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**CS6P05NP Final Year Project Proposal**

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# 1. Introduction

In the world of building things, like houses and roads, we know how important it is to do things accurately and keep track of money. That's why we're introducing a special software for people in the construction business. This software helps you manage your projects and money all in just one click. Think of it like having a helper that understands both how to manage projects and how to handle money. This helper can do many things from helping you make sure you get paid correctly every day, to showing you how much money you're making and spending on the projects. Imagine if making reports about your work each day was easy and fast, and you could look at these reports to see what's going well and what could be better. This software can even help you keep your projects running smoothly, making sure things are done on time and within your budget. But it doesn't stop there. This helper also knows how to look at each project to see if it's making or losing money. It's like having a friend who watches over your tools and machines, making sure they're helping you earn money. And when it comes to money, this helper keeps a neat record of everything you earn and spend, making it easy to show the important people, like the government, that you're doing things right. More than just a tool, this helper sends you messages to help you stay on top of things. It's like having a reminder for important tasks, so nothing catches you off guard. Now, we've added something extra – a way for you to keep track of all the materials you need to build things. This means you can avoid having too much or too little of what you need. It's like having a super-smart shopping list that saves you time and money. Imagine this helper as your partner, combining smart technology with what you know about building. Together, you can make your construction work better, your money smarter, and your life easier.

## 1.1 Current Scenario

In the world of construction, keeping track of things can sometimes be like managing a big pile of papers. Important details about projects, like what was done each day and how much money was earned, can easily get lost in this paper chaos. This way of managing things can be tough and can lead to problems, especially when it comes to money. Imagine if you couldn't find a paper that showed you did some work for someone. They might not pay you the right amount, or they might not pay you at all. Even small amounts of money can add up to a lot over time. When these small amounts are not recorded properly, they can create big losses that hurt your business. Think about it this way: if you don't write down that you spent a little bit of money on tools or materials, you might not realize how much you're actually spending. This can make it hard to know if you're making a profit or losing money. Without clear records, it's like trying to solve a puzzle with missing pieces – you can't see the full picture. Not having a good way to keep track of things can also make it hard to plan for the future. You might not know how much money you need for upcoming projects or how much you can invest to make your business grow. It's like driving a car without a map – you might not know where you're going. Sometimes, even if you work really hard and do a great job, the lack of proper records can hold you back. You might not be able to show others the great work you've done or prove that you're a reliable business. It's like having a secret talent that nobody knows about. In a world that's moving fast with technology, sticking to old-fashioned paper systems can slow you down and cause unnecessary losses. It's time to upgrade to a smarter way of doing things, one that prevents small amounts from turning into big losses and helps you make smarter decisions for your construction business.

## **1.2 Problem Statement and Project as a Solution**

In the world of construction, keeping track of things can sometimes be like managing a big pile of papers. Important details about projects, like what was done each day and how much money was earned, can easily get lost in this paper chaos. This way of managing things can be tough and can lead to problems, especially when it comes to money. Imagine if you couldn't find a paper that showed you did some work for someone. They might not pay you the right amount, or they might not pay you at all. Even small amounts of money can add up to a lot over time. When these small amounts are not recorded properly, they can create big losses that hurt your business. Think about it this way: if you don't write down that you spent a little bit of money on tools or materials, you might not realize how much you're actually spending. This can make it hard to know if you're making a profit or losing money. Without clear records, it's like trying to solve a puzzle with missing pieces – you can't see the full picture. Not having a good way to keep track of things can also make it hard to plan for the future. You might not know how much money you need for upcoming projects or how much you can invest to make your business grow. It's like driving a car without a map – you might not know where you're going. Sometimes, even if you work really hard and do a great job, the lack of proper records can hold you back. You might not be able to show others the great work you've done or prove that you're a reliable business. It's like having a secret talent that nobody knows about. In a world that's moving fast with technology, sticking to old-fashioned paper systems can slow you down and cause unnecessary losses. It's time to upgrade to a smarter way of doing things, one that prevents small amounts from turning into big losses and helps you make smarter decisions for your construction business.

