PRINCE2™- Project Product Description

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Note: This document is only valid on the day it was printed

Revision History

Date of next revision:

Revision Date	Previous Revision Date	Summary of Changes	Changes Marked

Approvals

This document requires the following approvals. A signed copy should be placed in the project files.

Name	Signature	Title	Date of Issue	Version

Distribution

This document has been distributed to:

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Project Product Description
< personnel attendance system >

Overview

Purpose

The Project Product Description is a special form of Product Description that defines what the project must deliver in order to gain acceptance. It is used to:

- Gain agreement from the user on the project's scope and requirements
- Define the customer's quality expectations
- Define the acceptance criteria, method and responsibilities for the project.

The Product Description for the project product is created in the Starting up a Project process as part of the initial scoping activity, and is refined during the Initiating a Project process when creating the Project Plan. It is subject to formal change control and should be checked at stage boundaries (during Managing a Stage Boundary) to see if any changes are required. It is used by the Closing a Project process as part of the verification that the project has delivered what was expected of it, and that the acceptance criteria have been met.

Contents

The Project Product Description should cover the following topics.

Advice

The Project Product Description is derived from the project mandate, discussions with the Senior User and Executive – possibly via scoping workshops and the request for proposal (if in a commercial customer/supplier environment).

A Product Description for the project product can take a number of formats, including: Document, presentation slides or mind map; or Entry in a project management tool.

The following quality criteria should be observed:

- The purpose is clear
- The composition defines the complete scope of the project
- The acceptance criteria form the complete list against which the project will be assessed
- The acceptance criteria address the requirements of all the key stakeholders (e.g. operations and maintenance)
- The Project Product Description defines how the users and the operational and maintenance organizations will assess the acceptability of the finished product(s):
  - All criteria are measurable
  - Each criterion is individually realistic
  - The criteria are realistic and consistent as a set. For example, high quality, early delivery and low cost may not go together
  - All criteria can be proven within the project life (e.g. the maximum throughput of a water pump), or by proxy measures that provide reasonable indicators as to whether acceptance criteria will be achieved post-project (e.g. a water pump that complies with design and manufacturing standards of reliability)
- The quality expectations have considered:
  - The characteristics of the key quality requirements (e.g. fast/slow, large/small, national/global)
  - The elements of the customer's quality management system that should be used
  - Any other standards that should be used
  - The level of customer/staff satisfaction that should be achieved if surveyed.

Title

personnel attendance system

Purpose

The Personnel Attendance System project is designed to improve time management and employee attendance in organizations. This software allows managers and HR personnel to accurately and efficiently record and track employee check-ins and check-outs. Users of this system will include HR managers and senior managers. The primary goals of this project include improving efficiency, reducing manual entry errors in attendance records, and providing precise and timely reports for management decisions and payroll calculations. The software should be appropriately sized, high quality, and flexible enough to meet the diverse needs of organizations.

Composition

The main products provided by this project include:

- Management Dashboard: Displays a summary of employee attendance status.
- Personnel Management Module: Allows viewing, adding, and editing employee information.
- Reports Module: Generates and displays various attendance reports based on date, personnel, etc.
- Alerts and Notifications Module: Sends alerts and notifications to managers in case of issues or anomalies.
- Remote Control Module: Allows system management and information viewing from anywhere using the internet.
- Security and Access Module: Manages user access levels and ensures information security.

Derivation

The final product is derived from the following resources and existing products:

1. Existing Attendance Systems: Modifying and improving current employee attendance systems.
2. Design Specifications: Utilizing defined design specifications and requirements for the software.
3. Feasibility Report: Results of feasibility studies indicating the need for such a system in organizations.
4. Mandate Project: Organizational goals and needs assigned to the project.

Development Skills Required

The following skills are required to develop this product:

1. Frontend Development: Proficiency in HTML, CSS, JavaScript, and related frameworks like React or Angular.
2. Backend Development: Proficiency in programming languages like Python or PHP and using frameworks such as Django or Laravel.
3. Database Management: Experience with databases like MySQL or PostgreSQL and the ability to design and manage databases.
4. UI/UX Design: Ability to design attractive user interfaces and efficient user experiences.
5. Security: Knowledge of information security principles and the ability to implement security protocols.
6. Project Management: Ability to manage software projects and familiarity with Agile methodologies.

