Software Requirement Specification for
Essential staff work status portal

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Project ID	18
Problem Statement	Campus Maintenance

Problem Description

Design and develop a task management system that facilitates communication and coordination between workers and supervisors. The system should allow supervisors to assign tasks to workers, update the status of tasks, and track the location of workers. Workers should be able to view assigned tasks and communicate with supervisors as needed.

Stack:

Front End	React js, Angular js
Backend	Spring boot(java)
Data Base	Mysql, Postgresql

1. Introduction

1.1. Purpose:

The purpose of this document is to present a detailed description of the essential staff work status portal. This project is helpful as it enhances productivity, ensures tasks are completed in a timely manner, improves coordination between supervisors and workers, and ultimately leads to more efficient and effective task management processes.

1.2. Scope of Project:

- The project aims to create a task management system that assigns tasks to workers based on their skills and work location. It tracks worker locations, monitors task completion, ensures timely reassignment, maintains data security, facilitates communication, and supports scalability and feedback mechanisms.
- Supervisors can assign tasks to workers. After a worker completes a task, the supervisor can update its status as ‘completed.’ The system keeps track of the number of tasks completed by each worker. Additionally, supervisors can adjust the start and end times. If a task exceeds the allotted time, the system can send a reminder notification.

2. System Overview:

2.1. Users Workers/Faculty:

They have the authority to assign specific tasks to individual workers, monitoring task progress and completion, ensuring that each assignment aligns with the worker's skills and expertise. Additionally, supervisors can seamlessly update the status of tasks as workers progress through their assignments, providing real-time visibility into the overall workflow.

2.2. Admin Supervisor:

Overall management of the system, User management, including creating, deleting, and modifying user accounts. Setting system configurations and permissions. Access to all features and functionalities of the system.

2.3. Features:

1. **Login and registration:**

   Workers can login with their existing account and Supervisor can create or add new account for workers.

2. **Task assignment:**

   Supervisors assign tasks to workers by assessing task requirements, reviewing worker profiles to match skills and qualifications, considering worker availability and proximity to the task location, assigning the task to the most suitable worker, providing clear instructions, monitoring task progress, and making adjustments as necessary to ensure successful completion.

3. **Task Status:**

   Supervisors check the task status by viewing real-time updates on task progress, including whether tasks are pending, in progress, or completed.

4. **Location tracking:**

   Supervisors track worker locations to assign work by utilizing GPS or location-based technology integrated into the task management system. This allows supervisors to view the real-time locations of workers on a map interface and assign tasks to those who are closest to the designated work area, optimizing efficiency and minimizing travel time.

5. **Admin Access:**

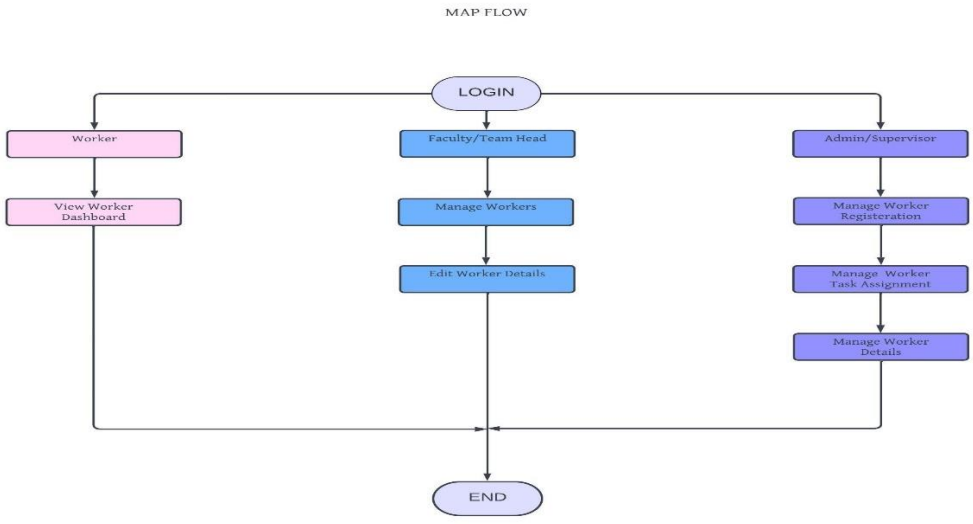
The admin can access a comprehensive overview of all workers within the system, including their names, contact information, nature of work or specialization (such as plumber, electrician, gardener, etc.), and relevant qualifications. Additionally, the admin has visibility into the tasks currently assigned to each worker, as well as the number of tasks completed by them over a specified period.

