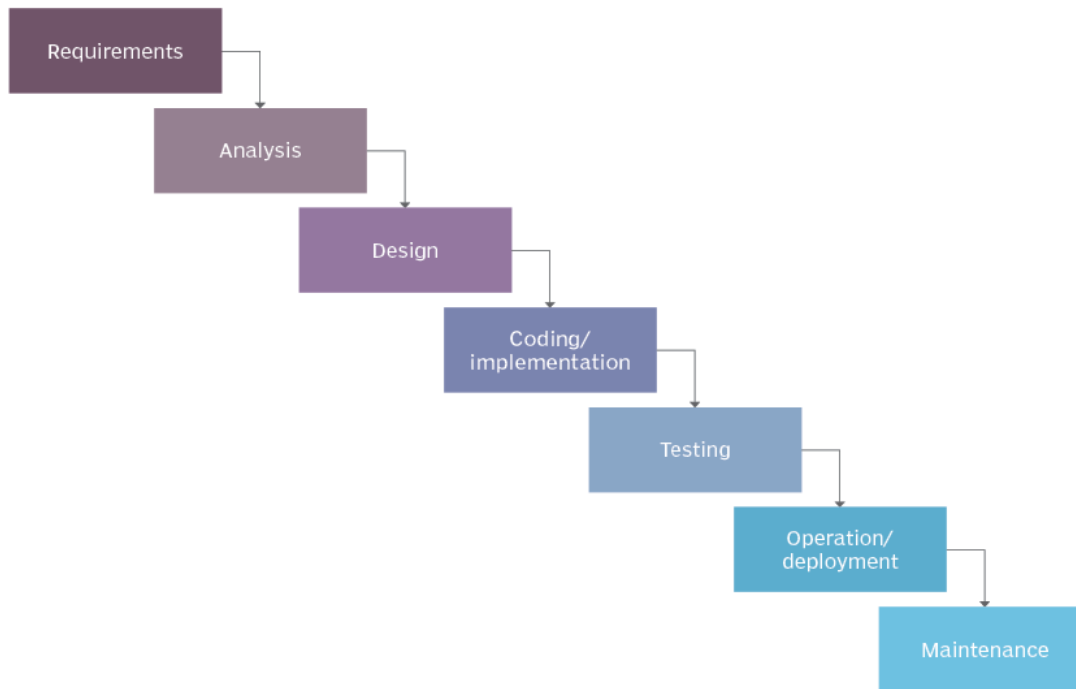
Waterfall model uses a sequential steps for a project, similar to the fall of water from a cliff. This SDLC model divides the life cycle into a set of phases. And these phases can't be revisited afterwards. That is the output of one phase will be the input to the next phase. Thus the development process can be considered as a sequential flow of the waterfall.

8.1.1.1 PROS AND CONS OF WATERFALL METHODOLOGY

Advantages	Disadvantages
Simple and easy to understand	No working software is produced until late during the life cycle.
Works well for smaller projects where requirements are very well understood.	Cannot accommodate changing requirements
Easy to manage due to the rigidity of the model.	High amounts of risk and uncertainty.
. Each phase has specific deliverables and a review process	Adjusting scope during the life cycle can end a project
Phases are processed and completed one at a time.	Not a good model for complex and object-oriented projects.
Well understood milestones	
Works well for smaller projects where requirements are very well understood.	Poor model for long and ongoing projects.

8.1.2 SPIRAL MODEL

1. Plan objectives and find alternate solutions

2. Risk analysis and resolving

3. Develop the next version of the product

4. Plan the next phase

Operational Prototype
Prototype2
Prototype1
Design
Coding
Testing
Release

A Spiral Model of Software Development and Enhancement as an iterative and risk-driven model of software development. The entire process of development is divided into four different stages which keep on repeating until the entire project is completed. These stages are determining objectives, evaluating risks, developing the product and planning the next phase. This entire process is represented in a spiral diagram and thus known as the spiral model. The Spiral Model provides support for risk handling. In its diagrammatic representation, it looks like a spiral with many loops. The exact number of loops of the spiral is unknown and can vary from project to project. Each loop of the spiral is called a Phase of the software development process.