Customer's Quality Expectations

For the Personnel Attendance System, the customer's quality expectations include:

1. High Accuracy and Precision: The system must accurately record employee check-ins and check-outs to prevent manual errors.
2. High Efficiency and Performance: The system must process information and generate reports in real-time without noticeable delays or slowdowns.
3. User-Friendly Interface: The interface should be simple, attractive, and user-friendly, allowing users to navigate easily.
4. Information Security: The system must use strong security protocols to ensure employee information is well-protected.
5. Adaptability and Customization: The system should be adaptable to various organizational needs and customizable based on specific requirements of each organization.
6. Appropriate Support and Maintenance: Provide timely and effective support and maintenance services to ensure continuous system performance

Acceptance Criteria	Project Level Quality Tolerances	Acceptance Method	Acceptance Responsibilities
QA Team	Unit and Integration Tests	Maximum 0.1% error in data recording	High accuracy in recording entry and exit data
Development and Support Team	Performance and Load Testing	Response time less than 1 second for usual operations	High efficiency and performance
UI/UX Design Team	UX Evaluations and Usability Tests	Score above 90% in User Experience (UX) tests	User-friendly and easy-to-use interface
Information Security Team	Security and Penetration Tests	Implementation of SSL, data encryption, and security protocols	Information and data security
Development and Support Team	Customization Capability Evaluation	90% system feature configurability without coding	Adaptability and customization capability
Support Team	Support Performance Monitoring	Response time to support requests less than 24 hours	Proper support and maintenance

A.

project User analysis

The primary users of the personnel attendance management system include the following groups:

1. HR Managers: Responsible for monitoring and managing personnel attendance and analysing data for managerial decision-making.
2. Senior Managers: Require overall and summarized reports on personnel attendance to review the organization's overall performance.
3. IT Support Team: Responsible for installing, maintaining, and providing technical support for the system.

project Task analysis

The key tasks that users need to perform include the following:

1. HR Managers:
    - Viewing and editing personnel attendance records.
    - Generating and viewing various reports, including monthly and annual reports.
    - Setting and managing attendance policies and working hours.
    - Editing personnel information such as personal details or work shifts, etc.
2. Senior Managers:
    - Viewing summarized reports of personnel attendance.
    - Analysing data for strategic decision-making.
3. IT Support Team:
    - Installing and configuring the system.
    - Maintaining and updating the system.
    - Providing technical support in case of issues.

User Task Analysis

HR Managers:

1. **Goal**:
    - Managing personnel attendance information.
2. **Prerequisites**:
    - Logging into the system with a valid username and password.
    - Accessing personnel attendance information.
3. **Steps**:
    - Log into the system.
    - View the management dashboard.
    - Select the desired personnel.
    - View and edit attendance information.
    - Generate and save various reports.
    - Set attendance policies.

Senior Managers:

1. **Goal**:
    - Receiving summarized reports on personnel attendance.
2. **Prerequisites**:
    - Logging into the system with a valid username and password.
    - Accessing the reports section.
3. **Steps**:
    - Log into the system.
    - View the management dashboard.
    - Select the desired reports.
    - View and analyze reports.
    - Save and print reports if needed.

IT Support Team:

1. **Goal**:
    - Installing, configuring, and providing technical support for the system.
2. **Prerequisites**:
    - Access to servers and network equipment.
    - Access to installation and configuration documentation.
3. **Steps**:
    - Review hardware and software requirements.
    - Install necessary software.
    - Configure the system.
    - Perform performance tests.
    - Provide technical support in case of issues.
    - Update and maintain the system.

project Domain analysis

In this domain analysis, we identify and map the elements involved in the personnel attendance system and their relationships. This helps to understand the system's context and its interactions with various elements.

Elements and Relationships

The main elements in the personnel attendance system domain include:

1. HR Managers
2. Senior Managers
3. IT Support Team
4. Personnel Attendance System
5. Attendance Records
6. Reports
7. Authentication System
8. Employee Database