6. **Admin's Analytical Dashboard:**

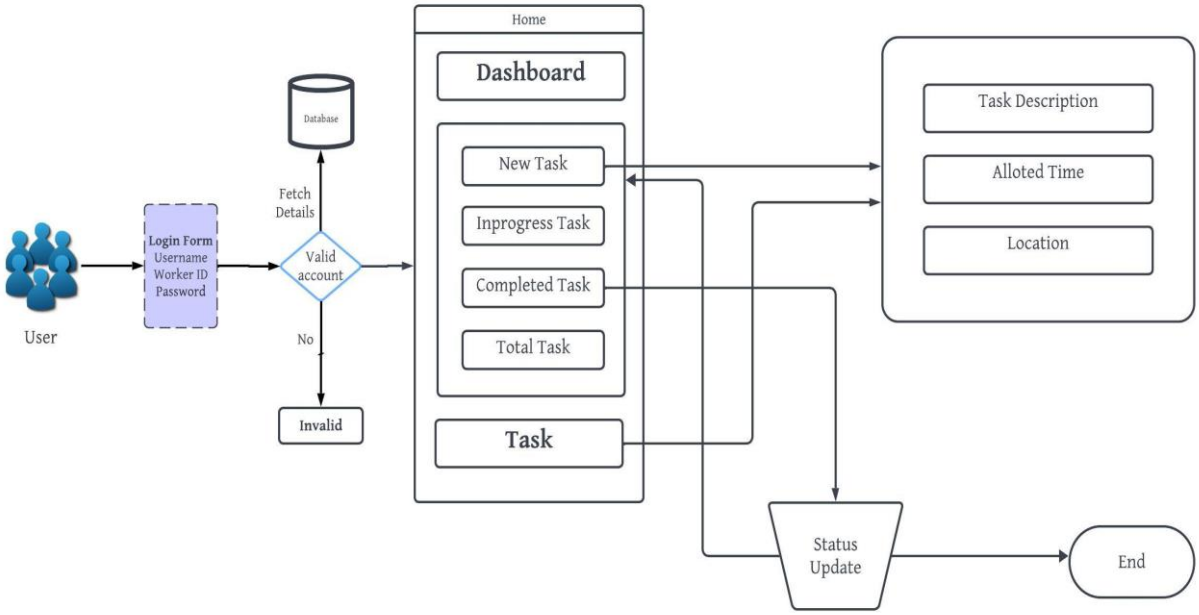
The admin can access a detailed breakdown of the number of workers assigned to each task in a specific location, categorized by the nature of work or specialization. This information provides valuable insights into workforce allocation and task distribution within different areas of operation.

