LONDON METROPOLITAN UNIVERSITY

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A Proposal on

"Online Bookstore System"

Assessment weightage

5%

Year and Semester

2024/25

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I confirm that I understand my coursework needs to be submitted online via Mysecondteacher under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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1. **INTRODUCTION**

Successful online platforms in today's digital environment are defined by their ability to meet the growing need for specific user experiences. Growing e-commerce platforms, such as online bookstores where customers may explore, buy, and review books, are a result of the growing trend of online buying. However, consumers may find it hard to locate books that fit their unique interests due to the constantly growing number of titles. By creating an online bookstore that optimizes book discovery and offers a smooth, engaging purchase experience, our project attempts to address these issues.

Fanatic Books will offer personalized user profiles to track reading history, manage orders, and adjust book preferences. A recommendation system will suggest titles based on user preferences and past purchases, ensuring a tailored experience. The platform will feature a user-friendly interface, with genre-based filtering for easy book discovery, multiple payment options for convenience, and strong data protection measures to ensure user privacy and security.

1.1. Problem Scenario and Solution

For readers, the wealth of digital content, especially books, has produced a broad and rather scary environment. It might be difficult to locate books that fit unique interests and preferences among the millions of publications that are accessible. Conventional online booksellers frequently depend on basic search features and a small number of browsing categories, which might not be sufficient to adapt to consumers' various and refined interests. Here are some issues face by many customers or users:

1.1.1. Information Overload and Ineffective Book Discovery:

With millions of selections, online booksellers such as Amazon provide a huge quantity of titles, which can lead to information overload. Users find it difficult to locate books that suit their particular likes because the majority of conventional online booksellers only provide basic filtering options (such as by genre or author), and restricted suggestions based on general popularity.

Solution:

Bookstores may assist customers in navigating the enormous range of titles and making informed choices by classifying books into certain genres or topics, promoting user reviews and suggestions, offering extensive search tools, and integrating graphic features.

1.1.2. Lack of Personalization in Recommendations:

Although smaller online booksellers sometimes do not have effective recommendation systems. When customers buy a wide variety of books, for example, they could get suggestions that are overly limited and only consider recent purchases rather than interests as a whole. (Wilkie, 2022)

Solution:

Make advantage of both user behavior and book qualities to deliver ideas that are more specific. Collect data on reading preferences, demographics, interests, and reading history of the user. Consider variables including location, time of day, and recent browsing history. To improve suggestions, include data from Goodreads, Library Thing, and other book-related websites.

1.1.3. Related projects

- **Books Mandala**

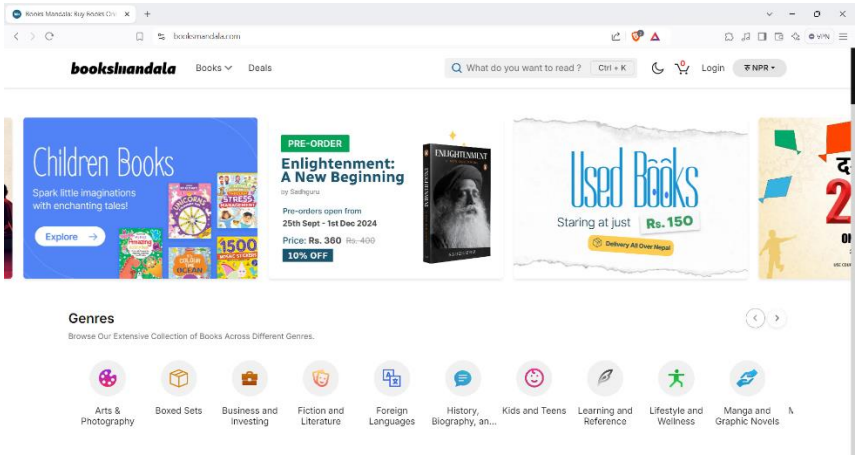

Figure 1: Books mandala Home page

This webapp is a Nepal-based online bookshop named Books Mandala. Customers may browse and buy a range of books online, and delivery to all countries is an option. In addition to fiction, non-fiction, and children's books, the bookshop offers both new and old books in a range of categories. In order to obtain exclusive offers and information, customers may also pre-purchase accessible publications and subscribe to a magazine.