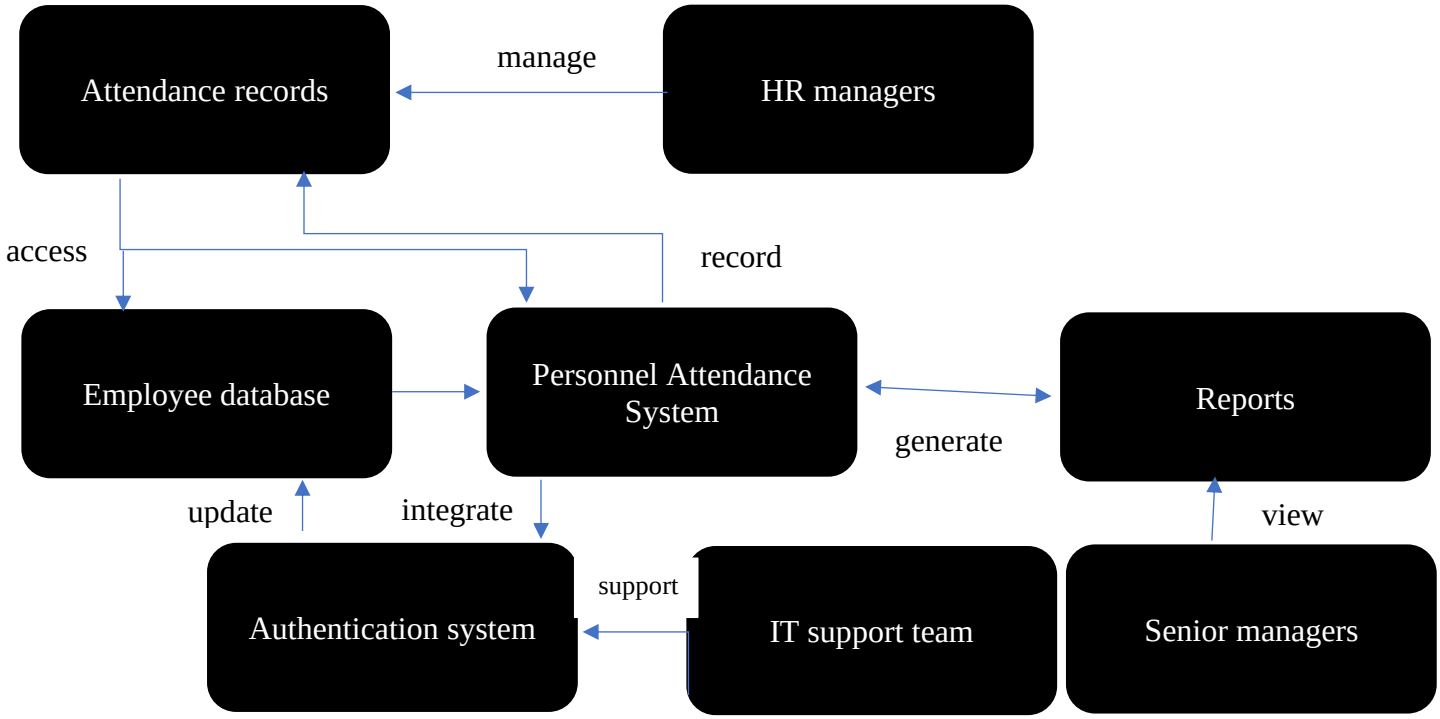
The following are the descriptions of each element and their relationships:

1. HR Managers:
    - Role: Managing employee attendance records, generating reports, and updating employee information.
    - Relationships:
        - Manage -> Attendance Records
        - Generate -> Reports
        - Update -> Employee Database
2. Senior Managers:
    - Role: Viewing summarized reports of employee attendance.
    - Relationships:
        - View -> Reports
3. IT Support Team:
    - Role: Installing, configuring, maintaining, and supporting the attendance system.
    - Relationships:
        - Install/Configure/Maintain -> Personnel Attendance System
        - Support -> Authentication System
4. Personnel Attendance System:
    - Role: Recording and managing attendance data.
    - Relationships:
        - Record -> Attendance Records
        - Interface with -> Employee Database
        - Authenticate -> Authentication System

5. Attendance Records:
    - Role: Storing employee attendance data.
    - Relationships:
        - Stored in -> Personnel Attendance System
        - Accessed by -> HR Managers
6. Reports:
    - Role: Providing summarized attendance data for analysis.
    - Relationships:
        - Generated by -> HR Managers
        - Viewed by -> Senior Managers
7. Authentication System:
    - Role: Verifying user identities and managing access control.
    - Relationships:
        - Authenticate -> HR Managers, Senior Managers, IT Support Team
        - Integrate with -> Personnel Attendance System
8. Employee Database:
    - Role: Storing detailed employee information.
    - Relationships:
        - Updated by -> HR Managers
        - Accessed by -> Personnel Attendance System

Domain Diagram

Below is a visual representation of the elements and their relationships:



CRUD Analysis

For each information object, consider the tasks of Create, Read, Update, and Delete (CRUD):

1. Attendance Records:
    - Create: Automatically created by the attendance system when employees clock in/out.
    - Read: Accessed by HR managers for attendance monitoring.
    - Update: Updated by HR managers if manual corrections are needed.
    - Delete: Rarely deleted, may be archived after a period.

