

Employee Task Tracking System Using Java Spring Boot

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Abstract: The Employee Task Tracking System (ETTS) is a software solution designed to streamline the management, tracking, and execution of tasks within an organization. This system provides an intuitive platform for employees to create, assign, and monitor their daily tasks, while enabling managers to oversee performance, progress, and deadlines in real time. The ETTS integrates task categorization, priority management, time tracking, and reporting features to ensure that work is completed efficiently and within set timeframes.

By offering a centralized dashboard, the system enhances collaboration and communication between team members and supervisors, allowing for transparent task distribution and progress monitoring. Additionally, the system includes notifications, reminders, and alerts to keep users on track with their responsibilities. The Employee Task Tracking System also generates insightful reports on productivity, task completion rates, and individual performance metrics, supporting data-driven decision-making and resource allocation.

This solution is adaptable for use in various organizational structures, from small businesses to large enterprises, and aims to improve overall workflow efficiency, accountability, and employee engagement by providing a structured approach to task management.

I. INTRODUCTION

In today's fast-paced and dynamic work environment, effective task management is crucial for the success of any organization. Employees are often required to juggle multiple tasks with varying levels of complexity and urgency, which can result in inefficiencies, missed deadlines, and a lack of clarity regarding responsibilities. For managers, overseeing the status of tasks, ensuring timely completion, and fostering collaboration among team members can become increasingly challenging, especially as teams grow in size and complexity.

The Employee Task Tracking System (ETTS) is developed to address these challenges by providing a comprehensive tool for managing tasks within an organization. It is designed to simplify task assignment, tracking, and reporting while enhancing visibility and communication between employees and managers. The system offers a user-friendly interface where employees can create, categorize, prioritize, and track their tasks, while managers can monitor individual and team progress, allocate resources effectively, and ensure that project deadlines are met.

II. SOFTWARE ANALYSIS

- **Programming** : JAVA
- **Client Side** : HTML
- **Database** : MySQL 5.
- **Web Server** : TOM CAT

JAVA

Java 17 is the latest Long-Term Support (LTS) version and is highly recommended for building production-grade applications like the ETTS. Java 17 is stable, well-supported, and provides many features that enhance performance, security, and developer productivity.

HTML

To build a web-based Employee Task Tracking System (ETTS), the HTML (Hypertext Markup Language) forms the foundation of the user interface. HTML defines the structure and content of web pages, allowing you to create forms, tables, buttons, and other interactive elements required for task management.

MYSQL

MySQL is an open-source relational database management system (RDBMS) that is widely used for managing databases and handling the storage, retrieval, and manipulation of structured data. It is based on the Structured Query Language (SQL), which is used for querying and managing data in a relational database.

MVC

The [Model-View-Controller \(MVC\)](#) framework is an architectural/design pattern that separates an application into three main logical components Model, View, and Controller. Each architectural component is built to handle specific development aspects of an application. It isolates the business logic and presentation layer from each other. It was traditionally used for desktop graphical user interfaces (GUIs). Nowadays, MVC is one of the most frequently used industry-standard web development frameworks to create scalable and extensible projects. It is also used for designing mobile apps.

