

Software Specification Requirement

1. **PROJECT NAME:** Employment Management System (EMS)
2. **PROJECT IDEA:** The **Employee Management System (EMS)** The **Employee Management System (EMS)** is a software solution that automates HR processes, including employee records, payroll, attendance, and recruitment. It enhances efficiency, ensures compliance, and improves decision-making with real-time analytics, providing a seamless experience for both employees and management.
3. **PROJECT DRIVERS:**
 - a. **The goal of the project**

The primary goal of the **Employee Management System (EMS)** is to provide a centralized, efficient, and user-friendly platform for managing all aspects of human resource operations within an organization. The system aims to automate routine HR tasks, reduce administrative workload, ensure compliance with labor regulations, and enhance decision-making through real-time data insights. Ultimately, it seeks to improve employee satisfaction, operational efficiency, and organizational productivity.
 - b. **Client, Customer, Stakeholders**

Client: Organizations and businesses of medium to large size across various industries requiring effective human resource management solutions.

Customer: The HR departments and administrative teams who will directly benefit from the system's capabilities to manage employee-related data and processes.

Stakeholders:

Internal: Admins, recruiters, supervisors, employees.

External: Job candidates.

Operational: IT and finance departments supporting system implementation and use.

Executive: Company management leveraging insights for strategic decision-making.

c. Users of the project

Admin: Responsible for managing company information, employee details, payroll, leave requests, public holidays, and employee termination processes.

Recruiter: Handles job advertisements, schedules interviews, and extends job offers to candidates.

Employee: Views salary details, holiday lists, and leave statuses; submits resignation requests when necessary.

Candidate: Applies for job advertisements and accepts or rejects job offers.

Supervisor: Investigates tardiness, reviews employee history, communicates attendance issues, and manages employee status, including placing them on probation.

4. PROJECT CONSTRAINTS:

a. Mandated Constraints

Technology Requirements:

Database: SQL Server (via SSMS) for managing structured employee-related data.

Reason: SQL Server is a robust, enterprise-grade database with strong integration capabilities and security features, suitable for handling sensitive employee data.

Backend Framework: Java (using Spring Boot or another Java framework) for building the application's backend.

Reason: Java is known for its scalability, security, and extensive libraries, making it ideal for building enterprise-level applications.

Frontend Design Tool: Figma for designing the user interface and creating prototypes.

Reason: Figma allows for collaborative design and is widely used for building interactive and user-friendly UI prototypes.

Deployment: Cloud-based infrastructure (AWS or Azure) for scalability and reliability.

Reason: Allows for secure, flexible, and globally accessible services.

Security: Adherence to data protection standards like GDPR or local labor laws.

Reason: Ensures sensitive employee and payroll data is protected and complies with regulations.

b. Naming Conventions and Definitions

Employee: Represents a staff member with attributes like name, ID, position, and department.

Purpose: Store individual employee details.

Admin: Manages employee data, payroll, leave requests, and holidays.

Purpose: Oversee HR operations.

Recruiter: Manages recruitment, posts job ads, and screens candidates.

Purpose: Handle hiring process.

Candidate: Represents job applicants in the hiring process.

Purpose: Track applicant status.

Supervisor: Monitors attendance, tardiness, and probation status.

Purpose: Supervise employees' performance.

Department: Groups employees and recruiters by organizational structure.

Purpose: Organize staff.

Leave Request: Employee leave applications.

Purpose: Track and approve leave.

Payroll: Represents payroll details, including salary and deductions.

Purpose: Handle salary processing.

Public Holiday: Tracks company-recognized public holidays.

Purpose: Manage holiday schedule.

Job Advertisement: Represents job openings posted by the company.

Purpose: Advertise positions.

Job Offer: Represents offers extended to candidates after interviews.

Purpose: Formalize job offers.

Interview: Manages candidate evaluations during the hiring process.

Purpose: Schedule and assess interviews.

Performance Review: Assesses employee performance periodically.

Purpose: Track performance and feedback.

Onboarding: Represents tasks for new employees after hiring.

Purpose: Manage employee onboarding.

Attendance: Tracks employee punctuality and attendance.

Purpose: Monitor attendance records.

Counseling: Assists employees with attendance or behavioral issues.

Purpose: Provide support for improvement.

Probation Status: Tracks employees' probation periods and corrective actions.

Purpose: Manage probation evaluations.

c. Relevant Facts and Assumptions

- **Relevant Facts:**

- Employees must have a **unique EmployeeID** and their data should be securely stored and easily accessible.
- Payroll calculations must consider **taxes, deductions, and bonuses**.
- **Job postings** will be made by recruiters and tracked in the system until the job position is filled.
- The system will track **leave balances** and automatically update them based on approved requests.
- All **performance reviews** are conducted quarterly or annually, depending on company policies.