- **Biblionepal**

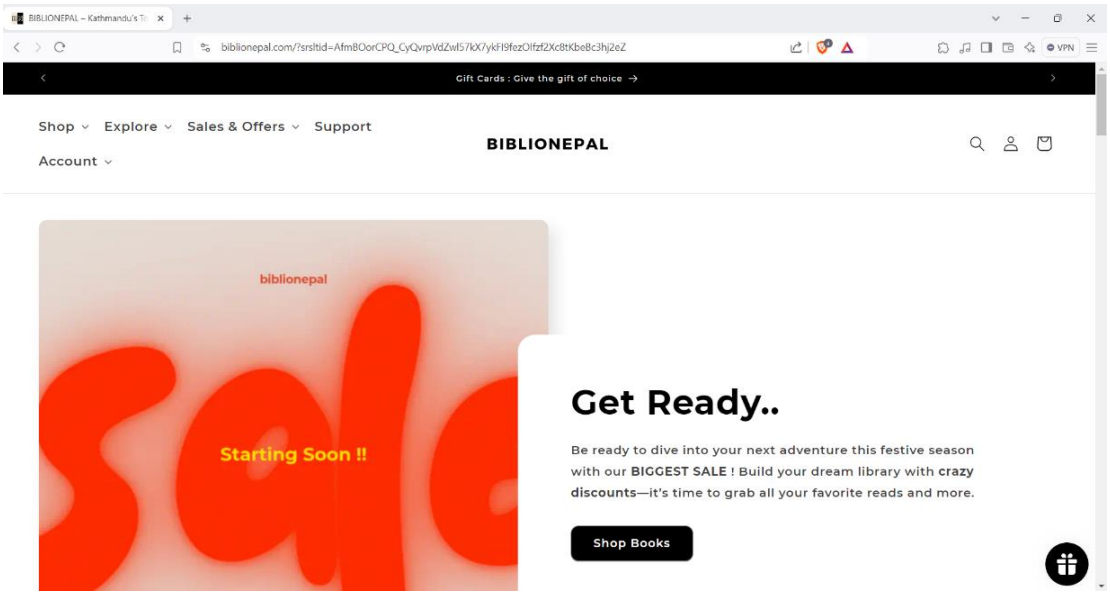

Figure 2: Biblionepal Home page

Biblionepal is an online bookstore that operates on the web. Nepal's Kathmandu serves as its headquarters. Classics, fiction, and non-fiction works are all available in a sizable collection from them. Alternatively, you may browse their selection by category or use the search bar to find certain titles. An additional option is to use a gift card.

- **Foomantra**

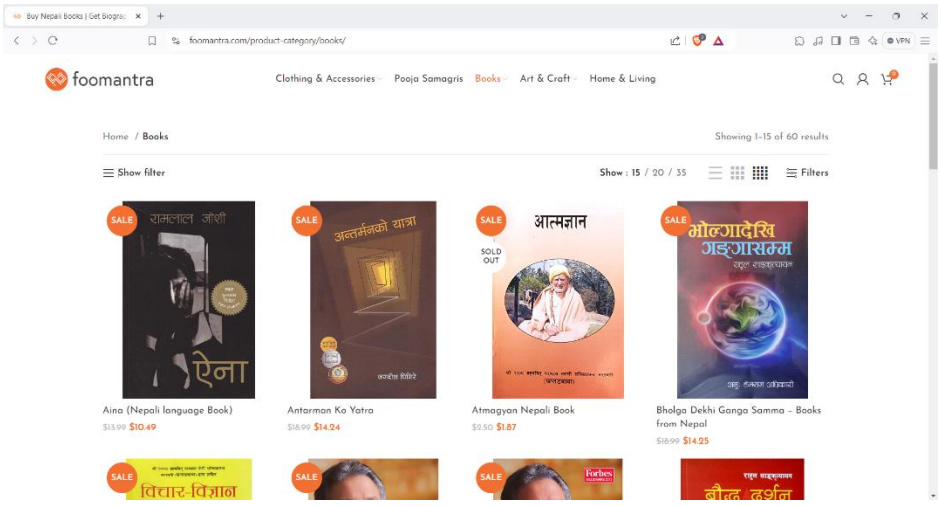

Figure 3: Foomantra Home page

Users can read reviews from other customers who have purchased the books. You can create a wish list of books that you're interested in purchasing. The store offers shipping to customers in Nepal. You can contact the store with any questions or concerns.