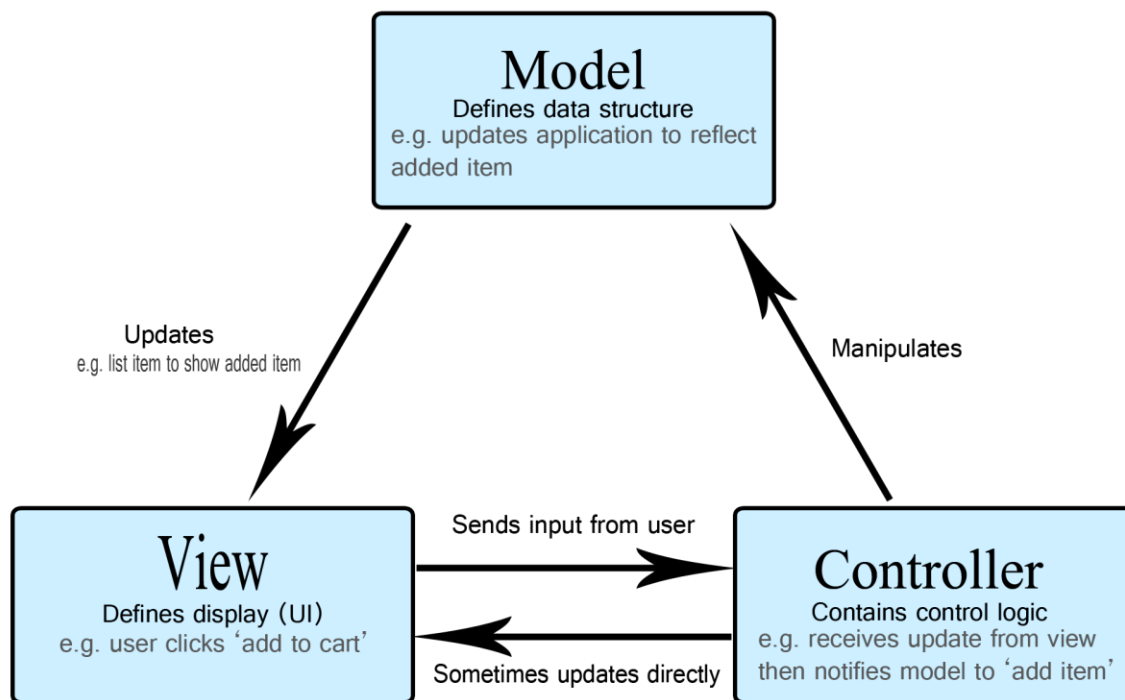


Fig.1.MVC Diagram

II EXISTING SYSTEM

An existing system for Employee Task Tracking refers to the current solution that an organization uses to manage, track, and assign tasks to employees. This system can vary in complexity, ranging from simple manual methods to sophisticated software solutions.

1. Manual Systems :

In many organizations, task tracking might still be done manually, using tools like spreadsheets (e.g., Microsoft Excel or Google Sheets) or even paper-based systems

Features of Manual Systems:

Task Assignment: Tasks are assigned to employees manually by managers or team leaders.

Tracking Progress: Managers check in with employees regularly to track progress on tasks.

Reporting: Task completion reports are created manually or by using basic spreadsheet functions.

2. Basic Software Solutions (Task Management Tools)

Many organizations use basic task management software or project management tools to track employee tasks. Examples of such systems include Trello, Asana, Monday.com, Basecamp, or Wrike.

Features of Basic Task Management Systems:

Task Creation and Assignment: Managers can create tasks and assign them to employees, often with deadlines and priorities.

Task Progress Tracking: Employees and managers can update the status of tasks (e.g., "Not Started," "In Progress," "Completed").

Notifications and Reminders: Users are notified of task assignments, approaching deadlines, or updates.

PROPOSED SYSTEM

A proposed system for an employee task tracking system should focus on efficiency, ease of use, and scalability.

1. System Overview

A web-based or mobile-friendly platform to track, manage, and analyze employee tasks and performance in real time. The system should integrate with existing tools (e.g., project management software, calendars) and support customization for various industries.

2. Task Management

Task Creation & Assignment: Managers and team leads can create tasks and assign them to employees.

3. Priority Setting: Tasks can be categorized as high, medium, or low priority.

Subtasks: Breakdown of larger tasks into manageable components.

4. Tracking and Progress Monitoring

Status Updates: Employees can update task progress (e.g., "Not Started," "In Progress," "Completed").

5. Time Tracking:

Log hours spent on each task for productivity insights.

6. Reminders & Notifications:

Automated alerts for deadlines and overdue tasks.

IV. MODULES

1. USER MANAGEMENT MODULE

User Roles and Permissions: Define roles like admin, manager, and employee, with specific permissions.

Profile Management: Users can update their personal details, contact information, and preferences.

Authentication: Secure login with multi-factor authentication (MFA) and password recovery

2. ADMIN MODULE

System Configuration: Manage system settings, workflows, and templates.

User Management: Add, edit, or deactivate users.

Backup and Recovery: Ensure data backup and system recovery in case of failures.

3. TASK MANAGEMENT MODULE

Task Creation: Create tasks with descriptions, deadlines, and attachments.

Assignment: Assign tasks to individuals or teams.

Subtasks: Break larger tasks into smaller parts.

Priority Levels: Categorize tasks as high, medium, or low priority.

4. REPORTING MODULE

Task Reports: View completed, pending, and overdue tasks.

Performance Metrics: Analyze individual and team productivity.

Custom Reports: Generate reports based on filters like date range, employee, or project.

