



Proposal
For
Programming for Enterprise System Project
Bachelor of Science in Information Technology

Timber Hub

Submitted by

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Guidelines and Forms

Submission Procedure

Duly filled proposal forms completed in all respects should be submitted in form of soft copy in the VLE. On receipt of the applications the proposals will be evaluated by the examiner and proposal would then be defended by student groups. The project group may need to revise the proposal in light of the examiner's recommendations.

For further information, please contact:

Module Coordinator

Ms. Sonam Wangmo

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Application for the Project

1. Project Identification

1.1 Reference Number: 2024_CSF303_03(Year_Module_groupNo)	
1.2 Problem statement: Despite the presence of numerous sawmills in Bhutan, there is a significant deficiency in the market regarding an online platform for showcasing and selling their products to customers. Additionally, the absence of a system for pre-orders exacerbates this issue, as potential buyers are unable to reserve or plan purchases in advance. This lack of functionality not only diminishes customer convenience but also poses challenges for sawmill owners in forecasting demand and optimizing production schedules. Consequently, the inability to facilitate pre-orders hampers the efficiency and profitability of the sawmill industry in Bhutan, impeding its growth potential and hindering economic development.	
1.3 Project Title: Sawmill Bhutan	
1.4 Key Words: Furniture Timber Tree sawmill economic	
1.5 Project Guide: Name: _____ Sonam Pemo Designation: _____	

Mobile # :		Tel. # :
Email:		

1.6 Project Duration:	
Starting Date:	15/02/2024
Completion Date:	24/05/2024_____

2. Aims, Goals, Objectives and scope of the Project

<p>2.1 Aims of the Project:</p> <ol style="list-style-type: none"> 1) To develop an efficient online platform for showcasing and selling products from sawmills in Bhutan. 2) To facilitate seamless interaction between sawmill owners and potential customers. 3) To enhance the visibility and accessibility of Bhutanese sawmill products. 4) To contribute to the economic growth of the sawmill industry in Bhutan by leveraging digital technology.
<p>2.2 Goals of the Project:</p> <ol style="list-style-type: none"> 1) Establish a user-friendly and intuitive online marketplace tailored to the needs of sawmill owners and customers. 2) Increase the sales and revenue of sawmill products by providing a wider reach to potential buyers. <p>3b</p>
<p>2.3 Objectives of the Project:</p> <ol style="list-style-type: none"> 1) Develop and launch a functional web application for the online marketplace within a specified timeframe.

- 2) Onboard a significant number of sawmill owners onto the platform and ensure regular updates of their product listings.
- 3) Implement features like categorization, search filters, and user reviews.
- 4) Conduct marketing campaigns to raise awareness about the platform and attract a diverse range of customers.

2.4 Scope of the Project:

A.User Scope:we

- **Customers**

Allow customers to browse through available furniture listings. Provide customers with the option to pre-order furniture that is not currently in stock or is available for pre-order.

- **Sawmill owners**

Sawmill owners should be able to add new furniture products to their inventory as well as they can update the services such as shifting charges.

- **Admins**

Allow the admin to manage user accounts, including creating, updating, and deleting accounts as well as they can verify the sawmill owners.

B.System Scope:

- **User management**

Allow the admin to manage user accounts, including creating, updating, and deleting accounts.

- **Sawmill owner management**

Allow the admin to manage sawmill owner accounts, including creating, updating, and deleting accounts as well as verify the sawmill materials.

- **Services Updates**

Sawmill owners will update the services such as shifting charges.

- **Pre Orders and orders**

Users can order as well as preorder the furniture.

3. Project features

3.1 Background

The sawmill industry in Bhutan, despite its numerous establishments, grapples with a notable deficiency in the market, a lack of an online platform for showcasing and selling their products. This gap is further exacerbated by the absence of an online platform, preventing potential buyers from reserving or planning purchases in advance. This operational shortfall not only diminishes customer convenience but also poses substantial challenges for sawmill owners, hindering their ability to forecast demand and optimize production schedules. Consequently, the inability to facilitate pre-orders significantly impacts the efficiency and profitability of the sawmill industry in Bhutan, impeding its growth potential and hindering broader economic development in the region.