Our solution is like a superhero for this problem. Our software keeps everything organized and in one place. It's like having a magic box where you can store all your important information. With our software, you can keep a perfect record of everything – from what work you did each day to how much money you made and spent. It helps you remember even the tiniest things, so nothing gets lost. The best part is, our program doesn't let those small things add up to big problems. It keeps track of everything, making sure you're not losing any money. It's like having a friend who watches your money so you don't lose any of it. So, our program is here to save the day. It helps construction businesses switch from messy paper chaos to a neat and organized digital system. With this, there's no more losing papers or losing money – everything is in the right place. It's like having a smart plan to keep your business safe and growing.

### **1.3 Related Projects**

In recent years, several projects and initiatives have emerged to address various aspects regarding the easiness for the managing of the projects in the construction. Mobile applications have been developed to make easier for the user and availability, While these endeavors contribute valuably to the broader goal, there remains a need for a comprehensive solution that integrates all these functionalities into a single, intuitive platform.



## Construction Management Software - ERP

**Bidhee Construction ERP** provides you a powerful, easy to use, dynamic and secure cloud based platform that will help you in planning, managing, prioritizing, and delivering construction projects.

This is system built for **Contractors, Builders** and **Heavy Worker Professionals**.

Construction Management Software consist of Several Modules:

- Tender Bid Management
- Human Resources Management
- Purchase & Inventory Management
- Project Management (includes BOQ Management,
- Insurance Management
- Vehicle & Equipment Management (includes Management of Vehicles Fleet, Vehicle Movement, Expenses & Income of each vehicle, idle rate calculation, trip wise allowance calculation, Maintenance, Servicing & Spare Parts Log)



*Figure 1 Bidhee Construction ERP*

This is the Bidhee Construction ERP where there is a focus on the whole management for the big scale construction industries and the they have many extra features which will not be compatible for every scale companies.

## **1.4 Comparison**

Basically, in the comparison both the software's have the same features which are Employee management, Equipment Management, Project Management and Vendor Management but they do not have the feature of cost estimation. In our project, you can estimate the cost of the project and with the flow of estimation and daily wages, you can identify the flow of average cost of the project and deliver the profit and loss of the project before finishing out and figure out the item loss in the project.

## **2. Aims and Objectives**

Our primary aim is to modernize and streamline the company's construction project management and cost control processes by introducing an efficient digital system.

### **2.1 Aims**

- Digital Transformation: Transition the company from traditional paper-based methods to a fully digital project management and cost control system.
- Enhanced Project Monitoring: Provide real-time project tracking and monitoring capabilities, ensuring projects progress on schedule and within budget.
- Precise Cost Control: Implement tools and features that enable precise tracking and control of project-related costs, from labor to materials and equipment.
- Optimized Resource Allocation: Optimize the allocation of resources, ensuring that labor, machinery, and materials are used efficiently and cost-effectively.
- Transparent Reporting: Facilitate clear and transparent reporting, allowing stakeholders to access up-to-date project information and financial data.

## **2.2 Objectives**

- Digital Record-Keeping: Transition the company from paper-based records to a comprehensive digital record-keeping system, ensuring all project-related information is digitally stored and easily accessible.
- Single Item Management: Provide a user-friendly platform for tracking, recording, and managing each item used in construction projects individually, including materials, equipment, and tools.
- Price Management: Enable efficient management of item prices, allowing the company to update prices, access historical price data, and make informed decisions regarding item costs.
- Inventory Optimization: Offer tools that help the company optimize its inventory by tracking item usage, preventing overstocking or understocking, and reducing unnecessary expenses.
- Cost Transparency: Ensure that every cost associated with individual project items is transparent and easily accessible, aiding in cost control and decision-making.
- Budget Adherence: Assist the company in adhering to project budgets by providing clear insights into the costs of individual items, helping to prevent budget overruns and improve financial planning.

## **3. Expected Outcomes and Deliverables**

The successful completion of this project is anticipated to yield a range of positive outcomes that contribute to the enhancement of the electric vehicle charging experience and the broader adoption of sustainable transportation:

## **3.1 Expected outcomes**

### **1. Streamlined Daily Service Billing:**

We anticipate a significant improvement in the daily service billing process. The software will simplify and automate this critical aspect of the business, reducing the likelihood of errors and ensuring that invoices are generated promptly and accurately. This streamlined billing process will not only save time but also enhance customer satisfaction by providing transparent and error-free billing.