- **Bizmandala**

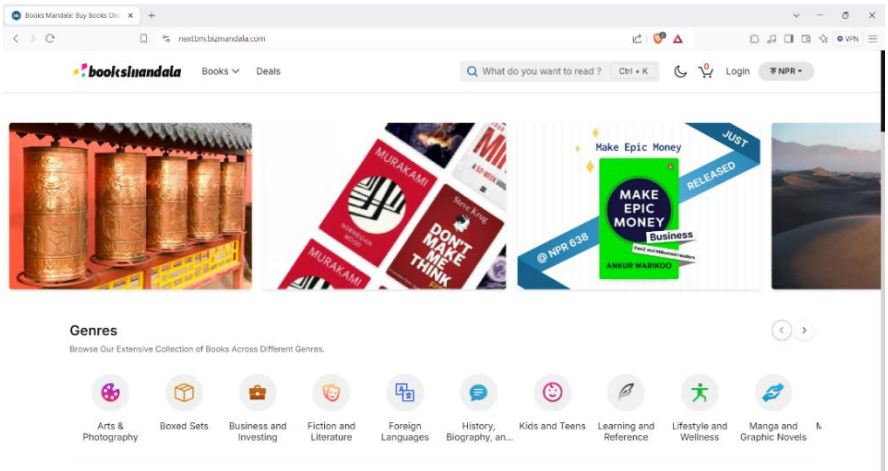

Figure 4: Bizmandala Home page

This article describes a book-selling website. It features a secondhand book area and talks about books according to category. Other products, such CDs and coffee table books, are also available on the website. On the website, books may be preordered.

Thuprai

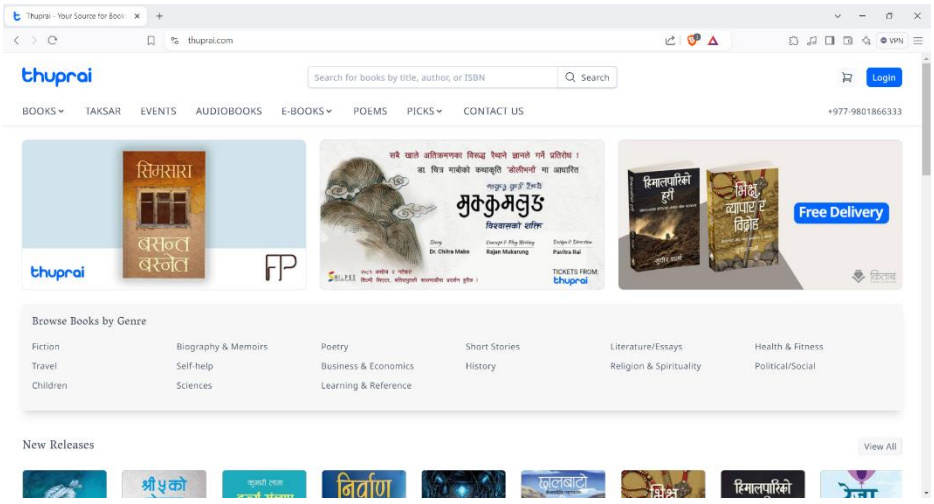

Figure 5: Thuprai Home page

This online application, Thuprai, is a Nepalese book source. Users may peruse books based on author, language, or genre. Additionally, it gives writers a platform to release their novels. Books mandala

1.1.4. Comparison

Features	Fanatic Books	Biblionepal	Books mandala	Foomantra	Bizmandala	Thuprai
User Profiles	✓	✗	✓	✓	✓	✗
Recommendation System	✓	✗	✓	✗	✗	✓
Wishlist	✓	✗	✓	✗	✓	✗

Genre-Based Filtering	✓	✓	✓	✓	X	X

2. AIMS AND OBJECTIVES

Aims:

- To offer an exclusive online bookstore that helps customers overcome information overload and improves their reading experience overall by offering personalized book ideas.

