# ConstructEase: A Full Stack Web Application for Efficient Task and Project Management in Construction and Business Sectors

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**Abstract –** ConstructEase is a full-stack web application made and designed for both construction companies and startups. With a Next.js frontend and Node.js/Express.js backend ensuring highly scalability and responsive design. This research allows users to drag and drop different tasks and manage resources through various ways such as list, table and timeline. It includes features like drag and drop tasks management, progress tracking, resource allocation. This web application was tested for real-world scenarios demonstrating its efficiency in managing construction workflows and business projects. The adaptability of the platform enables seamless use for complex construction workflows and agile business operations. It improves projects timelines, enhances team coordination and reduces source wastage in both the sectors. This paper

highlights the adaptability of the platform making it valuable for both the sectors.

***Keywords***: project management, monitoring progress, full-stack development, business management, construction, team collaboration

## 1.INTRODUCTION

Project management is vital for successful execution of projects in various departments including construction and business sectors. Business sectors and startups faces difficulties related to team collaboration, task delegation and tracking progress of employee across departments. Similarly, in construction sector project managers faces challenges such as managing resources, coordinating multiple teams. Traditional project management tools often lack the flexibility and scalability needed to accommodate the unique needs of these diverse environments.

This paper introduces a web-based application designed to highlights these challenges by providing a solution for task management, resource allocation and team collaboration. This application is built using Next.js for the frontend and Node.js/Express.js for the backend ensuring highly scalability, high performance and real time updates. This project offers features such as

dragand-drop, task management, and customizable user roles.

The main objective of this work is to explore how this project improve team efficiency in both the construction and business sectors. The system's design and implementation are discussed in detail highlighting its flexibility, adaptability and realworld applications.

## 2.BODY

### 2.1 System Overview

ConstructEase is a full-stack web application designed to manage tasks, allocate resources and track project progress in both the industries. It ensure scalability, flexibility and high responsiveness. **2.2 Frontend Development**

The frontend of the application is built using Next,js, a React-based web development framework that supports server side. It ensures seamless navigation and improves performance for dynamic data loading. **2.3 Backend Development**

The backend of the application is built using Node.js and Express.js. Node.js provide an event driven, non-blocking I/0 model ideal for real-time applications and Express.js serves as the web application framework enabling the creation of RESTful APIs.

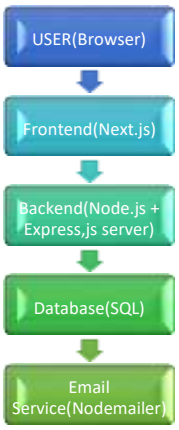
### 2.4 Database

SQL is used for storing user information, project details, tasks and activity logs ensuring fast data retrieval and flexible schema.

### 2.5 Features of Project

- Project and Task Management
- Multi-View Support
- User Management **2.6 Table and charts**

| ***Features*** | ***Description*** |
|---|---|
| Drag and Drop Task Management | Move tasks easily across different stages of project |
| Timeline View | Task dependencies and Visualize project schedules |
| Secure User Authentication | User can sign-up, login and verify themselves |
| Real-Time Project Updates | Instant reflection of changes in task and status done by project manager and user |




## 3. Conclusions

The development of ConstructEase – Building Made Simple, a full-stack project management application, provides an efficient and scalable solution for task management, project tracking, and team collaboration. By offering features such as drag-and-drop task organization, timeline visualization, list and table views, and user management with email notifications, the platform significantly improves project workflow. The application is versatile, suitable for construction companies, startups, and corporate environments,

allowing diverse teams to manage projects effectively in real-time. With Next.js on the frontend and Node.js with Express.js on the backend, supported by SQL, the system ensures speed, security, and flexibility. Future enhancements could include mobile responsiveness, advanced analytics dashboards, and integration with third-party tools to further streamline operations.

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