

University of Frontier Technology, Bangladesh

Department of Software Engineering

Lab Report 1 Project Proposal

Project Name: Simple Planner

Project Title: Multi-User Web-Based Task Scheduling, Notes, and Productivity Monitoring System

Course Code: SE 118

Course Title: System Analysis and Design Sessional

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1 Problem Analysis and Motivation

In modern work and academic environments, users often struggle to manage tasks, maintain notes, and track productivity efficiently. Traditional approaches, such as paper planners, simple to-do lists, or scattered apps, not only lead to fragmented workflows, but also fail to meet the demand for minimal, simple, and low-overhead solutions. Many existing visual planners provide appealing interfaces but lack built-in task and note management, forcing users to rely on multiple separate tools to maintain a cohesive workflow.

The proposed **Simple Planner** is a multi-user web-based system designed to provide a single, unified solution that integrates task scheduling, note management, and productivity analytics in a minimal and easy-to-use platform. Users can register accounts, manage tasks with calendar integration, organize notes in folders, configure personal settings, and view productivity analytics computed by a dedicated analytics microservice.

The system addresses the need for:

- Efficient task tracking and scheduling
- Real-time synchronization between task lists and calendar views
- Secure multi-user access with session management
- Built-in notes management integrated with tasks
- Comprehensive productivity analytics to inform workflow improvements

By centralizing these features into a simple, user-friendly web application, the system allows users to maintain all productivity activities in one place, eliminating the need for multiple tools, while providing actionable insights to enhance personal productivity.

2 Literature Review

Web-based productivity systems have increasingly focused on integrating task management, scheduling, and analytics in scalable architectures. **Patrick Luyts** analyzed a web-based task management system, emphasizing modular backend design, RESTful APIs, and task lifecycle management. This supports the architectural choices in the proposed system, including Flask backend and a dedicated analytics microservice [1].

Similarly, a study in the *Journal of Telecommunication, Electronic and Computer Engineering (JTeC)* by **Universiti Kuala Lumpur** highlighted secure login, session validation, and data isolation in multi-user web applications, directly informing the system's security requirements [2].

Research on microservices shows that separating analytics into independent services improves scalability and maintainability, enabling real-time computation of productivity metrics. Integrating dashboards and analytics enhances user engagement through visual performance insights.

In conclusion, prior work validates modular architecture, secure authentication, and analytics integration. The proposed system extends these by combining task management, calendar synchronization, note organization, and a Spring Boot analytics microservice in a single unified platform.

3 Methodology

The **Simple Planner** development methodology involves the following:

- Frontend: JavaScript(React.js)
- Backend: Python(Flask), Java(Spring Boot)
- Database: Database(PostgreSQL)