2. Reports:
    - Create: Generated by HR managers.
    - Read: Viewed by HR managers and senior managers.
    - Update: Edited by HR managers if necessary.
    - Delete: Deleted or archived by HR managers after some time.
3. Employee Database:
    - Create: Created by HR managers for new employees.
    - Read: Accessed by the attendance system and HR managers.
    - Update: Updated by HR managers.
    - Delete: Entries may be archived to preserve records.

project Requirement's analysis

Functional Requirements

1. Clock-in and Clock-out Recording:
    - The system must be able to record the clock-in and clock-out times of each employee.
    - Each entry must include precise time and employee ID information.
2. Reporting:
    - The system must be capable of generating daily, weekly, monthly, and annual attendance reports.
    - Reports should be generated and saved in various formats such as PDF, Excel, etc.
3. User Management:
    - The system must allow adding, editing, and deleting users (employees).
    - Administrators must be able to manage user roles and access levels.

4. Authentication:
    - The system must support two-factor authentication (2FA) for users.
    - The system must integrate with the company's user database for identity verification.
5. Error Management:
    - The system must detect and manage errors related to attendance recording.
    - Errors must be reported to administrators, and it should be possible to edit error records.
6. Dashboard Display:
    - The system must provide a dashboard to display real-time attendance status of employees.
    - The dashboard should include charts and summary information on attendance.
7. Multi-language Support:
    - The system must support multiple languages to accommodate users with different language preferences.

Non-Functional Requirements

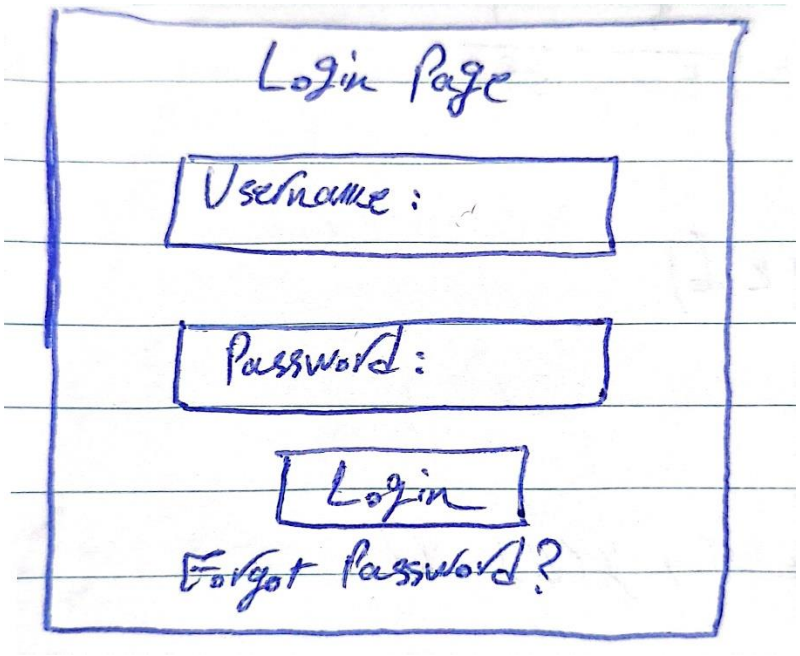
1. Security:
    - The system must have strong security mechanisms to prevent unauthorized access.
    - Data must be stored in an encrypted format.
2. Reliability:
    - The system must be stable and resistant to failures.
    - In case of failure, the system must be quickly recoverable.