To address these challenges and usher in transformative changes, this proposed project aims to develop an efficient online platform tailored to the specific needs of sawmill owners and customers in Bhutan. The project focuses on facilitating seamless interaction between these stakeholders, enhancing the visibility and accessibility of Bhutanese sawmill products globally, and contributing to the economic growth of the sawmill industry through the strategic use of digital technology.

3.2 Literature Review:

1. Whitney Sawmills

Founded in the early 1990s by local craftsman Will Bullough, Whitney Sawmills has become a well-known timber supplier throughout the United Kingdom. They supply wood for enormous construction projects, such as restoring old houses or erecting castles. The sawmill is not just a supplier; it also actively promotes rural employment, buys timber from nearby landowners, and gives native woodland wildlife first priority (Whitney Sawmills, n.d.). Europe's and the UK's reliable source of hardwood and softwood timbers is Whitney Sawmills.

However it differs greatly from what we are creating. While we will be selling finished goods, such as furniture, Whitney Sawmills does not place as much emphasis on producing finished goods. Second, Whitney Sawmills does not have an online ordering feature; instead, we must email to place an order. Additionally, their primary focus is on providing timber rather than furniture made from that timber. Our system will serve as a platform for numerous sawmills, but the Whitney Sawmill is only for one sawmill.

2. Sawmill Timber

Since its founding in 1968, Sawmill Timber, a family-run company based in Stanley, Wakefield, has grown to become Yorkshire's go-to source for high-quality timber goods and services. Their emphasis on pressure-treated wood guarantees longer product life, demonstrating their dedication to excellence. Sawmill Timber prioritizes on-site manufacturing while maintaining competitive prices, offering specialized services with professionalism. Fencing, decking, gates, sheds, outdoor classrooms, timber posts, concrete, trellis, arbours, arches, custom sheds, full deck installation, made-to-measure, cutting (just for their timber), and a free quote service are among the many services offered (The Sawmill, 2019). This extensive range of services, which are available to both commercial and residential clients, demonstrates Sawmill Timber's commitment to fulfilling the region's varied timber-related needs.

There are some notable differences between Sawmill Timber's operations and our planned system. Although the main focus of Sawmill Timber is to supply wood products like decking, fencing, gates, sheds, and more, our platform will offer more than just raw materials. Our system will focus on providing a wide variety of products and selling finished goods, especially furniture. In addition, our platform will have an online ordering feature, which will give customers an easier way to place orders than Sawmill Timber's current ways, which involve email and conventional channels of communication. In addition, our system is made to function as a platform for several sawmills, generating a centralized market that offers a wider range of goods and services related to timber.

3.3 Requirements

3.3.1 Functional Requirements

- **User Registration and Authentication:**
Users should be able to register for an account on the web application.
The system must support secure authentication for user login.
- **Search and Navigation:**
Users should be able to search for their desired product. The web application must provide intuitive navigation for users to explore different categories and regions.
- **Product Catalog:**
Display a categorized list of products on the web application.

- **Preorder:**
Allow customers to submit custom milling requests for specific wood dimensions or cuts not available in the standard product catalog.
Provide a form or interface for customers to specify their requirements and receive quotes.
- **Order Management:**
Permit users to place orders for already-existing finished furniture pieces.
Allow users to cancel an order within a specified time frame.
- **User Management:**
Admin should be able to view a list of registered users and their details.
Admin should be able to deactivate the user account if necessary.
- **Sawmill verification:**
Admin will be verifying the registered sawmill owner has a license.

3.3.2 Non-functional Requirements

- **Security**
The platform should implement robust security measures, including data encryption, secure authentication, and compliance with relevant data protection regulations.
- **Usability**
The platform should have an intuitive and user-friendly interface, with clear navigation and instructions to guide users through the timber booking process.
- **Reliability**
Our web application will consistently provide a dependable experience for all users, fostering trust and satisfaction.
- **Performance**
To enhance user experience, the web application will prioritize fast loading and efficient display, optimizing overall performance.
- **Confidentiality**
The web application must securely store sensitive user data preventing unauthorized access through robust access controls and encryption mechanisms.