8.1.2.1 PROS AND CONS OF SPIRAL METHODOLOGY

Advantages	Disadvantages
Changing requirements can be accommodated.	Management is more complex.
Users see the system early	Process is complex
Allows extensive use of prototypes.	End of the project may not be known early.
Development can be divided into smaller parts and the risky parts can be developed earlier which helps in better risk management.	Spiral may go on indefinitely
Requirements can be captured more accurately.	Not suitable for small or low risk projects and could be expensive for small projects.

8.1.3.0 ITERATIVE MODEL
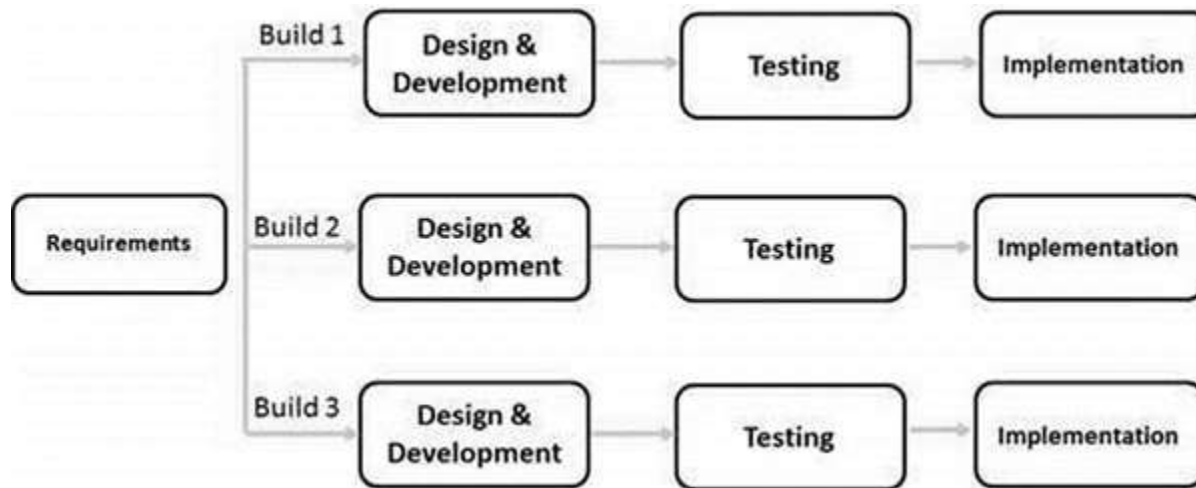
The Iterative model is all about repetition. Instead of starting out with a comprehensive overview of the requirements, development teams build the software piece by piece and identify further requirements as they go along. As a result, each new phase in the Iterative model produces a newer, more-refined version of the software under development.

Iterative allows developers and testers to identify functional or design flaws early, and can easily adapt to the ever-changing needs of the client. Like Spiral, Iterative suits larger projects and requires more management and oversight to work well.

8.1.3.1 PROS AND CONS OF ITERATIVE METHODOLOGY

Advantages	Disadvantages
Results are obtained early and periodically.	More resources may be required.
With every increment, operational product is delivered.	Defining increments may require definition of the complete system.

Parallel development can be planned.	Although cost of change is lesser, but it is not very suitable for changing requirements.
Testing and debugging during smaller iteration is easy.	System architecture or design issues may arise because not all requirements are gathered in the beginning of the entire life cycle.
With every increment, operational product is delivered.	More management attention is required.
Results are obtained early and periodically.	