Dashboards: Visualize workload and performance trends in real time.

ARCHITECTURE DIAGRAM

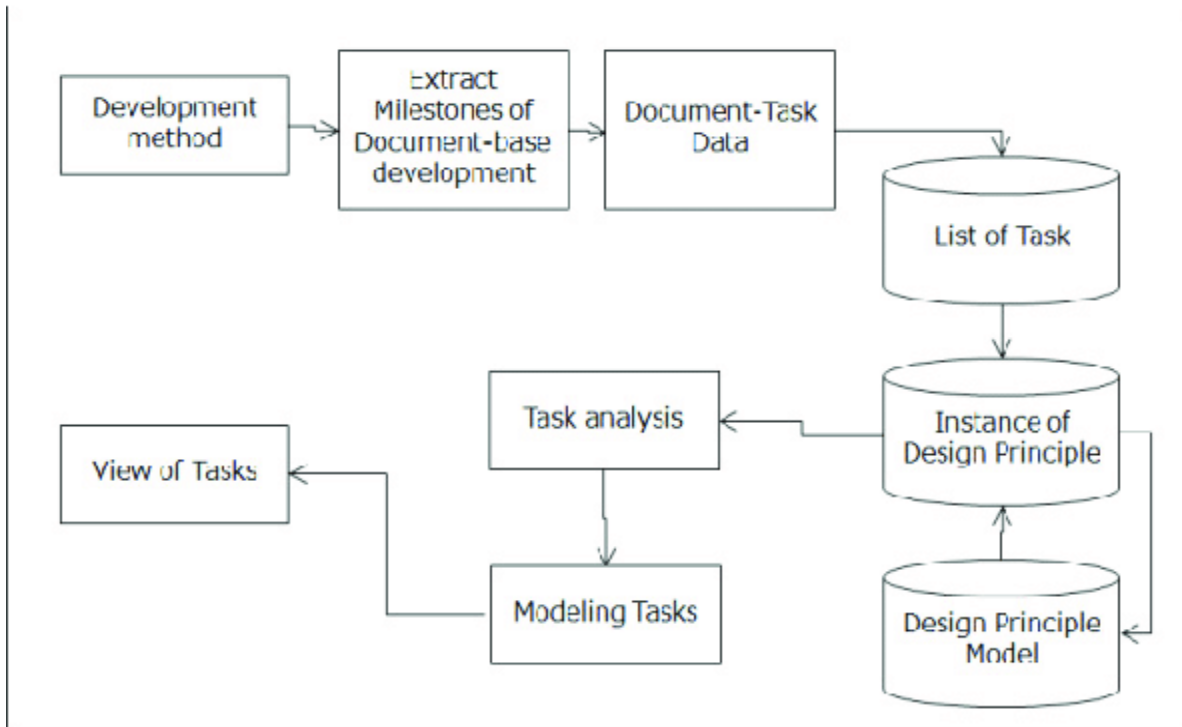


Fig.2. Architecture diagram

V. RESULT

Implementing an Employee Task Tracking System results in significant improvements in organizational efficiency, accountability, and productivity. By centralizing task management, employees gain clarity on their responsibilities and deadlines, reducing confusion and enhancing focus on priorities. Managers benefit from real-time visibility into task progress, ensuring better workload distribution and timely intervention. Transparent tracking fosters accountability, while automated reminders and performance metrics ensure deadlines are met. The system promotes collaboration through in-task discussions and file sharing, minimizing bottlenecks and improving teamwork.

With insightful reports and analytics, managers can make data-driven decisions to optimize resources and align tasks with organizational goals. Employees experience higher satisfaction due to fair workload distribution, recognition for performance, and reduced stress. Ultimately, the system drives cost efficiency, faster project deliveries, improved client satisfaction, and a competitive edge, contributing to overall business growth.

VI. CONCLUSION

In conclusion, an Employee Task Tracking System is a powerful tool for enhancing organizational efficiency, employee accountability, and overall productivity. By streamlining task management, fostering collaboration, and providing actionable insights through data-driven reporting, the system empowers teams to work more effectively and meet organizational goals.

It reduces confusion, ensures timely task completion, and improves employee satisfaction by promoting clarity and balanced workloads. Ultimately, such a system not only optimizes resource utilization but also drives business growth, making it an invaluable asset for any organization aiming for long-term success.

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