Objectives:

- **User Profiles**: Permit users to register for individualized accounts so they may keep track of their reading history, manage orders, adjust their preferences for books (genres, authors, formats, etc.), and record wish lists.
- **Recommendation System:** This system will personalize the shopping experience by suggesting books that align with users' preferences, reading habits, and past purchases. This will help users discover new titles and authors, ensuring a more engaging and tailored experience.
- **Provide a user-friendly experience:** Create and execute a simple user interface that is accessible and simple to use for all user roles, including employers and administrators.
- **Genre-Based Filtering:** Users can select from various genres (e.g., Fiction, Non-Fiction, Mystery, Science Fiction, Romance, etc.) to narrow down their search. This will help readers find books based on their favorite literary genres or explore new ones within the categories they enjoy.
- **Multiple Payment Methods:** Users will be able to choose from a variety of payment options.
- **Ensure privacy and security of data**: Protect user data by putting in place comprehensive data protection measures.

3. EXPECTED OUTCOMES AND DELIVERABLES

Expected Outcomes:

- User Registration and authentication
- Book Recommendations
- User-Friendly Interface
- Notification System
- Admin Dashboard
- Responsive web Design

Deliverables:

- Code
- Documentation
- Final Year report
- Manual Report

4. PROJECT RISKS, THREATS AND CONTINGENCY PLANS

4.1. Risk 1: Data Security and Privacy Concerns

Threat:

- There is serious security concerns associated with handling user data, particularly payment and personal information, including data breaches and illegal access.

Contingency Plan:

- Implement regular security audits and vulnerability assessments.

4.2. Risk 2: Ineffective or Inaccurate Recommendations

Threat:

- Users may get dissatisfied and participate less if the recommendation system fails to offer accurate or relevant book choices.

Contingency Plan:

- Adjust and modify the recommendation systems on a regular basis in response to user input and performance indications.
- To increase accuracy, implement a mixed recommendation system that combines content-based filtering, collaborative filtering, and human moderation.

5. METHODOLOGY

5.1. Different methodologies

- **Waterfall methodology**

The Waterfall methodology is a traditional, linear approach to software development where each phase of the project must be completed before the next one begins. This method follows a sequence of phases: Requirements, Design, Implementation, Testing, Deployment, and Maintenance. It is best suited for projects with clear, fixed requirements and where changes are unlikely to occur once the project is underway. (Motion Blog, 2023)

- **Spiral Methodology**

It is a risk-driven software development methodology that mixes waterfall and prototyping methods. It comprises a number of development cycles, with each cycle concentrating on a different facet of the project. Because it enables the early detection and reduction of possible problems, this technique is especially useful for big, complicated projects that carry a significant degree of risk. (learntek, 2019)

- **Scrum Methodology**

It is an agile framework that prioritizes cooperation, self-organization, and iterative development. It involves splitting projects into time-limited work periods known as sprints, during which teams focus on a portion of the backlog. Scrum's essential components—daily stand-up meetings, sprint reviews, and retrospectives—promote cooperation and ongoing development.

- **RUP (Rational Unified Process)**

It is an iterative, organized software development model with a focus on assigning responsibilities and tasks in a disciplined manner. There are four stages to it: conception, development, building, and exit. Business modeling, requirements, analysis and design, implementation, and testing are further areas of importance for RUP.

5.2. Selected Methodology

Incremental Methodology

The software development approach known as incremental methodology breaks the fanatic project up into more manageable parts. A functional product that meets a portion of the total criteria is delivered with each increment. This method works well for big, complicated projects because it permits ongoing development and delivery.

5.3. Software Development Life Cycle (SDLC) of Incremental methodology

The steps of requirements, design, coding, and testing are completed in each iteration. And until all planned functionality is realized, every new version of the system builds upon the functionality of the one before it. As soon as the first increment is provided, the system is placed into production. The initial iteration typically consists of a core product that fulfills fundamental needs; additional features are added in subsequent iterations. The next increment's plan is developed once the client has evaluated the main product.