8.1.4.0 V-MODEL
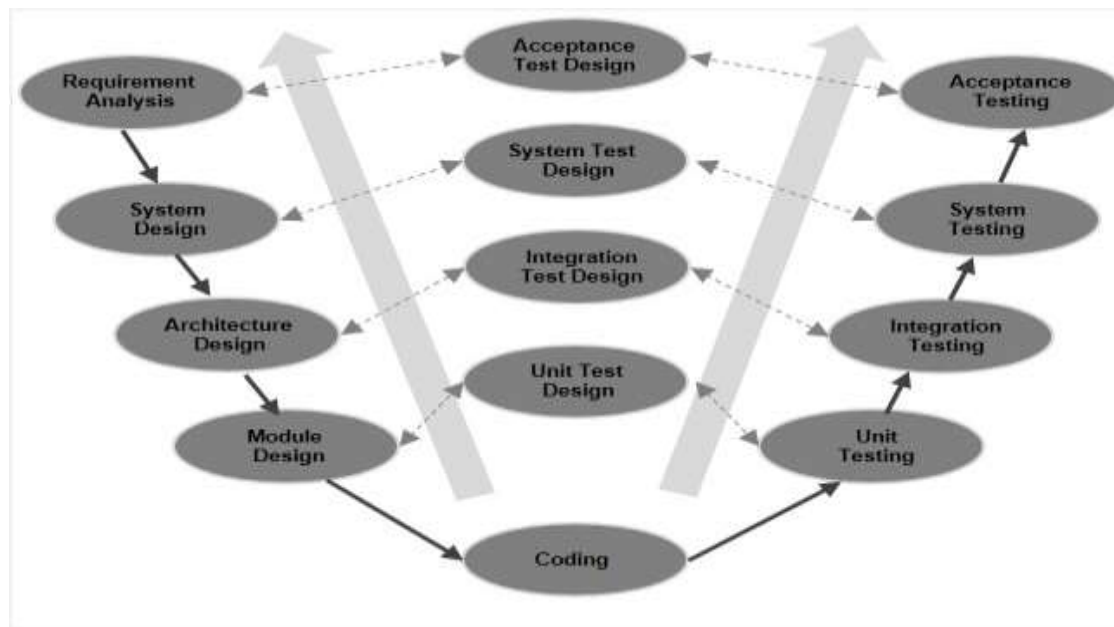
Similar to the waterfall methodology where testing is done at the end of a project, with the V-model, testing happens at every stage of development. The next stage of the V-model starts only when the previous stage is entirely finished.As part of the V-Model, a software tester has to verify if the requirements of a specific development phase are met. They also have to validate that the system meets the needs of the user, customer or other stakeholders, which includes both verifications and validations.

8.1.4.1 PROS AND CONS OF V-MODEL METHODOLOGY

Advantages	Disadvantages
This is a highly-disciplined model and Phases are completed one at a time.	High risk and uncertainty.
Works well for smaller projects where requirements are very well understood.	Not a good model for complex and object-oriented projects.
Simple and easy to understand and use.	Poor model for long and ongoing projects.
Easy to manage due to the rigidity of the model. Each phase has specific deliverables and a review process.	Not suitable for the projects where requirements are at a moderate to high risk of changing.

8.1.5.0 AGILE MODEL

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product. Agile Methods break the product into small incremental builds. These builds are provided in iterations

8.1.5.1 ADVANTAGES OF AGILE METHODOLOGY

- Is a very realistic approach to software development.
- Promotes teamwork and cross training.
- Functionality can be developed rapidly and demonstrated.
- Resource requirements are minimum.
- Suitable for fixed or changing requirements
- Delivers early partial working solutions.
- Good model for environments that change steadily.
- Minimal rules, documentation easily employed.
- Enables concurrent development and delivery within an overall planned context.
- Little or no planning required.
- Easy to manage.
- Gives flexibility to developers.

8.1.6.0 RAD (RAPID APPLICATION DEVELOPMENT) MODEL

Rapid application development is a software development methodology that uses minimal planning in favor of rapid prototyping. A prototype is a working model that is functionally equivalent to a component of the product.

In the RAD model, the functional modules are developed in parallel as prototypes and are integrated to make the complete product for faster product delivery. Since there is no detailed preplanning, it makes it easier to incorporate the changes within the development process.

RAD projects follow iterative and incremental model and have small teams comprising of developers, domain experts, customer representatives and other IT resources working progressively on their component or prototype.

The most important aspect for this model to be successful is to make sure that the prototypes developed are reusable.

