Software Requirements Specification And Design

for

Employee Attendance System

Version 1.0

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1. Introduction

1.1 Purpose

This is a requirement specification document for an Employee attendance system for Android and iOS platforms. This project is being developed as a part of the partial requirements for the final year project dissertation.

1.2 Product scope

The product will be a simple smartphone based Employee Attendance System. It will run on Android and iOS platforms. The system will allow the users to:

* Add new employees
* View the list of employees
* View the attendance of any particular employee
* Calculate and view the weekly wages of any particular employee

2. Overall Description

2.1 Product Perspective

The product will be a simple smartphone based Employee attendance system. It will enable the employers to manage the attendance, and calculate the weekly wages of employees.

2.2 Product Functions

The application will allow the users to perform the following functions:

* Add new employee
* View the list of employees
* View the attendance of any particular employee
* Calculate and view the weekly wages of any particular employee

2.3 User Classes and Characteristics

The users of the system will be the administration and payroll departments. All users should be familiar with Android and iOS phones and they must have either Android or iOS phones in order to use the system.

2.4 Operating Environment

The application will run on Android (version 5.1 and higher) and iOS (version 9 and higher). And for server side Firebase firestore will be used.

2.5 Assumptions and dependencies

No specific assumptions or dependencies are considered.

3. System Features

This section of the document describe the functional requirements of the system. The system will have the following features

3.1 Add new employee

|  |  |  |  |
| --- | --- | --- | --- |
| **Source:** Add new employee | **Priority:** High | **Owner:** Admin | **Req. ID:** 1 |
| **Functional requirement: Add new employee** | | | |
| This feature will enable the admin to register a new employee by entering the employee details such as first name, last name, address, hourly wage etc. | | | |
|  |
| **Business activity** | Register employee | | |  |
| **Benefits** | | | |  |
| It will enable the admins to manage the registered employee’s attendance and salary. | | | |  |
|  |
| **Comments/suggested solutions** | | | |  |
| Should provide the admin with a friendly UI to add a new employee | | | |  |
| **Related documents** | | | |  |
| Use case: Add new employee | Class model: Employee | sequence diagram: add new employee | | | |  |
| **Related requirements** | | | |  |
| View employee list, view employee attendance, calculate employee salary | | | |  |
| **Resolution** | | | |  |
| Included in release 1.0 | | | |  |

3.2 View employee list

|  |  |  |  |
| --- | --- | --- | --- |
| **Source:** Registered employees | **Priority:** High | **Owner:** Admin | **Req. ID: 2** |
| **Functional requirement: View employee list** | | | |
| This feature will enable the admin to view the list of all registered employees with their designation. | | | |
|  |
| **Business activity** | Manage employees | | |  |
| **Benefits** | | | |  |
| It will enable the admins to view and manage the currently registered employees. | | | |  |
|  |
| **Comments/suggested solutions** | | | |  |
| Should provide the admin with a friendly user interface to view the list of registered employees. | | | |  |
| **Related documents** | | | |  |
| Use case: View employee list | Class model: Employee | sequence diagram: view employee list | | | |  |
| **Related requirements** | | | |  |
| Add new employee, view employee attendance, calculate employee salary | | | |  |
| **Resolution** | | | |  |
| Included in release 1.0 | | | |  |

3.3 View employee attendance

|  |  |  |  |
| --- | --- | --- | --- |
| Source: Android / iOS | **Priority:** High | **Owner:** Admin | **Req. ID: 3** |
| **Functional requirement: View employee list** | | | |
| This feature will enable the admin to view the attendance of a particular employee for the specified time period. | | | |
|  |
| **Business activity** | Manage employees | | |  |
| **Benefits** | | | |  |
| It will enable the admin to view and manage the attendance of employees. | | | |  |
|  |
| **Comments/suggested solutions** | | | |  |
| Should provide the admin with a friendly user interface to view the attendance of employees. It will include the total hours worked for the day and specified time period. | | | |  |
| **Related documents** | | | |  |
| Use case: View employee attendance | Class model: Attendance | sequence diagram: view employee attendance | | | |  |
| **Related requirements** | | | |  |
| Add new employee, view employee list, calculate employee salary | | | |  |
| **Resolution** | | | |  |
| Included in release 1.0 | | | |  |

3.4 Calculate Wages

|  |  |  |  |
| --- | --- | --- | --- |
| **Source:** Registered employees | **Priority:** High | **Owner:** Admin | **Req. ID: 4** |
| **Functional requirement: Calculate wages** | | | |
| This feature will enable the admin to calculate and view the wages of a particular employee for the specified time period | | | |
|  |
| **Business activity** | Manage employees | | |  |
| **Benefits** | | | |  |
| It will enable the admins to view and manage weekly wages of employees. | | | |  |
|  |
| **Comments/suggested solutions** | | | |  |
| Should provide the admin with a friendly user interface to view the weekly wages of a particular employee. It will show the employee id, name, hourly rate, total hours worked, and wages for the specified time period. | | | |  |
| **Related documents** | | | |  |
| Use case: calculate wages | Class model: Employee, Attendance | sequence diagram: calculate wages | | | |  |
| **Related requirements** | | | |  |
| Add new employee, view employee attendance, view employee list | | | |  |
| **Resolution** | | | |  |
| Included in release 1.0 | | | |  |

4. Non–functional requirements

This section of the document explains the non-functional requirements of the system. It includes performance, availability, security and reliability requirements of the system.

4.1 Performance Requirements

The response time from the database should be very fast. The acceptable range for the response time will be 0 to 5 seconds.

4.2 Availability Requirements

It should be made sure that the data from the server should be available anytime. The acceptable range will be 98% time availability.

4.3 Security Requirements

The system must follow industry standard practices to ensure system security. The system must be tested for any possible security weaknesses.

4.4 Reliability Requirements

The software system must be reliable, it should be properly tested for any bugs such as load testing, functionality testing, performance testing etc.

5. Design Diagrams

5.1 Use case diagram

Diagram

Description automatically generated

Figure 5.1

5.2 Class diagram

Diagram, table

Description automatically generated

Figure 5.2

5.3 Sequence diagrams

5.3.1 Add new employee

Diagram

Description automatically generated

Figure 5.3.1

5.3.2 View employee list

Diagram

Description automatically generated

Figure 5.3.2

5.3.3 View employee attendance

Diagram

Description automatically generated

Figure 5.3.3

Diagram

Description automatically generated5.4 Entity Relationship Diagram

Figure 5.4