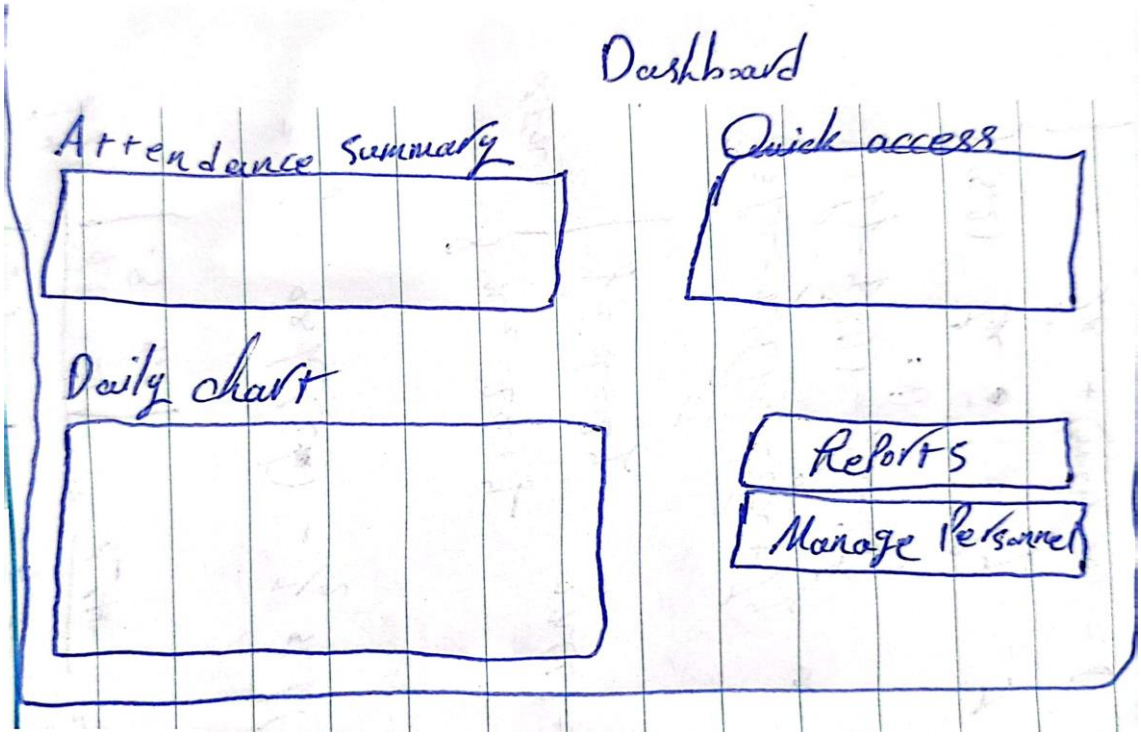
3. Performance:
    - The system must be capable of processing a large number of attendance records in a short time.
    - The system's response time should be less than 2 seconds.
4. Scalability:
    - The system must be scalable to support an increasing number of users and records.
5. Usability:
    - The system must have a user-friendly and simple interface.
    - Users should be able to use the system easily without complex training.
6. Compatibility:
    - The system must be compatible with various browsers and devices (PCs, tablets, and mobile phones).
7. Support and Maintenance:
    - The system must have comprehensive documentation for support and maintenance.
    - The support team must be able to quickly respond to user issues and requests.

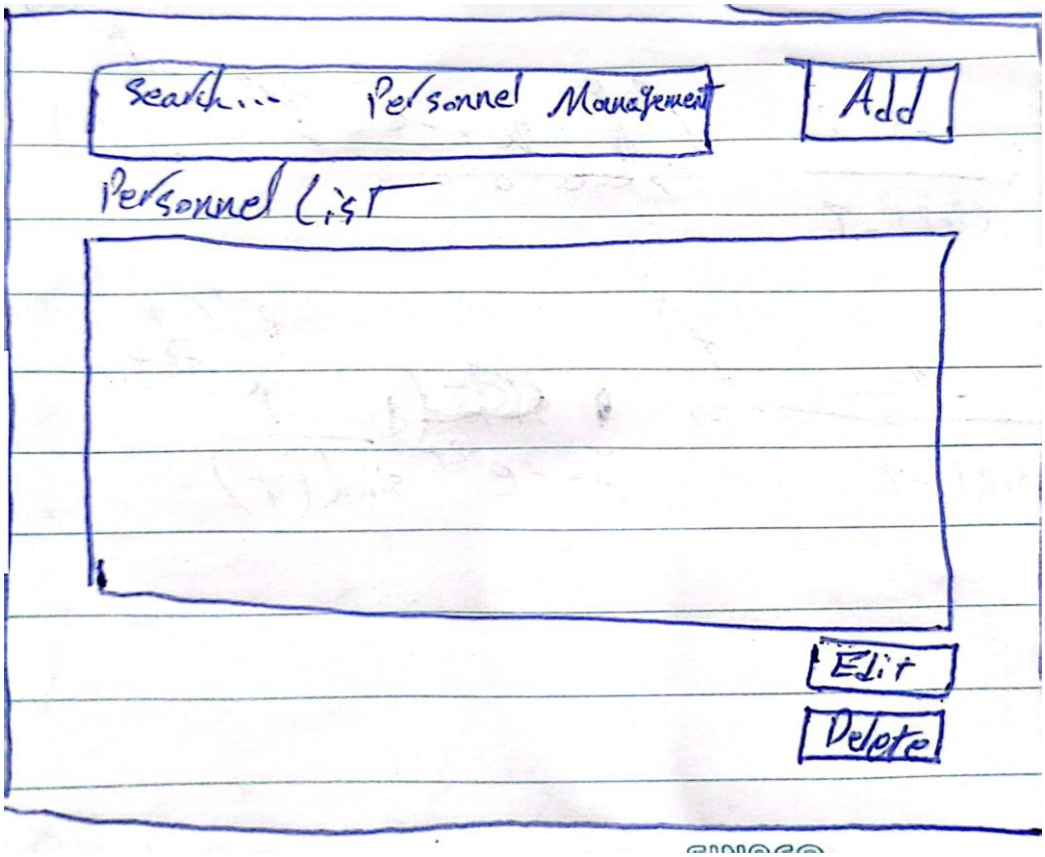
B.