7. **Automated Reminder**

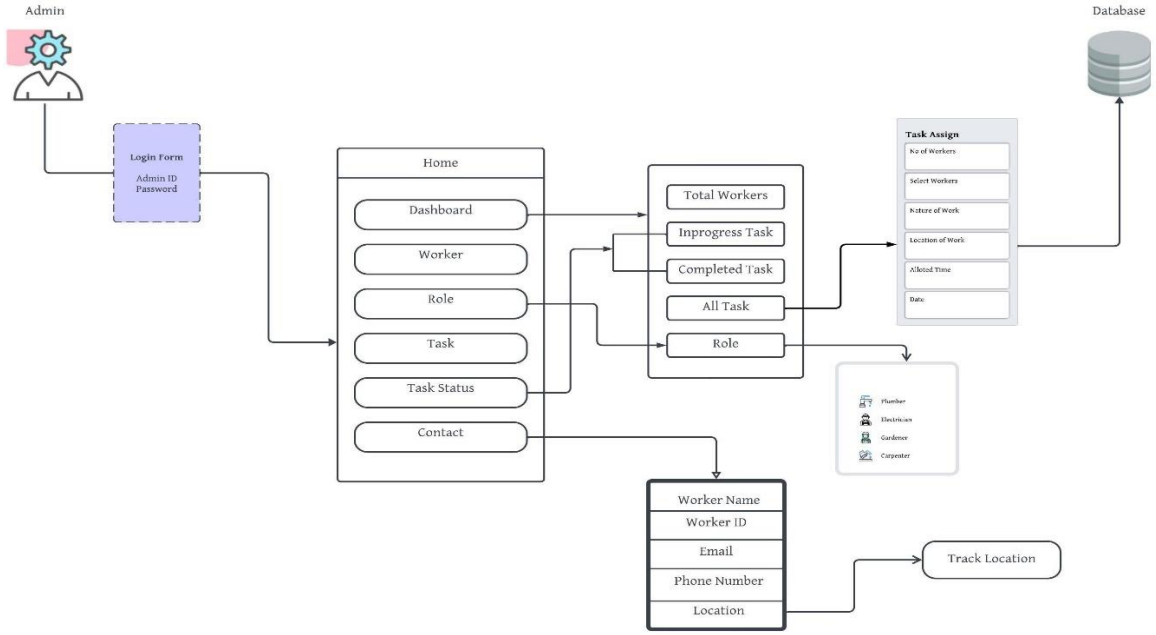
If the workers take more time than allotted to complete the work, they will receive an automated message or phone call prompting them to complete the task promptly. Additionally, supervisors can track the location of workers, and if a worker is not at the designated work location, they will receive an alert message.



USER'S INTERFACE



ADMIN'S INTERFACE



3.1 Functional Requirements:

- **User Management:**
  - Workers can register and login.
  - Admins have access control with an analytical dashboard and dedicated features.
- **Task Assignment:**
  - Supervisor can assign task to the workers.
  - Assignment form contains:
    - Nature of work
    - Location of work
    - Number of workers needed
    - Start and completion of the work
- **Task Status:**
  - Workers can view the current status of their work
  - If the given task is completed it is marked as done.
  - Suppose if the given status is not completed then the task will be rescheduled on tomorrow.
- **Location Tracking:**
  - Supervisor can track the location of the worker and he assign tasks to those who are closest to the designated work area.
- **Admin Dashboard:**
  - Admins can view a list of workers assigned to a specific task.
  - Workers can be filtered by nature of work (electrician, plumber, gardener, etc..).
  - Admins can view details of each worker.
  - Admins can schedule task for each worker based on the nature of work.
  - Admins can update the status of task given to the worker.
- **Analytics Dashboard:**
  - Admin can view the number of tasks assigned to workers.

- Number of tasks is completed based on the category

3.2. Non-Functional Requirements:

- **Performance:** The system is responsive and efficient, capable of handling a large number of tasks and users without significant slowdowns or delays.
- **Scalability:** The system could be able to scale easily to accommodate growing numbers of users, tasks, and data without compromising performance or stability.
- **Reliability:** The system is reliable and available whenever users need it, with minimal downtime or service interruptions.
- **Security:** The application should implement robust security measures to protect sensitive data, prevent unauthorized access, and mitigate potential security threats or attacks.
- **Maintainability:** The application is easy to maintain and update, with clean and modular code, well-documented APIs, and effective version control practices.
- **Usability**: The user interface should be intuitive and user-friendly, with clear and concise error messages provided to guide users in case of input errors or system failures.

Backend:

1. **Worker entity**

name	String
Worker Id	String
Total Task	Integer
Nature of Work	String

2. **Task Entity**

Worker id	String
Details	Array of Objects category: String (drop down) Nature of Work: String numberOfWorkers: Number Workers Id: Array of Objects Task Id: String Location: String Duration: Time

