SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

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Employee Management System

1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to provide a comprehensive description of the Employee Management System (EMS). This SRS describes in detail the objectives, functional requirements, non-functional requirements, constraints, assumptions, interfaces, and system behaviors to ensure a unified and clear understanding of the product among all stakeholders. The SRS guides the system architecture, design decisions, development workflow, testing strategy, documentation structure, deployment plan, and future maintenance upgrades. It ensures that no ambiguity exists in interpreting system requirements, thereby reducing rework, development cost, and communication gaps throughout the software development lifecycle.

1.2 Background & Motivation

Organizations, especially medium and large-scale firms, rely heavily on accurate workforce management. Traditional HR processes are often handled manually through spreadsheets, paper forms, or fragmented software tools, which leads to:

- Data duplication and inconsistency
- Inefficient communication between HR and employees
- Delays in leave approvals and payroll processing
- Difficulty in generating analytical workforce insights

The Employee Management System aims to bridge these gaps by offering a centralized, automated, and transparent digital platform to manage employee lifecycle activities from onboarding to payroll.

1.3 Scope

The scope of the EMS is to provide an integrated platform that:

- Digitizes employee information
- Automates attendance and leave workflows
- Handles payroll computation and slip generation
- Offers structured reporting and analytics
- Reduces manual errors and administrative burden
- Improves workforce productivity, decision-making, and employee satisfaction

EMS users include HR administrators, employees, and optionally higher management personnel. The platform focuses on usability, reliability, secure information access, workflow automation, and regulatory compliance.

1.4 Goals & Objectives

Key objectives include:

1. To replace paperwork with a digital workforce management system.
2. To provide transparency in attendance, leave, and salary processing.
3. To support HR decision-making through data analytics and reporting dashboards.
4. To ensure secure access through authentication and role-based authorization.
5. To reduce payroll processing time and improve accuracy.
6. To maintain accurate historical data for audits, compliance, and record retention.

1.5 Definitions, Acronyms & Abbreviations

(Already provided previously—kept same but expanded upon request.)

1.6 Intended Audience

The intended audience includes:

- System designers for architecture and modeling
- Developers for implementation
- QA testers for validation and verification
- HR managers for workflow review
- Academic reviewers for assessment
- Future maintainers for upgrades and scalability improvements

2. System Overview

2.1 System Perspective

The EMS functions as an enterprise HR platform with modular architecture. It provides interoperability between its internal modules through standardized workflows. Each module contributes to employee lifecycle management and overall organizational productivity.

2.2 System Features

The system comprises the following major modules (each will be expanded later):

1. Employee Information Management
2. Attendance Tracking & Scheduling
3. Leave Administration & Workflow
4. Payroll & Compensation Processing
5. Reporting & Analytics
6. Notifications & Alerts
7. Authentication, Authorization & Role Management

2.3 Stakeholder Analysis

Stakeholder	Interest
HR Department	Automation, accuracy, reporting
Employees	Transparency, self-service access
Management	Analytics for strategic decisions
IT Team	Maintenance, scalability, upgrades
Auditors	Compliance, historical records

2.4 Business Benefits

The EMS delivers the following organizational advantages:

- Reduced manpower required for administrative tasks
- Timely payroll execution and salary disbursement
- Reduced data redundancy and inconsistencies
- Improved tracking of employee history and performance
- Improved compliance with labor regulations and audits
- Enhanced visibility of workforce trends for decision-making

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3. Detailed Functional Requirements

3.1 Employee Information Module

Sub-features include:

- Personal details management
- Designation & department assignment
- Document uploads (ID proof, certificates)
- Role and job profile management
- Compensation records
- Employment lifecycle data

3.2 Attendance Management Module

Sub-features include:

- Daily log-in/log-out management
- Shift scheduling (optional future extension)
- Absentee tracking
- Late & overtime logging (configurable)
- Monthly roll-up generation

3.3 Leave Management Module

Sub-features include:

- Leave type configuration (CL, SL, EL, etc.)
- Leave request & approval workflow
- Leave credit and carry-forward rules
- Leave utilization statistics
- Automated attendance integration

3.4 Payroll Management Module

Sub-features include:

- Base salary + allowances + deductions
- PF, tax, and compliance handling (future)
- Monthly payroll run
- Salary slip generation and history
- Compensation analytics for management

3.5 Reporting & Analytics Module

Reports may include:

- Employee roster reports
- Workforce distribution reports
- Leave statistics and patterns
- Payroll expenditure summaries
- Month-to-month attendance trends
- Projection dashboards (future AI insights possible)

3.6 Role Management & Authorization Module

- Admin has full CRUD access on all modules
- Employees have read-only access for payroll & attendance
- Optional: Departmental authority for approvals & reviews

3.7 Notification & Communication Module

Supports system alerts for:

- Leave requests
- Approval rejections
- Payroll slip generated
- Profile updates
- Attendance anomalies (optional future)

4. Expanded Non-Functional Requirements (NFR)

4.1 Performance Requirements

- Response latency ≤ 3 seconds during peak usage
- Concurrency support for organizational scale
- Efficient database queries for large historical data sets

4.2 Security Requirements

Includes:

- Access control
- Encryption of stored sensitive data (salary, personal info)
- Secure session management
- Password hashing
- Log & audit trail for sensitive operations

4.3 Reliability & Recovery Requirements

- System uptime expectancy ≥ 99% (excluding maintenance)
- Periodic backups for disaster recovery
- Integrity checks for payroll and leave data

4.4 Usability & UX Requirements

Focuses on:

- Minimal learning curve
- Multi-browser compatibility
- Mobile responsive design
- Accessibility considerations

4.5 Maintainability & Extensibility

Platform should allow:

- Modular enhancements
- Versioning for major upgrades
- Plug-in extensions (biometric attendance, tax module)
- Configurable HR policies

4.6 Portability Requirements

Future deployment flexibility to:

- On-premise servers
- Private cloud
- Public cloud
- Hybrid HR environments

4.7 Legal & Compliance Requirements

Supports:

- Labor law documentation
- Payroll compliance & tax deduction modules (future)
- Record retention for audits and disputes
- Data privacy according to organizational policies

5. External Requirements & Interfaces

Expanded into:

- Human interfaces
- Software/third-party interfaces
- Hardware interfaces
- Communication protocols

6. Future Enhancements

Future capabilities may include:

1. Biometric or RFID attendance integration
2. Full-fledged performance appraisal module
3. AI-based workforce forecasting
4. Payroll banking integration and auto-fund transfer
5. Mobile-native Android/iOS applications
6. HR chatbot for employee queries
7. Automated employee onboarding workflow
8. Compliance engine integrated with government rules

7. Conclusion

The Employee Management System offers a strategic technological upgrade for organizations seeking to increase operational efficiency, accuracy, and workforce transparency. The automation of attendance, leave, payroll, and reporting functions reduces HR burden and fosters data-driven decision-making. The SRS provides a clear blueprint for designing a scalable, secure, and maintainable HR management solution adaptable to long-term organizational growth and modernization.