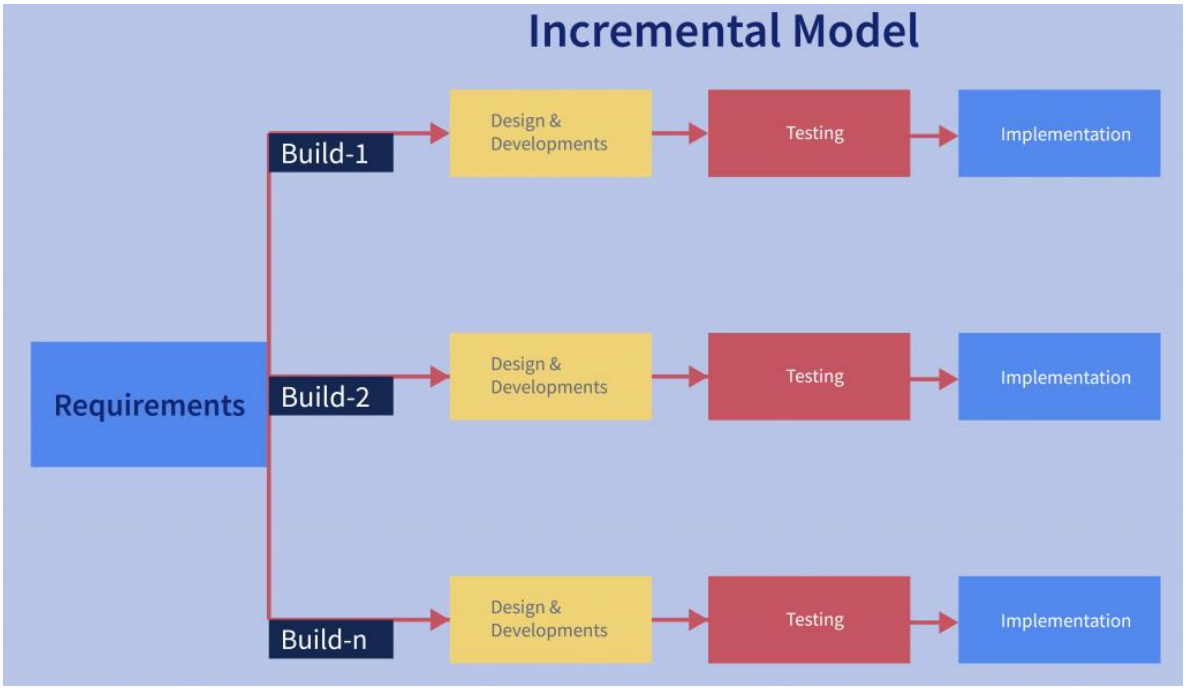

Figure 6: Software Development Life Cycle (SDLC)

Phases of Methodology:

Requirement analysis: Compile and examine the project requirements, specifying the criteria and highlighting the essential features for every user role. Prioritizing features is another step in this phase that makes sure the most crucial and significant features are created in the first increment.

System Design: Create an adaptable and user-friendly system architecture, database structure, and user interface. We'll pay close attention to designing a flexible layout that can easily accept new features in the years to come.

Development: Launch the platform systematically, adding features like a personalized resume the source in later versions after completing key functions.

Testing: In order to find and address issues, carry out unit, integration, and user testing at each iteration. Testing new features continuously makes sure they don't interfere with already-existing functionality.

Deployment: Make sure that every iteration of the program is scalable and available to all users by deploying it gradually on a cloud platform. Initial increments should be deployed early to get insightful user feedback for later development.

6. RESOURCES REQUIREMENTS

The growth of the "Fanatic Books" software project is made possible by optimum use of resources as basic components. From the beginning of the project to its successful completion, they cover a number of crucial points. Consider these materials as the gears that smoothly integrate to progress the project. To finish the "Fanatic Books" project, the following essential materials are needed:

6.1. Hardware Requirements:

- The required equipment includes a laptop for web application development, for testing and operation. Good internet connectivity is needed.

6.2. Software Requirements:

Microsoft word

- The project documentation will be comprehensive, utilizing Microsoft Word to produce user manuals, technical specifications, and requirements sheets, among other essential documents.

Figure 7: Microsoft Word

VS Code

- VS Code will be the primary tool for effective and systematically writing code due to features like syntax illumination and debugging

Figure 8: VS Code

Figma

- Figma will be used frequently in this project to create wireframes and application user interface prototypes. This procedure will enable the app's layout and interactions to be tested and improved before going into full production.

Figure 9: Figma

Web Development Tools (React)

React is essential tools for building web front end development. It helps build user interfaces which allows developers to build complex web applications that can update and render efficiently in response to data changes.