3. **Status Entity**

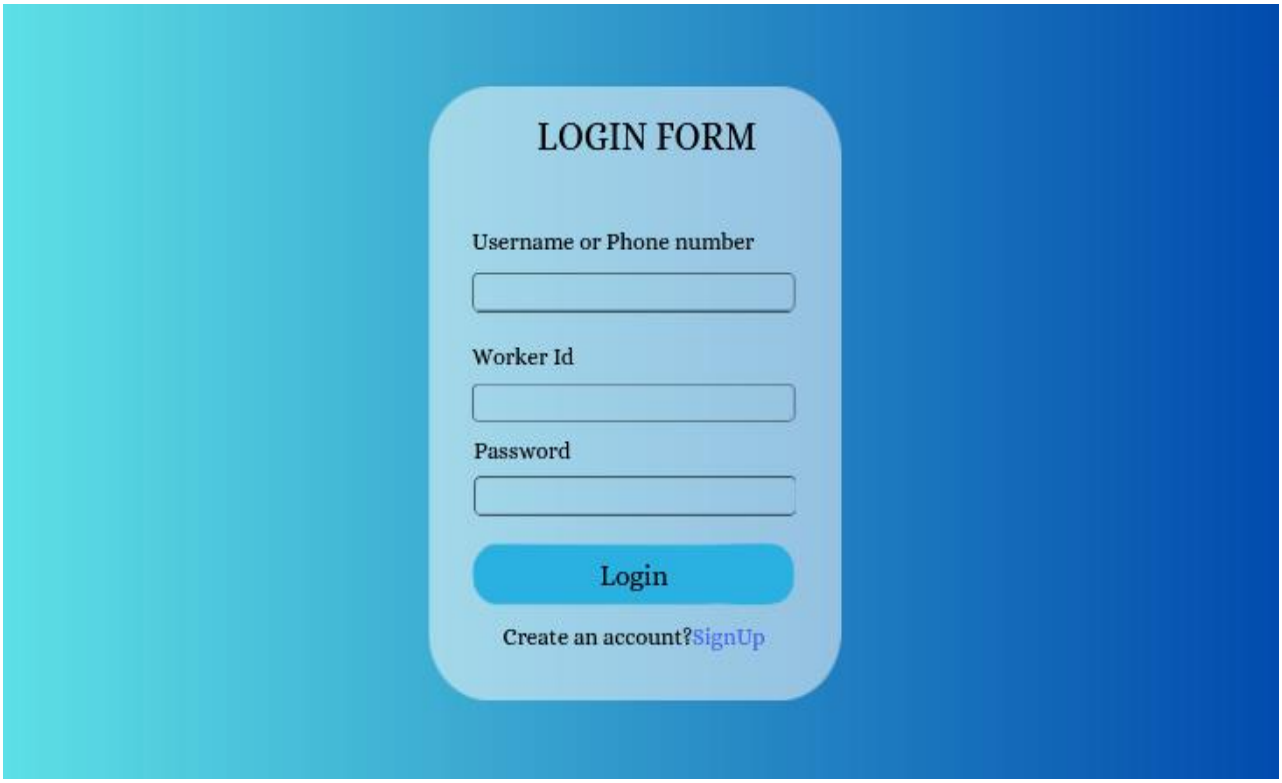
Task Id	String
Worker Id	String
Duration	Time
Status	String (drop down)

