**Software Requirement Specification (SRS)**

**Project Title :- Virtual Attendance System.**

**Purpose:**

The purpose of the Virtual Attendance system is to automate and simplify attendance tracking using digital tools, reducing manual effort and errors.

**Scope:**

The system will support real-time attendance logging, report generation, and user authentication for educational institutions or workplaces.

**Overall Description**

**1. Product Perspective**

* A standalone or integrated module designed to digitize and automate attendance tracking.
* Can be integrated with existing Learning Management Systems (LMS) or Human Resource Management Systems (HRMS).
* Replaces traditional manual attendance systems with biometric, facial recognition, QR code, or geolocation-based technologies.
* Offers a centralized dashboard for monitoring and managing attendance records.

**2. User Classes and Characteristics**

* Students/Employees:
* Primary users who mark attendance via web/mobile interface or automated detection (e.g., face scan, QR code).
* Basic tech-savviness expected.
* Teachers/Managers:
* Review attendance records, generate reports, and handle exceptions.
* Intermediate system interaction level.
* Admins/System Operators:
* Manage users, system configurations, and databases.
* Advanced understanding of the system and its settings.

**3. Operating Environment**

* Platform: Web-based or mobile-based application (Android/iOS).
* Technologies: Runs on cloud or local server with database (e.g., MySQL, Firebase).
* Browsers: Chrome, Firefox, Edge (for web-based interface).
* Dependencies: Internet connection, camera access (for facial recognition), GPS (if location-based).

**4. Functional Requirements**

* User registration and login with secure authentication.
* Mark attendance using a selected method (QR code, facial recognition, biometric, etc.).
* View, edit, and delete attendance logs (based on role).
* Generate and export attendance reports.
* Admin control for managing users and attendance rules.

**5. Non-Functional Requirements**

* Performance: System must respond within 3 seconds under normal load.
* Scalability: Capable of handling thousands of users simultaneously.
* Security: Data encryption, secure login (OTP, passwords), and role-based access control.
* Usability: Clean UI/UX suitable for both technical and non-technical users.
* Reliability: 99.9% uptime with regular data backups.

**6. System Features**

* Real-time attendance marking and dashboard.
* Notifications or alerts for absentees or irregularities.
* Attendance analytics (daily, weekly, monthly trends).
* Support for multiple attendance modes (manual override, automated).
* Integration options (e.g., with academic calendars, HR payrolls).

**References**

* IEEE Xplore – Online Attendance Systems

Title: "Automated Attendance System Using Face Recognition Technique”

* ResearchGate – Attendance Management Research

Title: "Smart Attendance System Using Face Recognition"

* GitHub – Virtual Classroom Attendance Project
* Springer – Technology in Education
* Title: "Smart Attendance System Using Real Time Face Recognition”