### **2. Effortless Profit-Loss Analysis:**

With the software's advanced capabilities, we expect profit-loss analysis to become effortless and highly insightful. Users will be able to conduct in-depth analyses of their projects' financial performance, gaining a deep understanding of where profits are maximized and where losses can be minimized. This ease of analysis will empower businesses to make data-driven decisions that can significantly boost project profitability.

### **3. Automated Daily Business Reports:**

The system will introduce a remarkable level of automation in generating daily business reports. This means that businesses can expect to receive these reports without manual effort. The reports will provide a quick overview of project progress and financial performance, helping management stay informed and make timely decisions.

### **4. Efficient Project/Equipment Management:**

Efficiency in project and equipment management is a key expectation. The software will streamline the allocation and utilization of resources, ensuring that labor, machinery, and materials are used optimally. This efficiency will contribute to overall project efficiency and cost control.

### **5. Concise Project Summaries:**

Project summaries will be concise yet informative, offering users essential insights into the status of their projects. These summaries will provide a snapshot of milestones achieved, current project status, and any potential challenges that may need attention. This concise format will save time and provide clarity to project stakeholders.

## 3.2 Deliverables

Several important deliverables will be produced if this project is carried out successfully, each of which will advance the design and functionality:

### 1. **Accurate Income and Expense Records:**

The software will deliver accurate and well-maintained income and expense records. This accuracy will ensure transparency in financial dealings and help businesses comply with regulatory requirements. Accurate records are essential for sound financial management.

### 2. **Real-Time Daily Improvement Alerts:**

Users can expect to receive real-time alerts that highlight opportunities for daily project improvements. These alerts will be a proactive way of identifying areas where efficiency can be enhanced and costs can be minimized. They will contribute to ongoing project refinement and financial savings.

### 3. **User-Friendly Interface:**

The software will provide an interface that is user-friendly and intuitive. Users, regardless of their technical expertise, can easily navigate the system. This user-friendliness ensures that the benefits of the software are accessible to all team members, promoting widespread adoption.

### 4. **Data Security Measures:**

Robust data security measures will be put in place to protect sensitive financial information. Delivering these security measures is crucial to maintaining data integrity and ensuring that financial data remains confidential and protected from unauthorized access.

### 5. **User Interface Design:**

A visually appealing and intuitive user interface design that ensures an engaging and efficient user experience.

### 6. **Testing and Validation Documentation:**

Comprehensive testing reports and validation documentation, showcasing the application's reliability, performance, and usability.

## **7. User Documentation:**

User guides, manuals, and instructions outlining the application's functionalities, features, and usage guidelines.

## 4. Methodology

There are several project management methodologies that can be used to develop this software. Here are four methodologies with their advantages and disadvantages:

### 1. Waterfall Methodology:

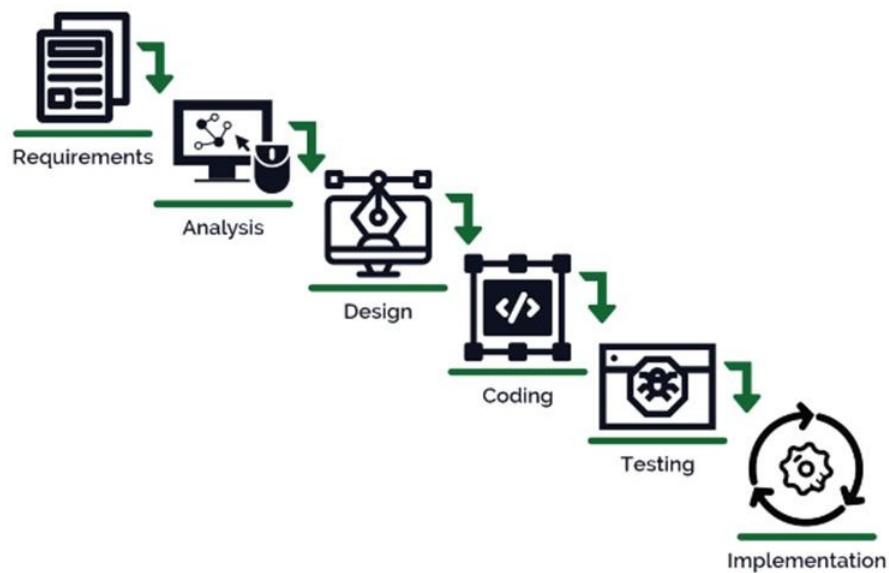


Figure 2: Waterfall methodology

**Advantages:**

1. Clear project structure with well-defined phases.
2. Suitable for projects with stable requirements.
3. Simple to manage and understand.