4. **Contact Entity**

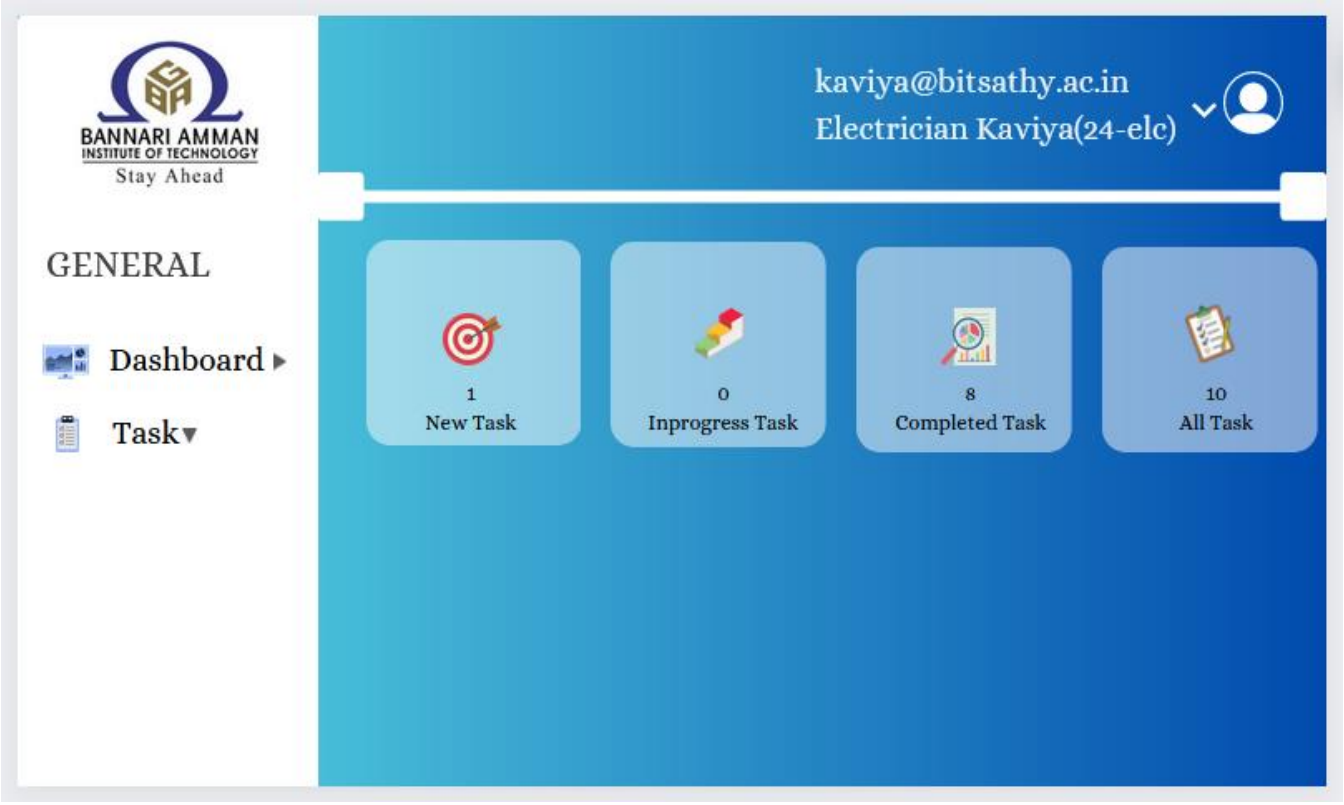
Worker Name	String
Worker Id	String
Mobile	Integer
Location	(latitude, longitude)

Prototype of the Project:

1. *Login form*

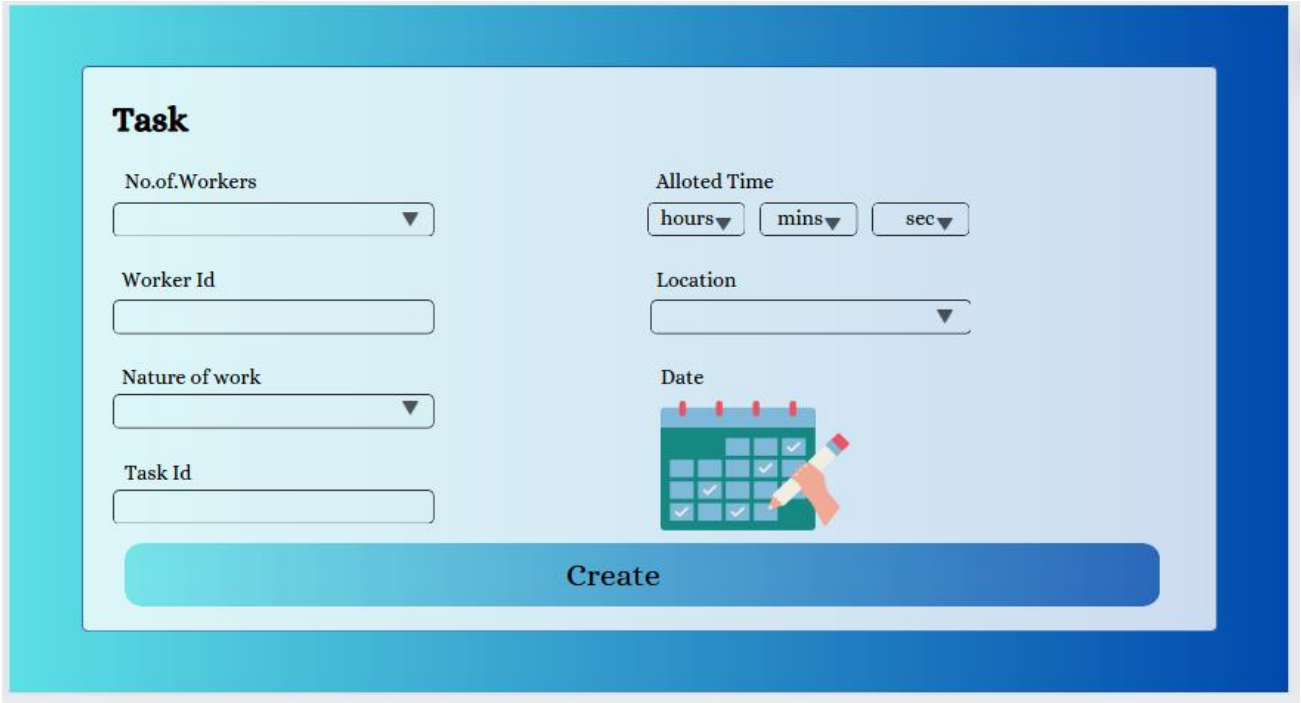


2. *Worker's Dashboard*



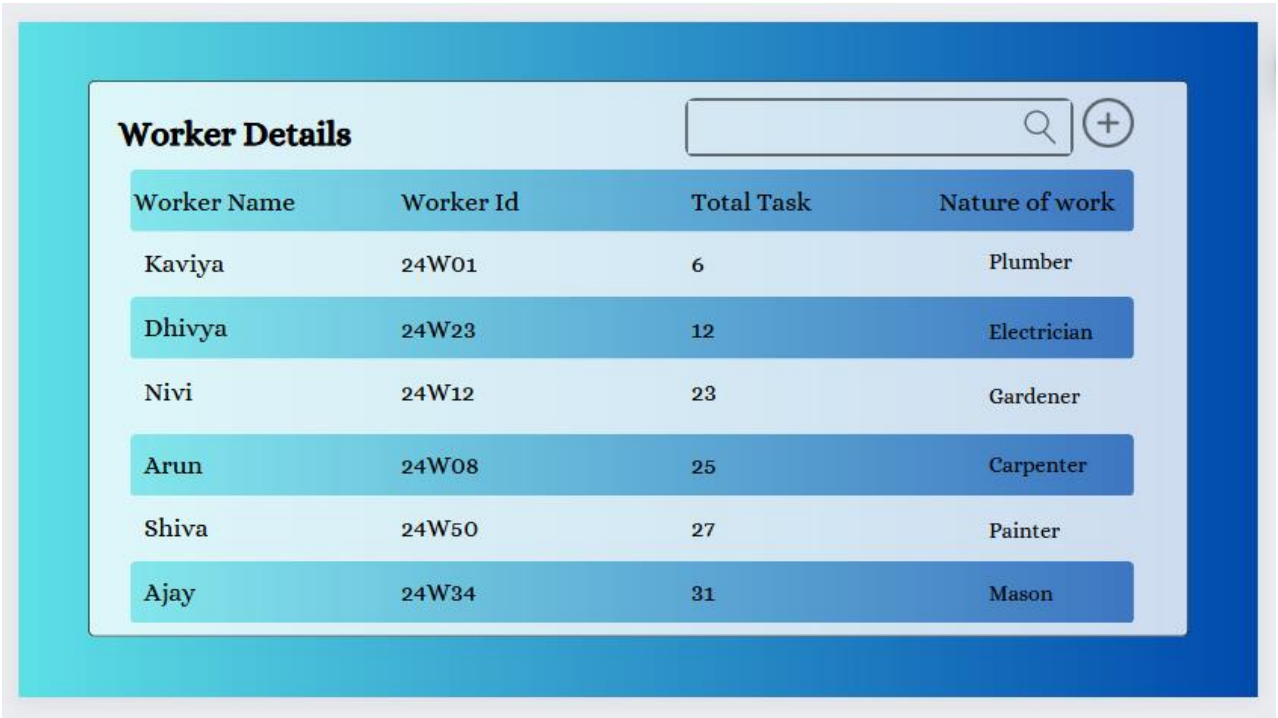
3. *Admin's Dashboard*

4. *Create Task*



5. *Task Status*

6. *Worker's Details*



7. *Contact Details*

Contact Details

Worker Name	Worker Id	Mobile	Location
Kaviya	24W01	9823487654	
Dhivya	24W23	8734803456	
Nivi	24W12	8845638104	
Arun	24W08	7843751095	
Shiva	24W50	9578438766	
Ajay	24W34	7708917943