- **Business Rules:**

- **Leave Requests:** Employees can only request leave for available leave types (vacation, sick leave, etc.) and can only request leave if their balance is sufficient.
- **Termination:** An employee's record will be automatically marked as terminated if they voluntarily resign or are terminated by the company.
- **Job Offers:** A job offer is only extended if the candidate has passed all required interviews and assessments.

- **Assumptions:**

- The system will integrate with **existing payroll systems** for accurate salary calculation, if applicable.
- **Employee data privacy** is essential, and data will be stored in compliance with local data protection regulations (e.g., GDPR).
- The system will be designed to scale to support **hundreds to thousands of employees** as the organization grows.
- The organization already has a structured **HR policy** that defines leave types, job roles, and performance evaluation criteria.
- **Managers** and **supervisors** will be trained on using the system for performance evaluations, onboarding, and managing employee records.

5. FUNCTIONAL REQUIREMENTS:

a. The Scope of the Work

1. The Current Situation

Currently, HR processes, such as employee record management, payroll, attendance tracking, recruitment, and leave management, are often handled manually or through disparate systems. This leads to inefficiencies, data duplication, compliance risks, and communication gaps among stakeholders.

Key pain points include:

- Manual entry and reconciliation of payroll data.
- Lack of centralized employee records, causing delays in information retrieval.
- Inefficient leave and attendance management, leading to disputes and errors.
- Time-intensive recruitment and onboarding processes.
- Limited access to real-time analytics for decision-making.

2. The Context of the Work

The Employee Management System (EMS) will address these issues by creating a centralized platform that integrates and automates HR operations. The system will interface with employees, admins, recruiters, supervisors, and candidates while ensuring that HR functions are streamlined and compliant with labor regulations.

Key interfaces include:

- **Admins:** Access to manage employee data, payroll, and leave requests.
- **Employees:** Portal for attendance, leave applications, and viewing salary details.
- **Recruiters:** Platform to post job ads, schedule interviews, and process applications.
- **Supervisors:** Tools to manage and evaluate employee performance and address attendance issues.
- **Candidates:** Interface to apply for job positions and interact with recruiters.

3. Work Partitioning

The EMS scope is divided into modules, each addressing a specific HR function. These modules include:

1. **Employee Records Management:** Create, update, and access employee details.
2. **Payroll Processing:** Automate salary calculation and deductions.
3. **Attendance and Leave Management:** Manage leave requests and track attendance.
4. **Recruitment Management:** Post job ads, process applications, and schedule interviews.
5. **Performance Evaluation:** Conduct quarterly reviews and track performance metrics.
6. **Compliance and Reporting:** Generate reports and ensure adherence to labor laws.

b. The Scope of the Product

Product Boundaries


The EMS will automate the following business use cases:


- **Add or Update Company Information:** Admin updates organizational details.
- **Add New Employee Details:** Admin enters employee data into the system.
- **Manage Leave Requests:** Admin reviews and approves/rejects employee leave applications.
- **Post Job Advertisement:** Recruiters post job openings on the system.
- **Process Payroll:** Admin processes employee salaries at the end of the month.
- **Conduct Performance Reviews:** Admin conducts evaluations every quarter.

Automated and Manual Work

- Automated: Payroll calculations, leave approvals (based on pre-defined rules), attendance tracking, and recruitment notifications.
- Manual: Data entry for employee records, final decision-making on job offers, and face-to-face interviews.

c. Atomic Functional Requirements Shell (Volere) (cards)

Requirement #:	1	Requirement Type:	Functional	Event/BUC/PUC #:	Add or Update Company Info
Description:	The system must allow the admin to add or update company details such as name and address.				
Rationale:	Ensures company information is accurate and up-to-date for official purposes.				
Originator:	Admin				
Fit Criterion:	<ul style="list-style-type: none">• Changes to company info must be reflected system-wide immediately after update.• The system must validate all fields (e.g., non-empty name, valid address format).				
Customer Satisfaction:	5	Customer Dissatisfaction:	2	Priority:	Conflicts:
Supporting Materials:	Sample form layout for company information.				
History:	Requirement added on 30th November 2024.				
					