**Disadvantages:**

4. Lack of flexibility for changing requirements.
5. Limited scope for customer feedback during development.

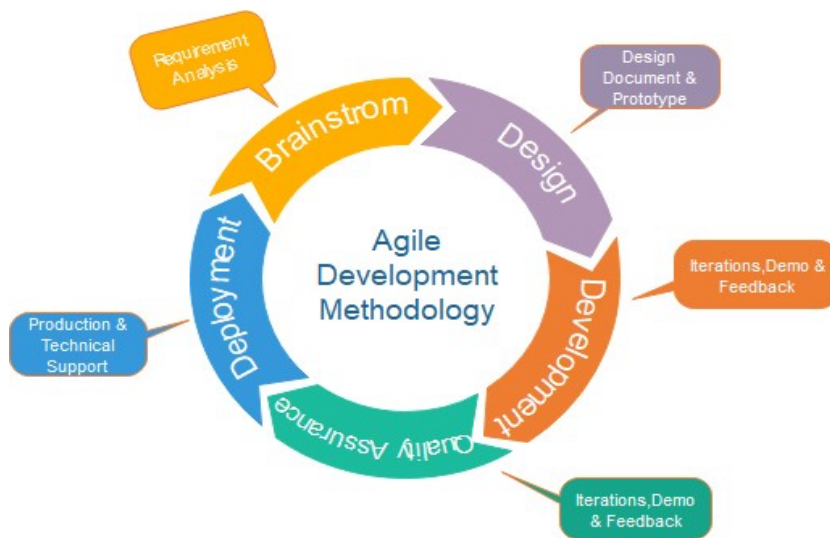
**2. Agile Methodology:**

Figure 3: Agile Methodology

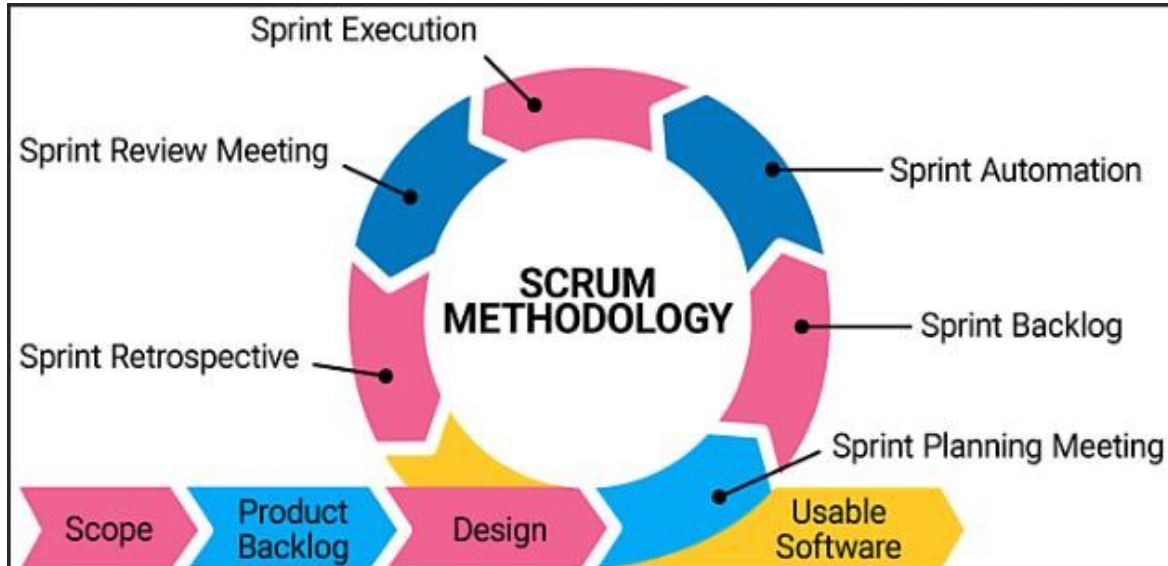
**Advantages:**

1. Flexibility to adapt to changing requirements.
2. Continuous customer involvement and feedback.
3. Faster iterations and quicker deliverables.



**Disadvantages:**

4. Requires active and dedicated customer involvement.
5. Complex management of iterative cycles.

**3. Scrum Methodology**

*Figure 4: Scrum Methodology*

**Advantages:**

1. Emphasizes teamwork and collaboration.
2. Clearly defined roles and responsibilities.
3. Regular progress assessments and adjustments.

**Disadvantages:**

4. Can be challenging to implement for large teams.
5. Highly dependent on team cooperation and communication.

#### **4. Kanban Methodology:**

##### **Advantages:**

1. Visualizes workflow and bottlenecks clearly.
2. Ideal for projects with dynamic or changing priorities.
3. Encourages continuous improvement.

##### **Disadvantages:**

4. Less structured than other methodologies.
5. Requires discipline to manage and control work-in-progress.

#### **5. Selected Methodology**

In my View, Agile methodology is a dynamic and adaptable approach to software development that has gained significant popularity in recent years. It emphasizes collaboration, customer feedback, and iterative development, making it well-suited for complex projects where requirements may evolve over time. In the context of developing construction project management and cost control software, Agile offers a promising path towards efficiently meeting the unique needs of this industry.

*Figure 5: Selected Incremental Methodology*

### **Reason for choosing Agile methodology:**

1. **Flexibility for Evolving Requirements:** Agile's iterative nature allows us to adapt to changing project requirements. In construction, where project dynamics can shift due to unforeseen circumstances, this flexibility is invaluable for ensuring the software remains aligned with real-world needs.
2. **Early User Feedback:** - Agile encourages ongoing collaboration with stakeholders, including construction professionals. Their regular input ensures that the software is designed to address specific industry challenges and streamline project management effectively.
3. **Early Deliverables:** - Agile promotes the delivery of functional components in short cycles. This means that useful features can be made available to users early in the development process, allowing them to provide feedback and validate the software's direction.
4. **Improved Quality:** Agile incorporates frequent testing and quality assurance throughout development. This ensures that the software meets high-quality standards from the outset, which is crucial in construction where errors can have significant consequences.
5. **Efficient Resource Utilization:** Agile allows for the efficient allocation of development resources based on the project's evolving priorities. This ensures that critical features are developed first, optimizing project outcomes.

## **6. Resource Requirement**

### **I. Hardware Requirement**

#### **i. Laptop or PC**

- MacOS Sierra and above (If Mac setup is required)
- Windows 5 or higher
- I3 processor system or higher
- 4 GB RAM or higher
- 100 GB ROM or higher

- ii. **Android Phone (5.0 and above)**
- iii. **iPhone (iOS 9 and above) (If iOS version needs to be checked)**

## **II. Software Requirement**

- i. VS Code
- ii. Flutter
- iii. Mysql
- iv. php
- v. Laravel Framework
- vi. Post Man