3.4 Technology

The technology we are going to use for developing our web application are:

1. Front-end

- Programming languages: React, HTML, CSS, JavaScript
- UI frameworks: Bootstrap
- Visual design tools: Figma
- Code editors: Visual Studio Code

2. Back-end

- Programming languages: Java, JavaScript
- Databases: MySQL
- Web frameworks: Spring Boot 3
- Version control systems: GitHub

3.5 System Architecture

Microservices, which is another name for microservice architecture, is a methodology that organizes applications into a group of independent, small services. Every service is managed by a small team, operates independently, and carries out a particular business function inside a defined environment. By dividing large and complex systems into smaller, independent components that can be developed, deployed, and scaled individually, this architecture allows large and complex applications to be delivered quickly, often reliably, and sustainably. Fault separation, scalability, a diversity of technologies, and support for polyglot programming are some of the key characteristics of microservices. Microservice best practices include utilizing the optimal storage for each service and data type, avoiding code or data sharing between services, decentralizing development responsibilities, and structuring services around the business domain. Microservices architectures such as Google Kubernetes Engine and Amazon ECS are supported by services and technologies provided by AWS and Google Cloud.

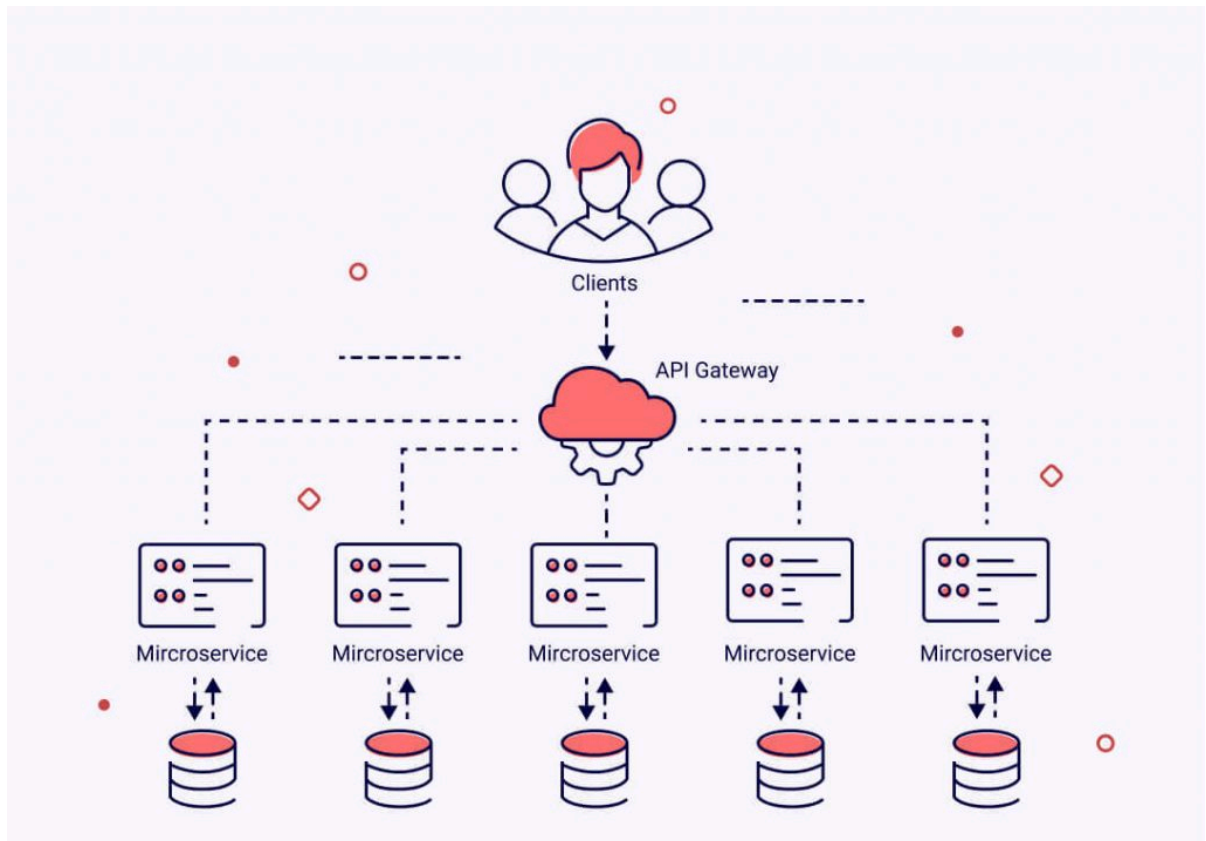
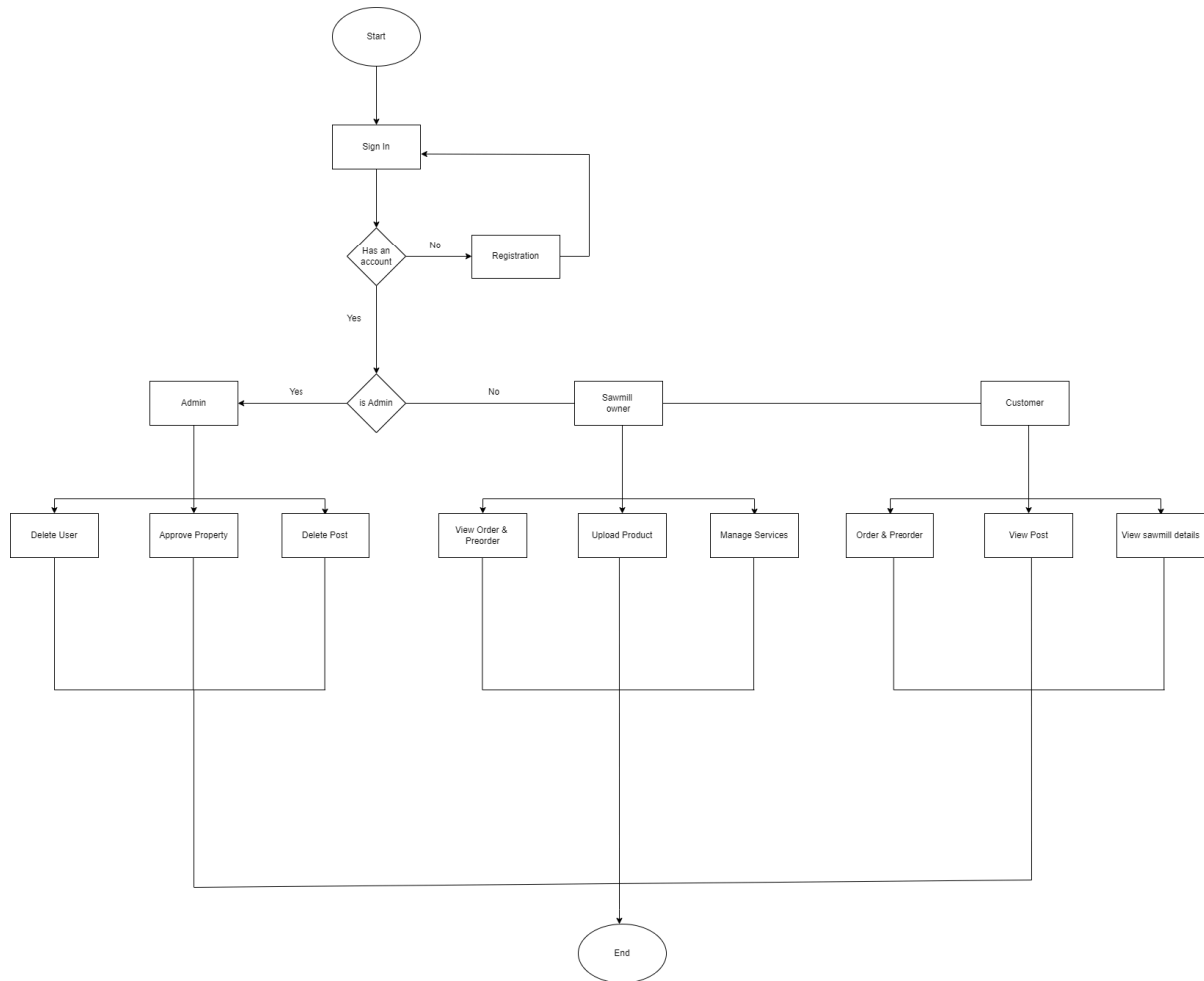


Figure 2 Microservices architecture design

3.5.2 Workflow



3.6 Deployment

The website will be deployed in render or any other free deployment sites.