Requirement #:	2	Requirement Type:	Functional	Event/BUC/PUC #:	Add New Employee Details
Description:	The system must allow the admin to create and update employee records, including personal and job-related information.				
Rationale:	Ensures employee records are accurate for payroll, performance tracking, and compliance.				
Originator:	Admin				
Fit Criterion:	<ul style="list-style-type: none">• Employee records must include mandatory fields like name, ID, and department.• The system must notify HR of new employee additions.				
Customer Satisfaction:	5	Customer Dissatisfaction:	2	Priority:	Conflicts:
Supporting Materials:	Sample employee data entry form				
History:	Requirement added on 30th November 2024.				
					

Requirement #: 3

Requirement Type: Functional **Event/BUC/PUC #:**

Manage Leave Requests

Description: The system must allow the admin to approve, reject, or modify employee leave requests.

Rationale: Streamlines the leave approval process and ensures compliance with leave policies.

Originator: Admin, Employees

Fit Criterion:

- Approved or rejected leaves must immediately update the employee's leave balance.
- Leave requests must adhere to the company's leave policy.

Customer Satisfaction: 4

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Leave policy documents.

History: Requirement added on 30th November 2024.

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Requirement #: 4

Requirement Type: Functional **Event/BUC/PUC #:**

Add Public Holidays

Description: The system must allow the admin to add, update, or remove public holidays from the company calendar.

Rationale: Provides employees with updated holiday schedules for better planning.

Originator: Admin, HR Department

Fit Criterion:

- The system must notify employees about changes to the holiday list.
- New holidays must not conflict with existing ones.

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Sample holiday schedule.

History: Requirement added on 30th November 2024.

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Requirement #: 6

Requirement Type: Functional Event/BUC/PUC #: Apply for Job

Description: The system must allow candidates to submit applications for posted job positions.

Rationale: Provides candidates with an easy way to apply for opportunities.

Originator: Candidate Employee

Fit Criterion:

- Applications must include a resume and cover letter upload.
- Candidates must receive confirmation of submission.

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Application submission guidelines

History: Requirement added on 30th November 2024.

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Requirement #: 7

Requirement Type: Functional Event/BUC/PUC #: Accept or Reject Job Offer

Description: The system must allow candidates to accept or reject job offers.

Rationale: Streamlines the hiring process and tracks candidate decisions.

Originator: Candidate Employee

Fit Criterion:

- Accepted offers must notify the recruiter to initiate onboarding.
- Rejected offers must prompt the recruiter to revisit shortlisted candidates.

Customer Satisfaction: 4

Customer Dissatisfaction: 2

Priority:

Conflicts:

Supporting Materials: Job offer email templates.

History: Requirement added on 30th November 2024.

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Requirement #: 8 **Requirement Type:** Functional **Event/BUC/PUC #:** Process Payroll

Description: The system must allow the admin to process payroll at the end of each month.

Rationale: Ensures employees are paid accurately and on time based on hours worked, salary, and deductions.

Originator: Admin

Fit Criterion:

- Payroll must be calculated based on employee hours, salary, and deductions.
- Processed payroll data must be immediately available for employees to view.

Customer Satisfaction: 4

Customer Dissatisfaction: 2

Priority:

Conflicts:

Supporting Materials: Payroll calculation templates.

History: Requirement added on 30th November 2024.

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Requirement #:9 **Requirement Type:** Functional **Event/BUC/PUC #:** Schedule Interviews

Description: The system must allow the recruiter to schedule interviews with shortlisted candidates.

Rationale: Enables effective and organized interview scheduling to streamline the recruitment process.

Originator: Recruiter

Fit Criterion:

- Feedback must be recorded in real-time during the interview.
- All feedback must be accessible to authorized users (e.g., hiring managers).

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Interview scheduling guidelines.

History: Requirement added on 30th November 2024.

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Requirement #: 10 **Requirement Type:** Functional **Event/BUC/PUC #:** Conduct Interviews

Description: The system must allow the recruiter to conduct interviews and record feedback.

Rationale: Streamlines the interview process and ensures feedback is accurately recorded for later review

Originator: Recruiter

Fit Criterion:

- Reviews must be conducted quarterly, on scheduled dates.
- Performance metrics should be customizable to suit different departments.

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Interview feedback form templates.

History: Requirement added on 30th November 2024.

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Requirement #: 11 **Requirement Type:** Functional **Event/BUC/PUC #:** Conduct Performance Review

Description: The system must allow the admin to conduct quarterly performance reviews for employees.

Rationale: Ensures employee performance is regularly evaluated for growth, feedback, and performance-based decisions.

Originator: Recruiter

Fit Criterion:

- Reviews must be conducted quarterly, on scheduled dates.
- Performance metrics should be customizable to suit different departments.