## 7. Work Breakdown Structure

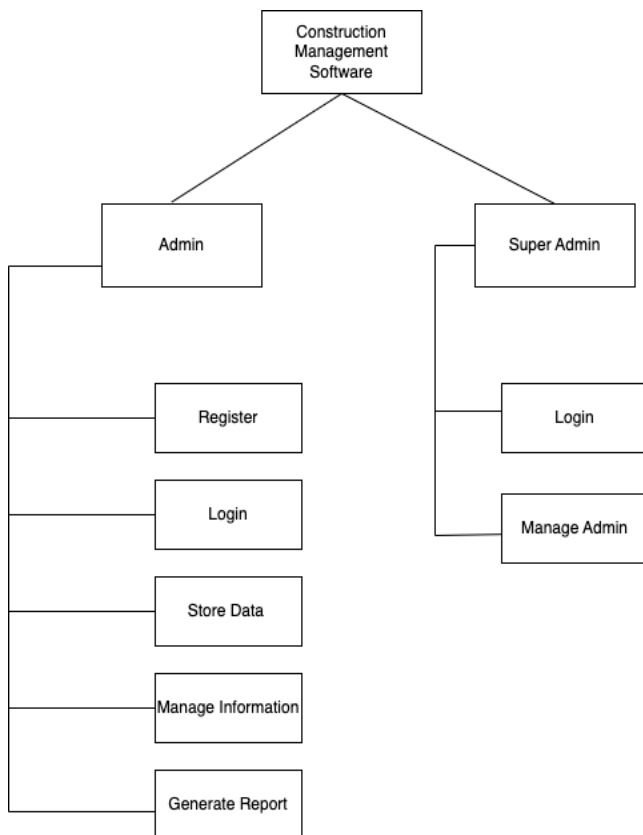


Figure 6: Work Breakdown structure

### **Admin:**

#### **1. Login:**

- Admin can login using id and password.

#### **2. Manage Admin:**

- Manage the admin issues
- Create admin users

**User:**

**3. Register:**

- User can register using personal details.

**4. Login:**

- User can login in his personal account using id and password.

**5. Profile:**

- View and update

**6. Change Password:**

- can change the password within app

**7. Record Keeping of Item. Project. Equipment:**

- Add/Update/Delete/View

**8. Generate Report:**

- Filter by date and customerwise.
- Daily basis transaction
- Daily investigation on the project.

**9. Generate Bill:**

- Generate bill for the customers.

## 8. Milestone Listing

Work	Activities	How to	Duration
Requirement	Collect the information.	Have a meeting with the construction company and a civil engineer	01 September to 06 September
Design	Design the UI and database design	Use tools like, designing tools like Figma,	06 September to 12 September
Development	Actual code is written	Implement of requirement and design into actual web interface.	12 September to 17 October
Testing	Detection and handling errors and bug are done and they are fixed.	Functional and Non-Functional testing is done.	17 October to 25 October
Deployment	With good manual documentation, the project is delivered to the rest end user.	Cloud and in the play store	25 October to 27 October

# 9. Gantt Chart

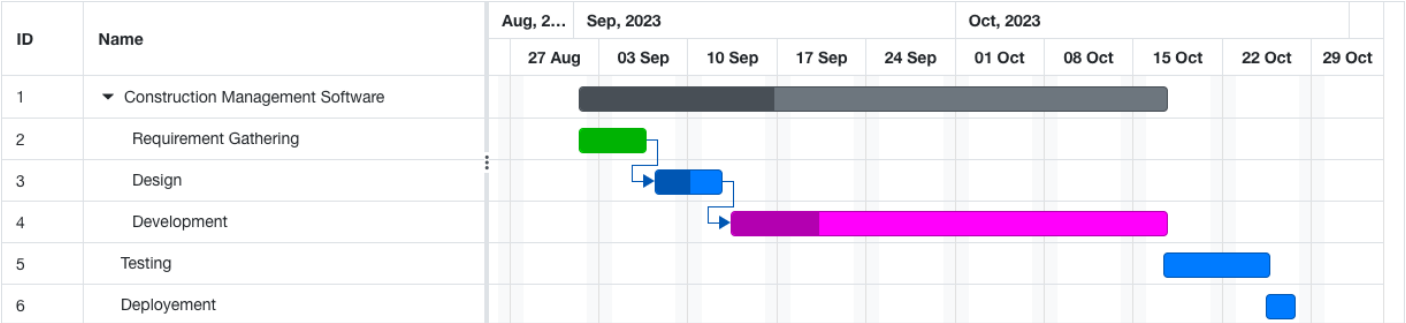


Figure 7: Gantt Chart



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