9.0 AGILE MODEL FOR BOOKBIN APPLICATION DEVELOPMENT

Agile uses an adaptive approach where there is no detailed planning and there is clarity on future tasks only in respect of what features need to be developed. There is feature driven development and the team adapts to the changing product requirements dynamically. The product is tested very frequently, through the release iterations, minimizing the risk of any major failures in future.

Customer Interaction is the backbone of this Agile methodology, and open communication with minimum documentation are the typical features of Agile development environment. The agile teams work in close collaboration with each other and are most often located in the same geographical location

9.1 WHY AGILE IS SUITABLE.

Agile is based on the adaptive software development methods, whereas the traditional SDLC models like the waterfall model is based on a predictive approach. Predictive teams in the traditional SDLC models usually work with detailed planning and have a complete forecast of the exact tasks and features to be delivered in the next few months or during the product life cycle.

Predictive methods entirely depend on the requirement analysis and planning done in the beginning of cycle. Any changes to be incorporated go through a strict change control management and prioritization.

Agile uses an adaptive approach where there is no detailed planning and there is clarity on future tasks only in respect of what features need to be developed. There is feature driven development and the team adapts to the changing product requirements dynamically. The product is tested very frequently, through the release iterations, minimizing the risk of any major failures in future.
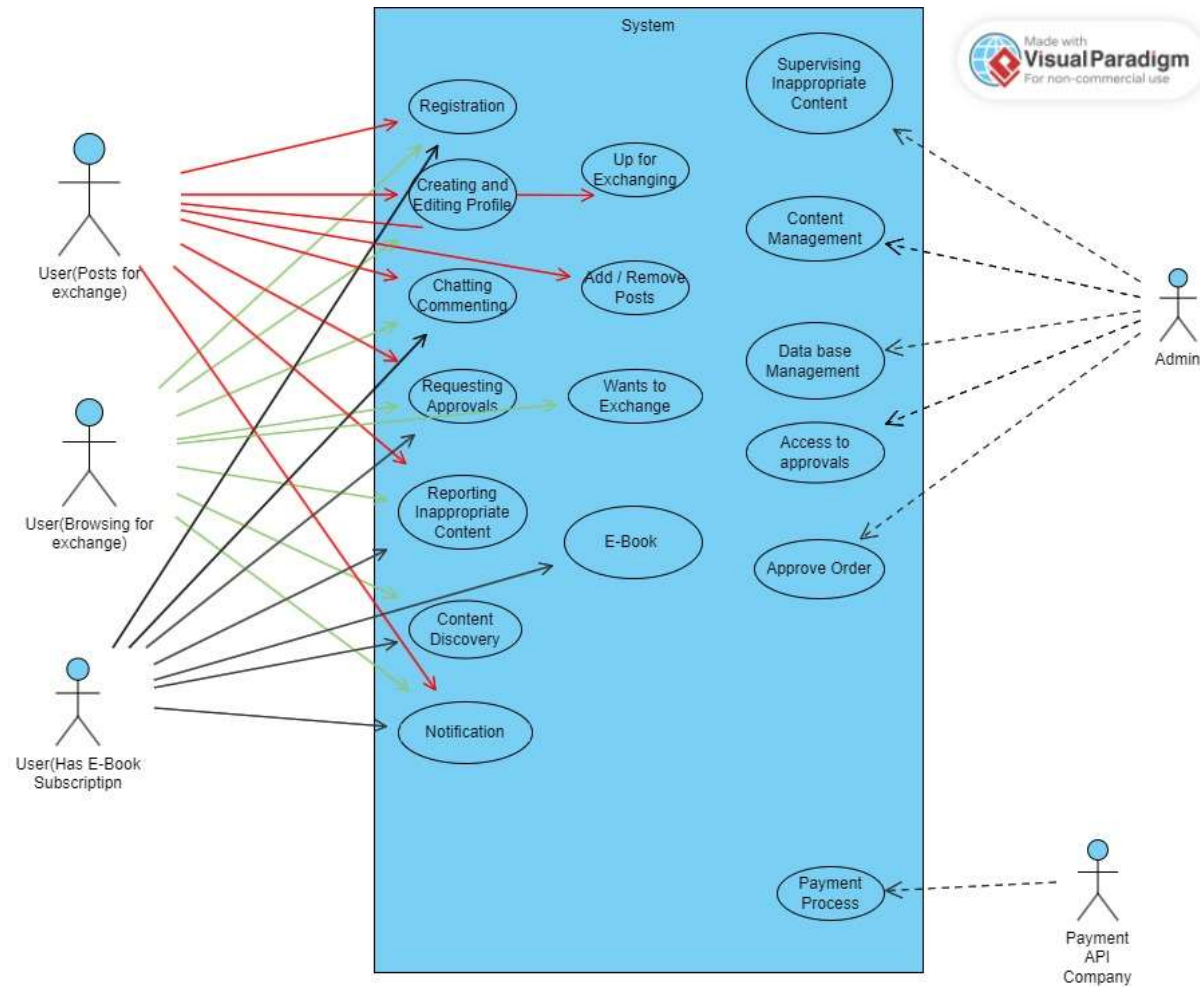
Customer Interaction is the backbone of this Agile methodology, and open communication with minimum documentation are the typical features of Agile development environment. The agile teams work in close collaboration with each other and are most often located in the same geographical location.