Diagram

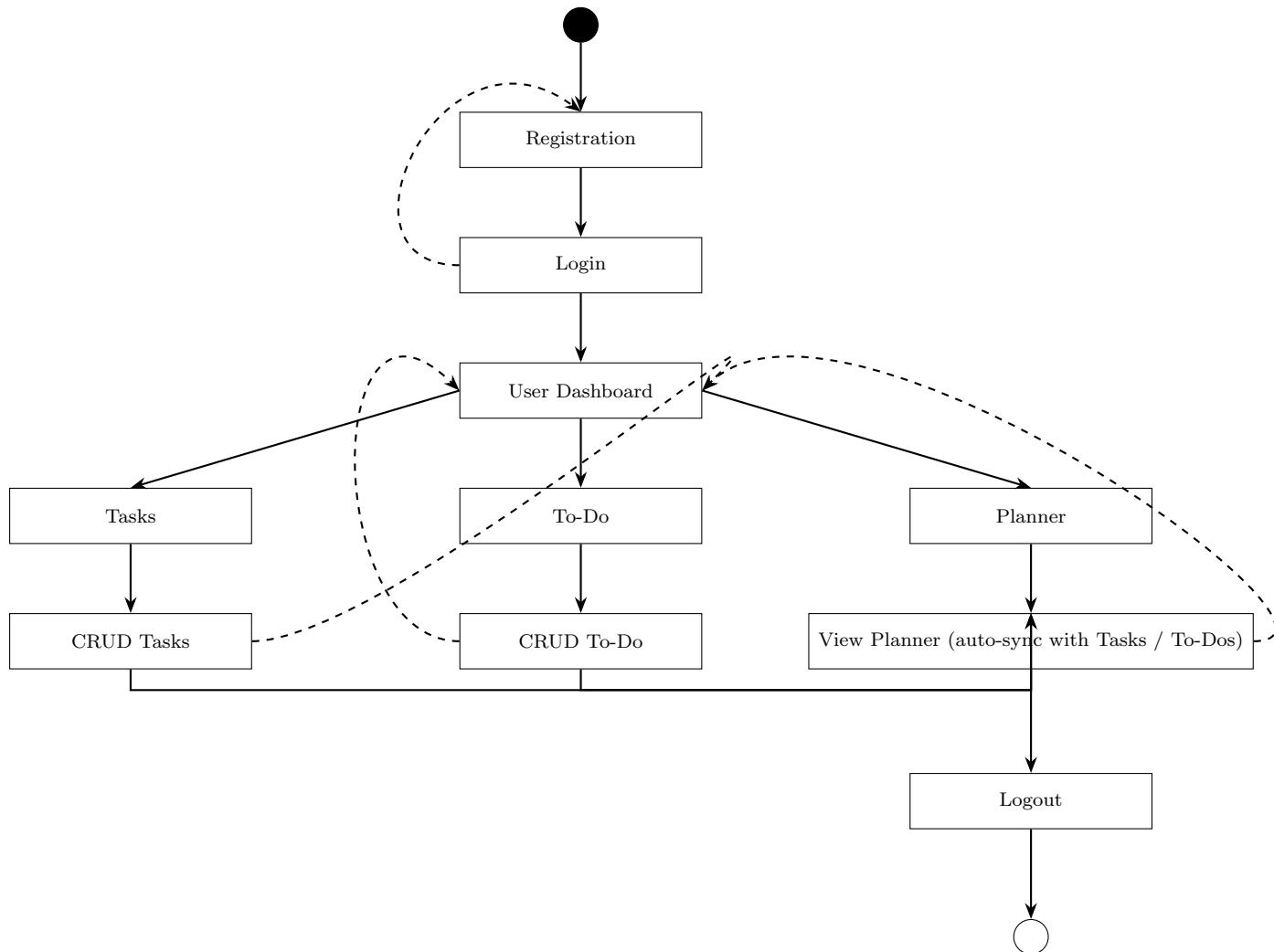


Figure 1: Diagram of Simple Planner Showing User Flow

4 Feasibility Study

4.1 Economic Feasibility

- Open-source technologies (React, Flask, Spring Boot, PostgreSQL) minimize licensing costs.

- Centralized task management and analytics improve user efficiency.
- Budget estimation includes development, hosting, and minor software licenses.

4.2 Technical Feasibility

- Well-documented, widely supported frameworks.
- Flask and Spring Boot ensure modular design and scalability.
- React provides responsive and user-friendly interfaces.

4.3 Operational Feasibility

- Web-based system accessible across devices.
- Secure multi-user support ensures privacy.
- Built-in dashboards enhance adoption.

5 Main Phases

Table 1: Main Phases of Simple Planner Project

SL	Task	Required Week	Responsible Person	Phase
1	Requirement Specification and Data Collection	1	Developer	Research & Planning
2	Requirement Finalization	1	Developer	Analysis
3	System Design and Modeling	1	Developer	Design
4	System Development	2	Developer	Implementation
5	System Testing	1	Developer	Testing
6	Documentation	1	Developer	Deployment

