**Software Requirements Specification**

**Attendance Tracking System**

**Version 1.0**

**Prepared by:**

1. Nidhi D.
2. K. Sri Harsha
3. M. Jathin
4. P. Shanmukh

**Organization:** Adhyesika

**Date:** 20.02.2025

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**1. Introduction**

**1.1 Purpose**

The Attendance Tracking System is designed to monitor and manage attendance for different user roles: administration, teachers, and students. The system aims to streamline attendance tracking, reduce manual effort, and ensure data accuracy.

**1.2 Document Conventions**

* Bold headers for section titles
* Requirements labeled as REQ-#

**1.3 Intended Audience and Reading Suggestions**

* **Developers**: Understand system functionality and constraints.
* **Project Managers**: Track project scope and requirements.
* **End Users**: Learn about system capabilities.
* **Testers**: Ensure requirements compliance.

**1.4 Product Scope**

The system enables automated attendance tracking with role-based access control, data analytics, and reporting. It aims to improve administrative efficiency and reduce human errors in attendance management.

Streamline attendance tracking with this efficient app, eliminating manual processes. The app allows for accurate recording of attendance, even during special events or holidays. Built-in features accommodate student leave requests and approvals, simplifying administrative tasks. Real-time data provides valuable insights into attendance patterns. This comprehensive solution ensures accurate and efficient attendance management for any organization.

**1.5 References**

* Mobi ai

**2. Overall Description**

**2.1 Product Perspective**

This attendance tracking system offers flexible access through both mobile and web applications. Data is securely stored on a robust backend server. This system simplifies attendance management and provides comprehensive reporting features. Employees can easily clock in and out using their preferred device. It's a modern solution for efficient timekeeping.

**2.2 Product Functions**

* User authentication and role-based access
* Attendance marking & editing
* Reports generation
* Notifications and alerts

**2.3 User Classes and Characteristics**

* **Administration**: Manages users and system settings.
* **Teachers**: Marks attendance and views reports.
* **Students**: Views attendance records.

**2.4 Operating Environment**

* Mobile & Web application
* Compatible with modern web browsers and on regular smartphones
* Database: [Specify DB], MongoDB
* Hosted on cloud or on-premises server

**2.5 Design and Implementation Constraints**

* Must use secure authentication (OAuth, JWT, etc.)
* Should comply with data privacy regulations
* Scalable to handle large user bases
* Scalable to add more features

**2.6 User Documentation**

* User manual

**2.7 Assumptions and Dependencies**

* Users have internet access
* Compatible devices (PCs, tablets, smartphones)

**3. External Interface Requirements**

**3.1 User Interfaces**

* Responsive web & mobile UI
* Simple navigation

**3.2 Hardware Interfaces**

* No specialized hardware required

**3.3 Software Interfaces**

* Database APIs
* Third-party authentication services

**3.4 Communications Interfaces**

* HTTPS for secure communication

**4. System Features**

**4.1 Attendance Management**

**4.1.1 Description and Priority**

Allows users to mark attendance with real-time updates. **Priority: High**

**4.1.2 Stimulus/Response Sequences**

1. Teacher logs in
2. Selects the date
3. Selects year of study
4. Selects class
5. Selects subject
6. Marks attendance
7. Teacher reports the topics discussed in class
8. Data is updated in the database

**4.1.3 Functional Requirements**

* **REQ-1**: The system shall allow teachers to mark attendance.
* **REQ-2**: The system shall store attendance records securely.

**4.2 Role-Based Access Control**

* **REQ-3**: Admins, teachers, and students shall have different access levels.

**4.3 Data Analytics & Reporting**

* **REQ-4**: Generate monthly attendance reports.

**4.4 Notifications & Alerts**

* **REQ-5**: Notify students about attendance status.

**5. Other Nonfunctional Requirements**

**5.1 Performance Requirements**

* The system should support concurrent access by multiple users.

**5.2 Safety Requirements**

* Must prevent unauthorized data modification.

**5.3 Security Requirements**

* Implement encryption for sensitive data.

**5.4 Software Quality Attributes**

* Maintainability, scalability, and usability should be ensured.

**5.5 Business Rules**

* Attendance must be marked within a given timeframe.

**6. Other Requirements**

* Compliance with education policies.

**7. Appendices**

**A. Glossary**

* JWT: JSON Web Token
* UI: User Interface
* PC: Personal Computer
* HTTPS: Hyper Text Transfer Protocol

**B. Analysis Models**

[Include diagrams if necessary]

**C. To Be Determined List**

End of Document