9.3 AGILE VS LEAN
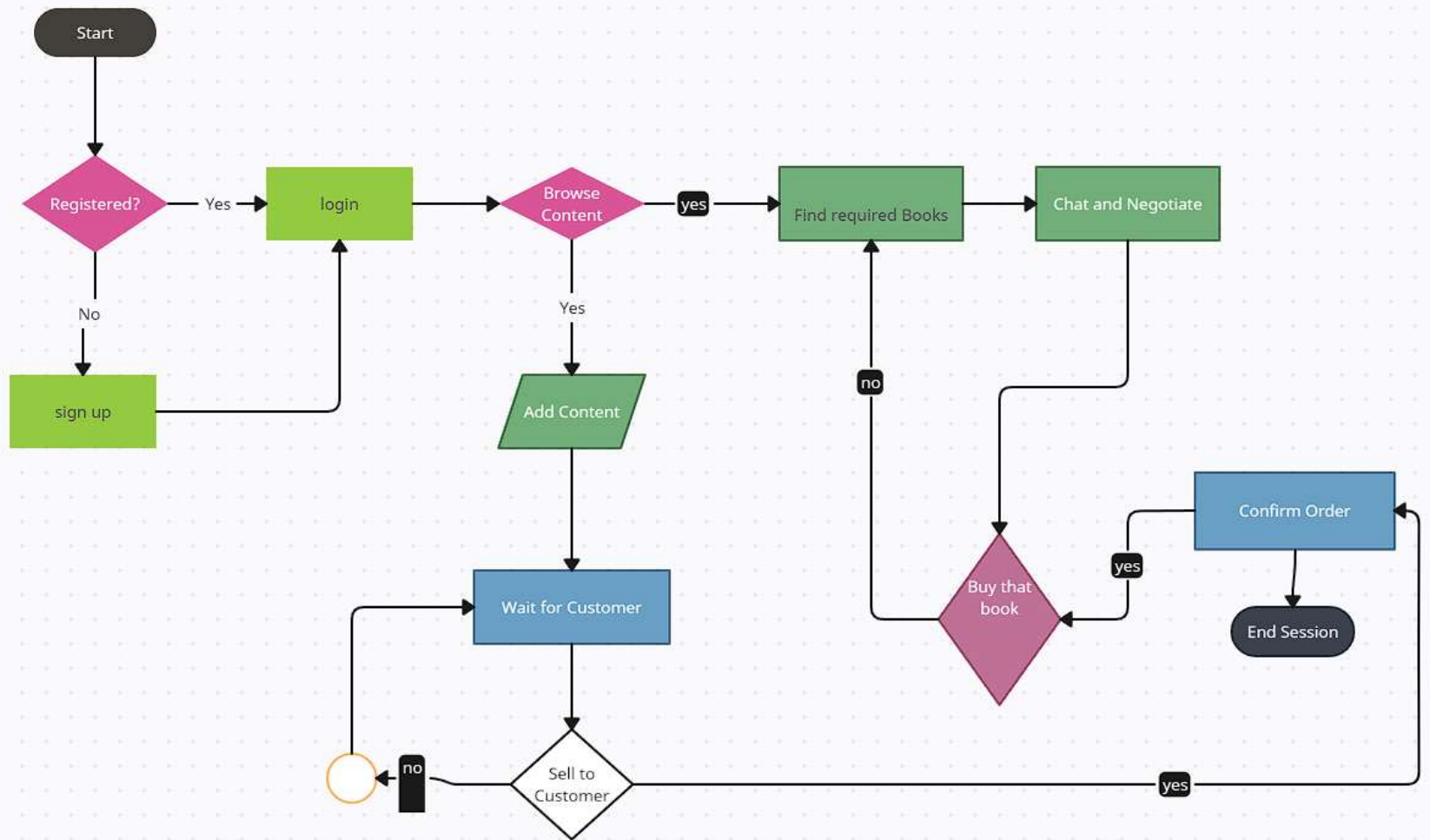
- Frequent Change and Uncertainty: Agile is particularly effective in environments where requirements change frequently, and there is a need for flexibility and rapid adaptation to customer feedback.