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4. Team Members Role

4.1 Member 1 Name and Role

Jigme Namgyel (Developer)

4.2 Member 2 Name and Role

Tenzin Sonam (Developer)

4.3 Member 3 Name and Role

Tandin Penjor Tamang (Developer)

4.4 Member 4 Name and Role

Tenzin Wangchuk (Developer)

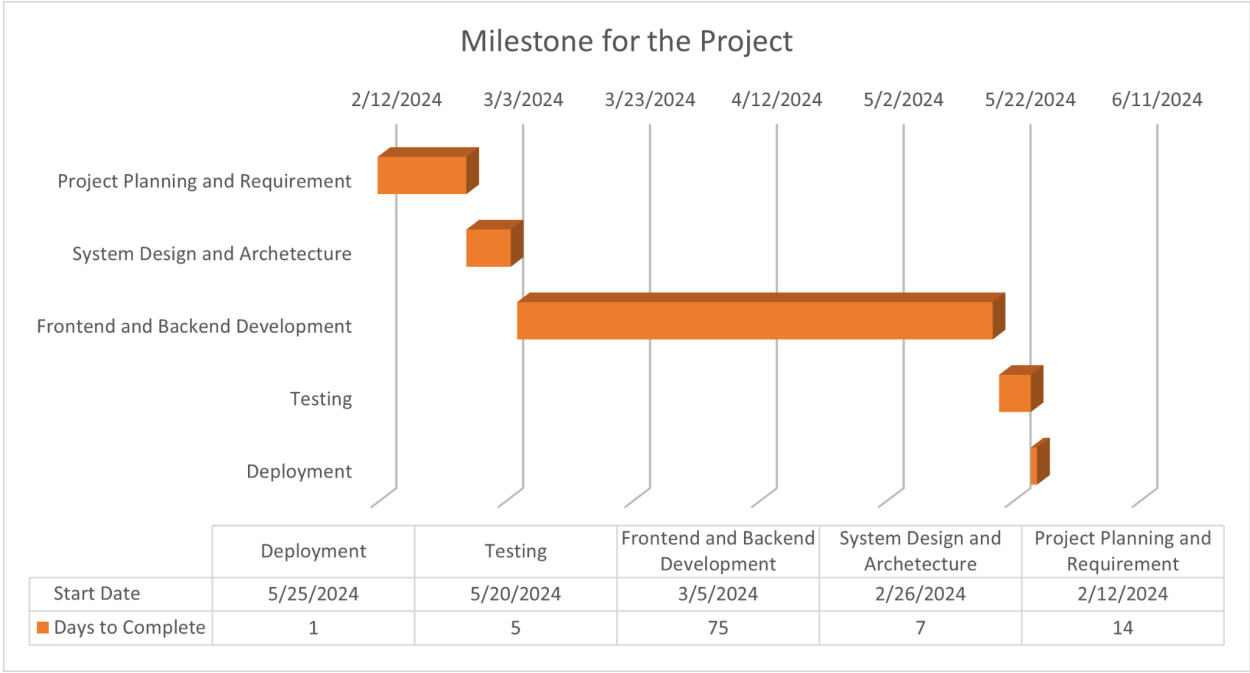
4.5 Member 5 Name and Role

Nyim Dorji (Developer)

5. Examiner Comments

6. Project Schedule / Milestone Chart /Work plan

The diagram below is the milestone of our project.



7. Bibliography

The Sawmill. (2019, June 17). Home - the sawmill. <https://the-sawmill.co.uk/>

Whitney Sawmills. (n.d.). Whitney Sawmills. <https://www.whitneysawmills.com/>