6 Work Plan of the Project

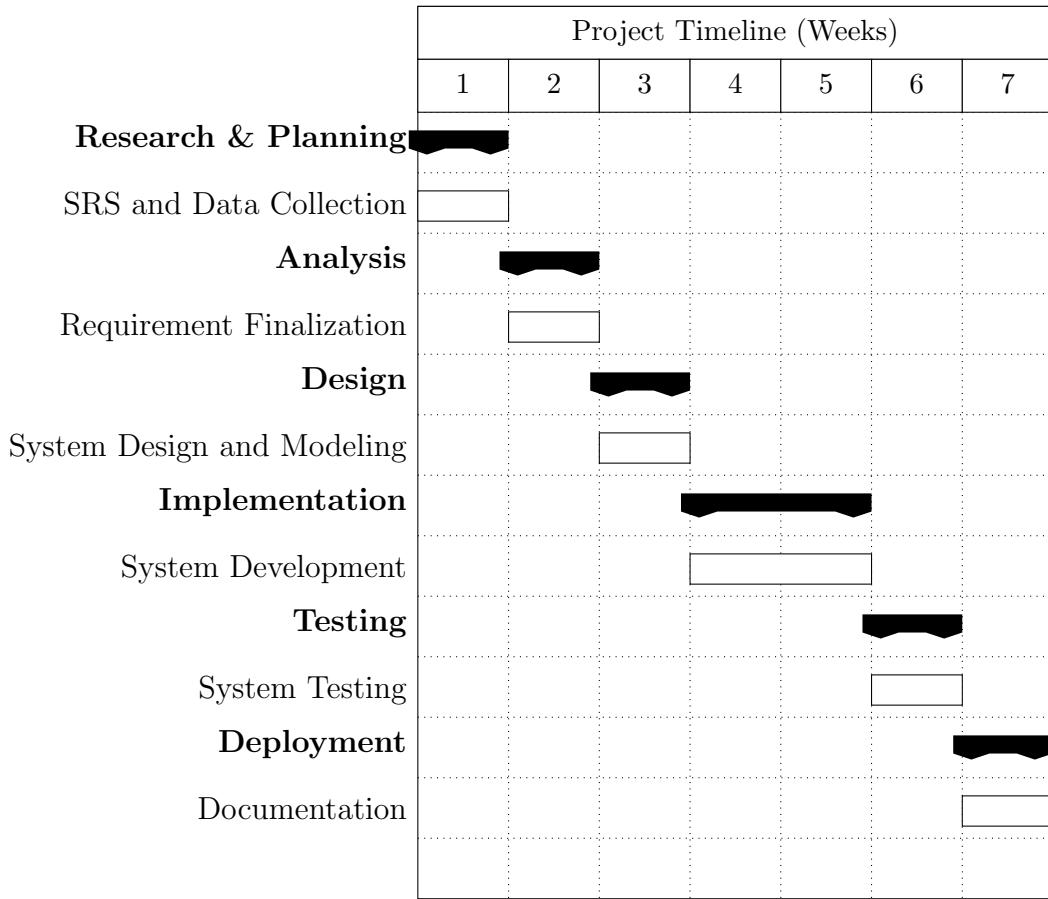


Figure 2: Gantt Chart of Project Timeline

7 Budget Details

Table 2: Budget Details for Academic Project

Item	Estimated Cost (USD)
Hosting & Deployment	100
Development Tools	0 (Open Source)
Total	100

8 Conclusion

The **Simple Planner** project aims to provide an integrated web-based solution for task management, note organization, and productivity monitoring. By combining modern frontend and backend technologies with a microservice-based analytics architecture, the system offers a secure, scalable, and user-friendly platform. This project demonstrates practical application of web development, system design, and productivity analytics in a cohesive solution.

References

- [1] P. Luyts, “A comprehensive technical analysis of a web-based task management system: Architecture, implementation, and evaluation.” https://www.researchgate.net/profile/Patrick-Luyts/publication/398933583_A_Comprehensive_Technical_Analysis_of_a_Web-Based_Task_Management_System_Architecture_Implementation_and_Evaluation/links/694850ba06a9ab54f848f2a9/A-Comprehensive-Technical-Analysis-of-a-Web-Based-Task-Management-System-Architect.pdf, 2023.
- [2] Universiti Kuala Lumpur, “Secure login and session validation in multi-user web applications,” *Journal of Telecommunication, Electronic and Computer Engineering (JTeC)*, 2022.