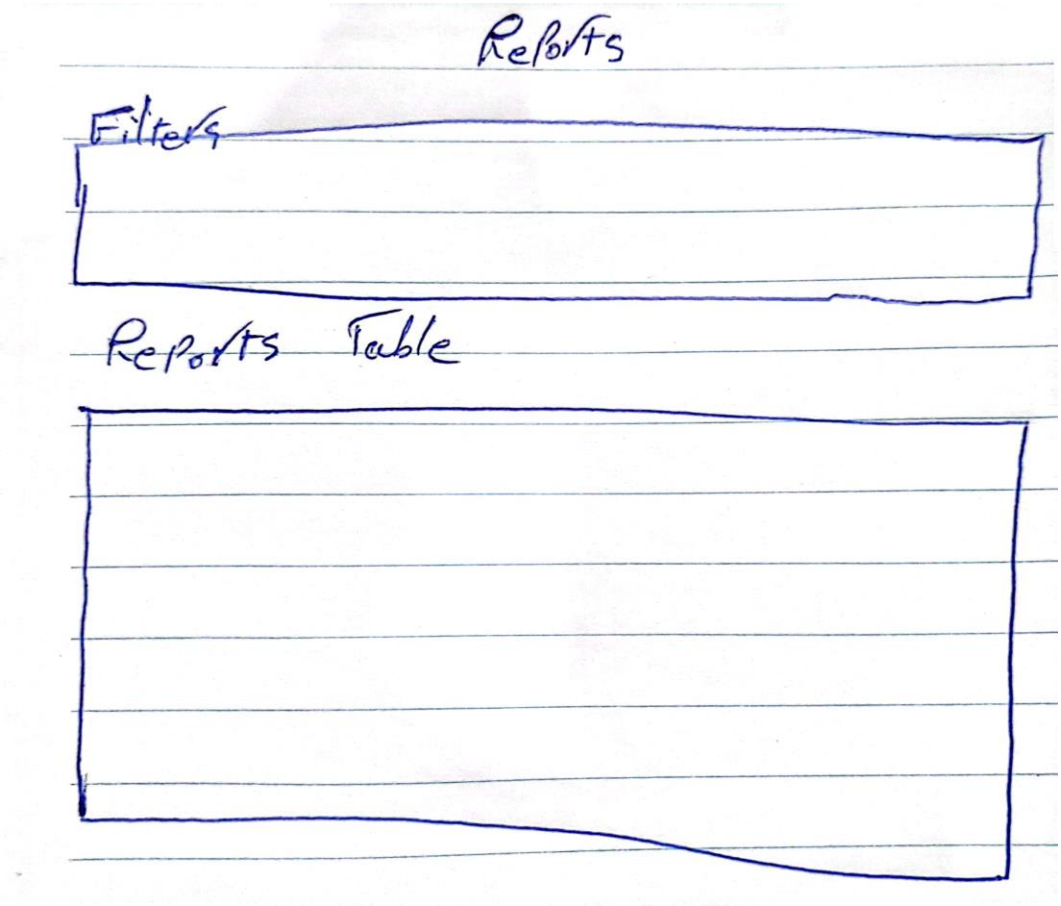
project Sketches design

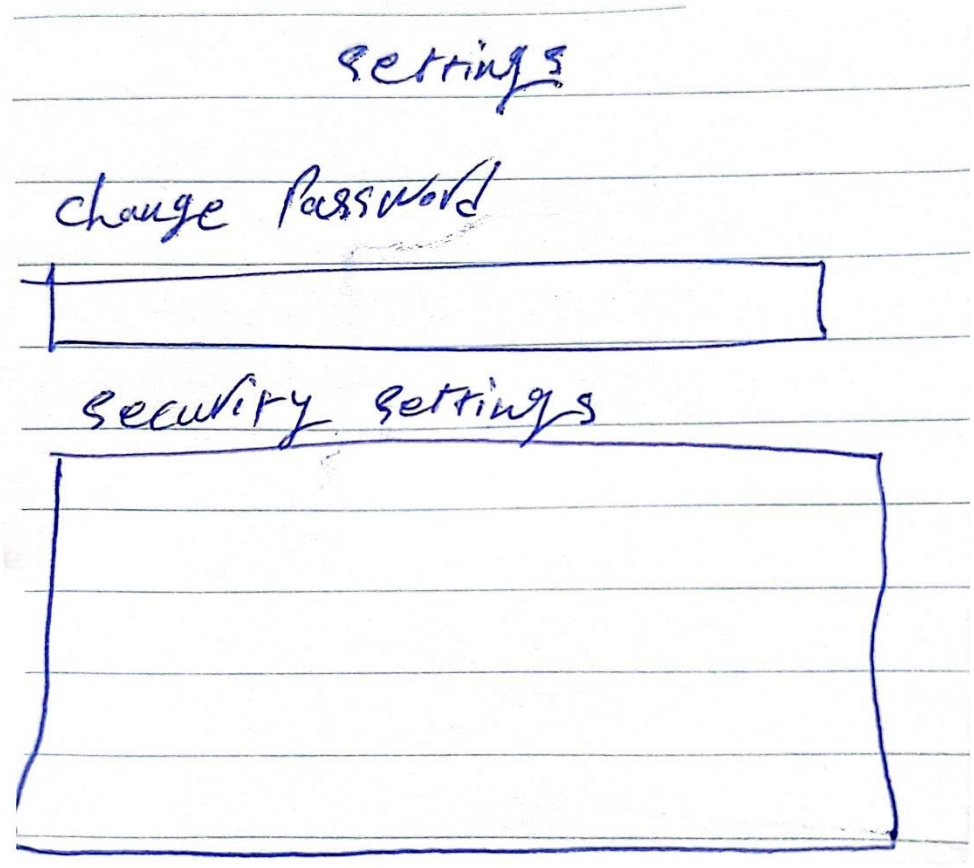
1. Login Page
    - Username field
    - Password field
    - Login button
    - Forgot Password link
2. Dashboard
    - Summary of attendance status
    - Daily check-in and check-out charts
    - Quick access to reports and personnel management pages
3. Personnel Page
    - List of employees with search functionality
    - Add, edit, and delete employee buttons
4. Reports Page
    - Filter by date and personnel
    - Display reports in table and chart formats
5. Settings Page
    - Options for changing password
    - Access and security settings











project scenarios

User Login Scenario:

1. The user navigates to the login page.
2. The user enters their username and password.
3. If the information is correct, the user is redirected to the dashboard.

Add New Employee Scenario:

1. The HR manager navigates to the personnel page.
2. They click the "Add New Employee" button.
3. A form to enter the new employee's information is displayed.
4. The employee's information is entered and saved.

Generate Report Scenario:

1. The senior manager or HR manager navigates to the reports page.
2. They select the desired filters (e.g., date and employee name).
3. The selected report is generated and displayed.

Change Security Settings Scenario:

1. The support team navigates to the settings page.
2. They change the relevant security settings (e.g., change password, access settings).
3. The changes are saved.

project story boards

Storyboard for User Login Scenario:

1. Image 1: The user opens a browser and enters the system URL.
2. Image 2: The login page is displayed with username and password fields.
3. Image 3: The user enters their login information.
4. Image 4: The dashboard is displayed after a successful login.

Storyboard for Add New Employee Scenario:

1. Image 1: The HR manager clicks on the "Add New Employee" button.
2. Image 2: The form for entering new employee information is displayed.
3. Image 3: The HR manager is entering the employee's information.
4. Image 4: The list of employees is displayed with the newly added employee.

Storyboard for Generate Report Scenario:

1. Image 1: The senior manager selects the reports page from the dashboard.
2. Image 2: The report filters (date and employee name) are displayed.
3. Image 3: The manager selects the desired filters.
4. Image 4: The generated report is displayed with the necessary details.