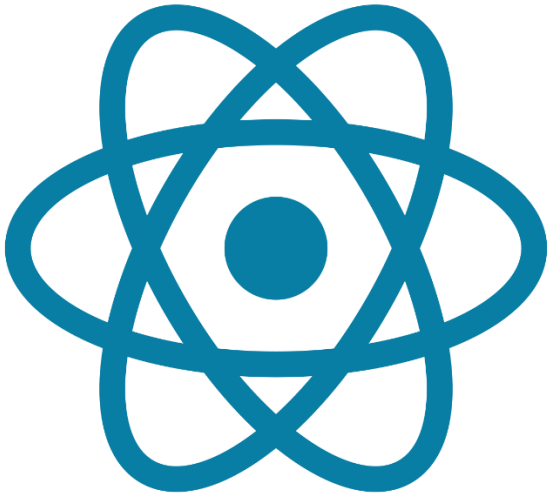

Figure 10: React

Python and Django

- Python and Django are popular choices for back-end web development projects due to their versatility, efficiency, and scalability. Python's clean syntax and readability make it easy to learn and understand, while Django's high-level framework provides a robust and efficient way to build web applications.

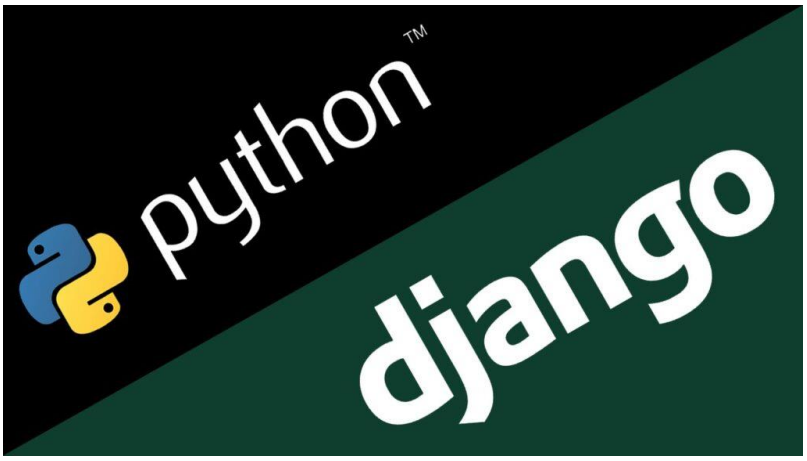

Figure 11: Python and Django

Version Control (Git and GitHub)

- Version control is a system that allows you to track changes to your code over time. It helps you collaborate with others, manage different versions of your project, and revert to previous states if necessary.

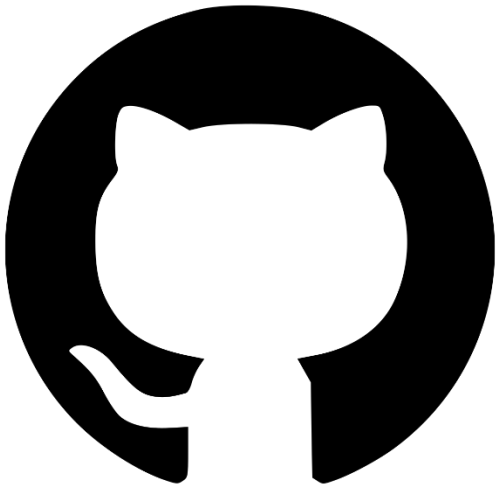

Figure 12: GitHub

Database

- XAMPP is a popular software package that includes Apache web server, MySQL database, PHP programming language, and Perl.

Figure 13: Xampp

7. WORK BREAKDOWN STRUCTURE

With the use of a work breakdown structure (WBS), a project management tool, huge projects with several moving parts may be completed step-by-step. A WBS may combine scope, cost, and deliverables into a single tool by splitting the project into smaller parts.