- Customer Collaboration: Having direct access to customers or end-users who can provide continuous feedback and you want to involve them closely in the development process, Agile's customer-centric approach is beneficial.

- Iterative and Incremental Delivery: Delivering incremental value in short iterations aligns with your project's goals and stakeholder expectations, Agile is a good choice.

- Cross Functional Team : Agile teams are typically cross-functional, with members responsible for various aspects of the app.

- Adaptability : Well suited to projects with evolving requirements. Allows for flexibility in responding to changing user needs.

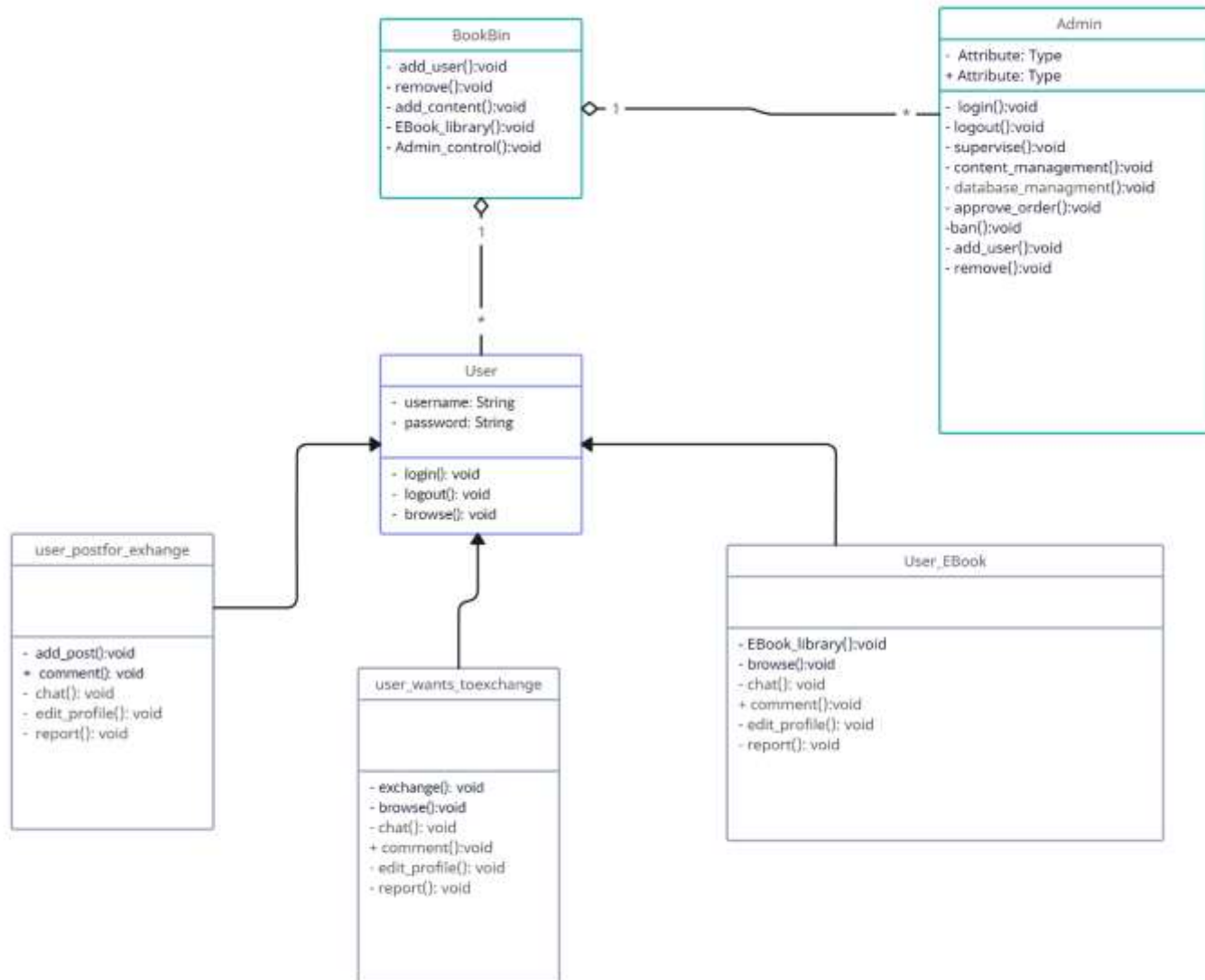- Provides a dynamic environment with evolving user needs .