C.

The design patterns that are used in your project

MVC (Model-View-Controller)

Location and Usage

Model:

- Function: Manages data and business logic.
- In this project: Models include data related to personnel, attendance records, and security settings.

View:

- Function: Displays data to users.
- In this project: User interface pages such as the login page, dashboard, personnel page, and reports are part of the View.

Controller:

- Function: Manages the interaction between the model and the view.
- In this project: Controllers handle incoming requests, interact with models, and send results back to the views.

D.

Describe the programming approaches of your chosen GUI with what kind of language is developed (development)

Declarative Programming:

- Definition: A programming style where the logic of a computation is expressed without describing its control flow.
- In GUI Development: Allows developers to define what the user interface should look like, letting the framework handle rendering and updates.

Language: HTML:

- Definition: HTML is a declarative language used to create the structure of web pages.
- Suitability: Ideal for clearly and readably defining the structure of a GUI.

Using Declarative Programming with HTML:

- In this project: HTML will be used declaratively to define the structure of the GUI for the personnel attendance management system.

F.

The project codes

1. Login Page

The login page allows users to authenticate and access the system. This page includes a form with fields for username and password.

<!DOCTYPE html>

```
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Login Page</title>
   <link rel="stylesheet" href="styles.css">
</head>
<body>
   <div class="login-container">
      <h1>Login</h1>
      <form id="loginForm">
         <label for="username">Username:</label>
         <input type="text" id="username" name="username" required>
         <label for="password">Password:</label>
         <input type="password" id="password" name="password" required>
         <button type="submit">Login</button>
      </form>
   </div>
</body>
/>html<
```

2. Dashboard

The dashboard provides a summary of attendance data and quick access to other sections of the system.

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Dashboard</title>
   <link rel="stylesheet" href="styles.css">
</head>
<body>
   <div class="dashboard-container">
      <h1>Dashboard</h1>
      <div class="summary">
         <h2>Attendance Summary</h2>
         <div id="attendanceChart"></div>
      </div>
      <div class="quick-links">
         <a href="personnel.html">Manage Personnel</a>
         <a href="reports.html">View Reports</a>
         <a href="settings.html">Settings</a>
      </div>
   </div>
</body>
</html>
```

3. Personnel Management Page

This page allows managers to manage personnel records, including adding, editing, and deleting employee information.

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Manage Personnel</title>
   <link rel="stylesheet" href="styles.css">
</head>
<body>
   <div class="personnel-container">
      <h1>Manage Personnel</h1>
      <table>
         <thead>
            <tr>
               <th>ID</th>
               <th>Name</th>
               <th>Role</th>
               <th>Actions</th>
            </tr>
         </thead>
         <tbody id="personnelTable">
            <!-- Rows will be dynamically generated -->
         </tbody>
      </table>
      <button onclick="openAddPersonnelForm()">Add
Personnel</button>
   </div>
</body>
</html>
```

4. Reports Page

This page displays various attendance reports and allows filtering based on different criteria.

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Reports</title>
   <link rel="stylesheet" href="styles.css">
</head>
<body>
   <div class="reports-container">
      <h1>Attendance Reports</h1>
      <form id="filterForm">
         <label for="startDate">Start Date:</label>
         <input type="date" id="startDate" name="startDate">
         <label for="endDate">End Date:</label>
         <input type="date" id="endDate" name="endDate">
         <label for="employee">Employee:</label>
         <select id="employee" name="employee">
            <!-- Options will be dynamically generated -->
         </select>
         <button type="submit">Filter</button>
      </form>
      <div id="reportsTable">
         <!-- Report data will be dynamically generated -->
      </div>
   </div>
</body>
</html>
```

5. Settings Page

This page allows users to change their password and configure other settings.

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Settings</title>
   <link rel="stylesheet" href="styles.css">
</head>
<body>
   <div class="settings-container">
      <h1>Settings</h1>
      <form id="settingsForm">
         <label for="currentPassword">Current Password:</label>
         <input type="password" id="currentPassword"
name="currentPassword" required>
         <label for="newPassword">New Password:</label>
         <input type="password" id="newPassword"
name="newPassword" required>
         <label for="confirmPassword">Confirm Password:</label>
         <input type="password" id="confirmPassword"
name="confirmPassword" required>
         <button type="submit">Update Password</button>
      </form>
   </div>
</body>
</html>
```