There are several reasons why the work breakdown structure is a useful tool in project management. In order to make the project more manageable and less difficult, it is first divided into smaller, more manageable components. It also gives the many individuals and teams working on the project a road map. (Organ, 2024)

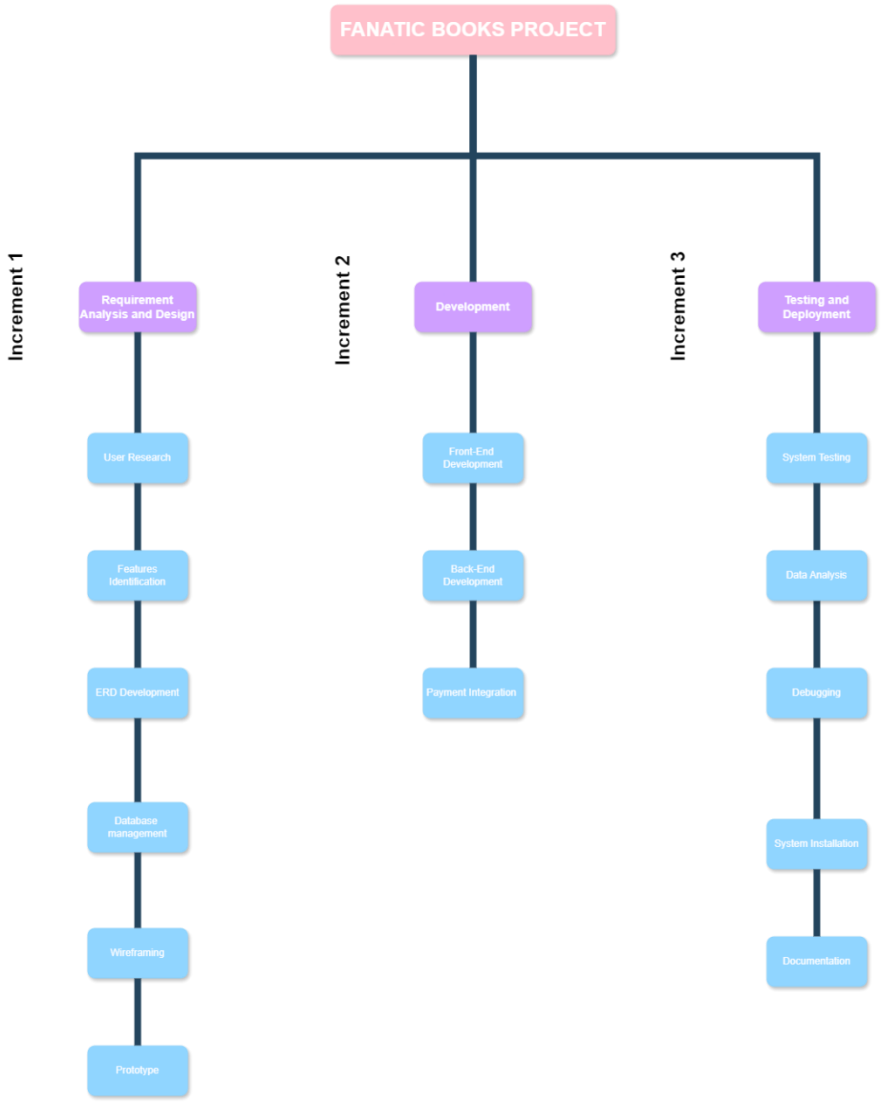

Figure 14: Work Breakdown Structure (WBS)

8. MILESTONES

A project milestone is a tool used in project planning that designates a certain point in a project timeline. Project milestones can be used to indicate the beginning and end of a project, the conclusion of a significant work phase, or any other project milestone that is significant, such the creation of project deliverable.

Project milestones are crucial for precise project planning and scheduling because they allow you to more precisely anticipate how long your project will take to finish by identifying significant dates and events. (Tristancho, 2023)

Milestones	Project Activities	Project Timeline
1	Project Start	October 1, 2024
2	Requirements Analysis and Design	October 1, 2024 - November 5, 2024
-	User Research	October 1, 2024
-	Features Identification	October 8, 2024
-	ERD Development	October 15, 2024
-	Database Management	October 22,2024
-	Wireframing	October 28, 2024
-	Prototype	November 3, 2024
3	Development	November 10, 2024 - January 25, 2025
-	Front-end Development	November 10, 2024
-	Back-end Development	December 13, 2024
-	Payment Integration	January 17, 2025

4	Testing and Development	February 3, 2025 - March 30, 2025
-	System Testing	February 3, 2025
-	Data Analysis	February 10, 2025
-	Debugging	February 17, 2025
-	System Installation	February 25, 2025
5	Documentation	March 3, 2025 - March 19, 2025
-	Final Reviews	March 3, 2025
-	System Documentation	March 19, 2025

Table 1: Milestones Project

9. PROJECT GANTT CHART

A Gantt chart is a popular visual aid for project scheduling. The start and end dates of a project's components, including resources, planning, and dependencies, are displayed in this kind of bar chart.