10. DIAGRAMS

10.1 USE CASE

10.2 FLOWCHART

10.3 UML DIAGRAM

BookBin

- add_user():void
- remove():void
- add_content():void
- EBook_library():void
- Admin_control():void

Admin

- Attribute: Type
+ Attribute: Type

- login():void
- logout():void
- supervise():void
- content_management():void
- database_managment():void
- approve_order():void
- ban():void
- add_user():void
- remove():void

User

- username: String
- password: String

- login(): void
- logout(): void
- browse(): void

user_postfor_exchange

- add_post():void
+ comment(): void
- chat(): void
- edit_profile(): void
- report(): void

user_wants_toexchange

- exchange(): void
- browse():void
- chat(): void
+ comment():void
- edit_profile(): void
- report(): void

User_EBook

- EBook_library():void
- browse():void
- chat(): void
+ comment():void
- edit_profile(): void
- report(): void

11.MILESTONES AND REPORTING

Milestone	Tasks	Reporting	Time
Analysis		Design Submission	3 days
Requirements Collection	Data Submission		7 days
Development Stage		Work Review	30 days
Testing Stage	Testing before Deployment		10 days
Deployment Stage	Server Deployment Process	Review Final Work	5 days
Delivery		Activation of Live Server	5 days

12. DEPLOYMENT

The Application would be based on the requirements given by your company. During the development stage we would focus on researching and developing the project. The client would have to pay according to their needs and necessities.

13. PRICING

Our fee for seeing the project through from start to completion will be Twenty Thousand Taka only (20000Tk).

14. PAYMENT TERMS

We propose the following payment terms:

10% (10%)

Paid on acceptance of this proposal.

40% (50%)

Paid on signing of our Application development agreement.

25% (75%)

Paid at 70% Application Demonstration.

25% (100%)

Paid at completion the Application.

15. SUPPORT

24/7 support system.

16. CONTACT

Phone:

+8801721716297

MD Nurol Amin

Email

nurolmahadi0132@gmail.com

Website

www.XYZ.com

By post

Room-E_517, Younus Khan Scholars Garden, Old Building

Daffodil Smart City,

Ashulia Savar, Dhaka

We look forward to hearing from you soon!

Agreement Signed By:

………………………

Client Signature

NUR ALVI

Managing Director

ABC

…………………………
…

Authority Signature

MD Nurol Amin

Managing Director

XYZ