A Gantt chart facilitates the planning, administration, and observation of certain project activities and resources. The project chronology is displayed in the graphic, encompassing both scheduled and finished work throughout time. Project managers may better communicate project status, and the percentage of work completed within a project (Grant, 2024)

ID	Task Mode	Fanatic Books	Duration	Start	Finish
1		**Increment 1:REQUIREMENT ANALYSIS & DESIGN**	**29 days**	**Tue 10/1/24**	**Tue 11/5/24**
2		User Research	5 days	Tue 10/1/24	Mon 10/7/24
3		Features Identificatic	6 days	Tue 10/8/24	Mon 10/14/24
4		ERD Development	6 days	Tue 10/15/24	Mon 10/21/24
5		Database Manageme	4 days	Tue 10/22/24	Fri 10/25/24
6		Wireframing	4 days	Mon 10/28/24	Thu 10/31/24
7		Prototype	3 days	Sun 11/3/24	Tue 11/5/24
8		**Increment 2:DEVELOPMENT**	**61 days**	**Sun 11/10/24**	**Sat 1/25/25**
9		Coding (Front-End)	28 days	Sun 11/10/24	Wed 12/11/24
10		Coding (Back-End)	24 days	Fri 12/13/24	Wed 1/15/25
11		Payment Integration	7 days	Fri 1/17/25	Sat 1/25/25
12		**Increment 3:TESTING and DEPLOYMENT**	**30 days**	**Mon 2/3/25**	**Fri 3/14/25**
13		System Testing	4 days	Mon 2/3/25	Thu 2/6/25
14		Data Analysis	5 days	Mon 2/10/25	Fri 2/14/25
15		Debugging	5 days	Mon 2/17/25	Fri 2/21/25
16		System Installation	4 days	Tue 2/25/25	Fri 2/28/25
17		Documentation	10 days	Mon 3/3/25	Fri 3/14/25

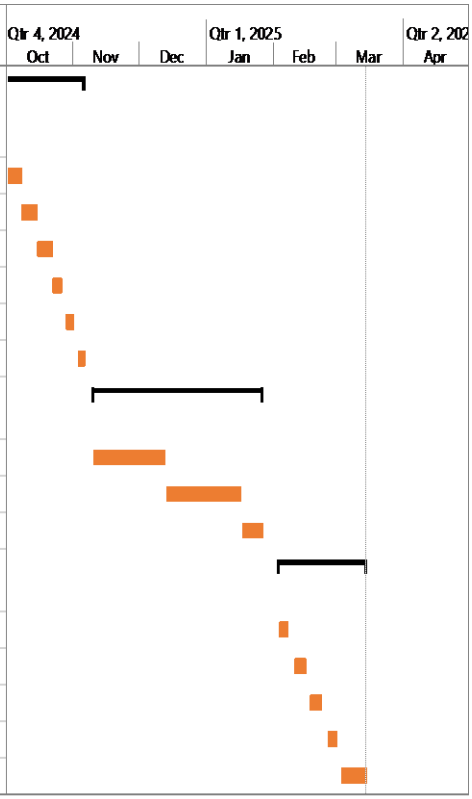

Figure 15: Gantt Chart

10. CONCLUSION

Creating an online bookstore is a big step in offering a smooth and effective online book browsing experience. We were able to create just one, safe system by means of this project by properly combining essential features including order tracking, user authentication, book collection management, and secure payments.

We used an organized process for the whole Software Development Life Cycle (SDLC), from requirement analysis through phases like Requirements, design, development, testing, deployment and release phase. Each phase's obstacles offered significant learning opportunities, especially in relation to database architecture, system integration, and performance optimization.

To sum up, this project shows how software engineering principles may be used in real-world situations and emphasizes the need of careful preparation, effective cooperation, and ongoing progress. Because of its flexibility, the system may be improved in the future.

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