Customer Satisfaction: 5

Customer Dissatisfaction: 2

Priority:

Conflicts:

Supporting Materials: Employee performance tracking system.

History: Requirement added on 30th November 2024.

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Requirement #: 12 **Requirement Type:** Functional **Event/BUC/PUC #:** Extend Job Offer

Description: The system must allow the recruiter to send a formal job offer to the selected candidate.

Rationale: Formalizing the job offer is essential to initiate the candidate's employment process.

Originator: Recruiter

Fit Criterion:

- The job offer must include salary, benefits, and start date.
- Offer acceptance should trigger the onboarding process.

Customer Satisfaction: 5

Customer Dissatisfaction: 2

Priority:

Conflicts:

Supporting Materials: Job offer letter templates.

History: Requirement added on 30th November 2024.

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Requirement #: 13 **Requirement Type:** Functional **Event/BUC/PUC #:** View Salary Details

Description: The system must allow the employee to view a breakdown of their earnings and deductions after payroll processing.

Rationale: Ensures transparency regarding salary details and helps employees track their compensation.

Originator: Employee

Fit Criterion:

- Salary breakdown must include gross income, deductions, and net income.
- Employees should receive notifications once payroll is available for viewing.

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Job offer letter templates.

History: Requirement added on 30th November 2024.

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Requirement #: 14 **Requirement Type:** Functional **Event/BUC/PUC #:** View Holiday List

Description: The system must allow employees to view upcoming company holidays.

Rationale: Helps employees plan for time off and manage their schedules.

Originator: Employee, HR Department

Fit Criterion:

- The holiday list should be accessible to all employees.
- Any updates to holidays should be reflected immediately for all users.

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority:

Conflicts:

Supporting Materials: Holiday list template.

History: Requirement added on 30th November 2024.

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Requirement #: 15 **Requirement Type:** Functional **Event/BUC/PUC #:** Complete Onboarding

Description: The system must allow the admin to complete the onboarding process for new hires.

Rationale: Ensures new employees are properly integrated into the company with all necessary resources and permissions.

Originator: Admin

Fit Criterion:

- New employees must receive an orientation schedule and training materials.
- The system must grant new employees access to relevant company tools.

Customer Satisfaction: 5

Customer Dissatisfaction: 2

Priority:

Conflicts:

Supporting Materials: Onboarding checklist.

History: Requirement added on 30th November 2024.

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Requirement #: 16 **Requirement Type:** Functional **Event/BUC/PUC #:** Notify Leave Status Change

Description: The system must notify employees when their leave status has changed (approved, rejected, or modified).

Rationale: Keeps employees informed about the status of their leave requests for better planning.

Originator: Employee, Admin

Fit Criterion:

- Notifications must be sent immediately after a status change.
- The system must show detailed information on the status change.

Customer Satisfaction: 5

Customer Dissatisfaction: 2

Priority:

Conflicts:

Supporting Materials: Notification templates.

History: Requirement added on 30th November 2024.

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Requirement #:
17

Requirement Type:
Functional

Event/BUC/PUC #:
Process Resignation

Description:

The system must allow the admin to process an employee's resignation and initiate the offboarding process.

Rationale:

Facilitates smooth resignation handling, ensuring that all necessary offboarding steps are followed.

Originator: Admin, Supervisor

Fit Criterion:

- The resignation status must be updated immediately.
- The system must initiate exit interviews and final settlements.

Customer Satisfaction: 4

Customer Dissatisfaction: 2

Priority: Employee management system, HR policies.

Conflicts:

Supporting Materials: Resignation process checklist.

History: Requirement added on 30th November 2024.

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Requirement #:
18

Requirement Type:
Functional

Event/BUC/PUC #:
Investigate Tardiness

Description:

The system must allow supervisors to investigate incidents of employee tardiness and take appropriate actions.

Rationale:

Ensures timely intervention and resolution of attendance issues, maintaining discipline in the workplace.

Originator:

Supervisor

Fit Criterion:

- Tardiness incidents should be logged with timestamps.
- The system should allow supervisors to document their investigation and actions.

Customer Satisfaction: 4

Customer Dissatisfaction: 2

Priority: Attendance tracking module, employee records.

Conflicts:

Supporting Materials: Tardiness investigation form.

History: Requirement added on 30th November 2024.

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Requirement #:
19

Requirement Type:
Functional

Event/BUC/PUC #:
Discuss Attendance Issues

Description:

The system must allow supervisors to discuss attendance issues with employees and document the discussion.

Rationale:

Promotes effective communication and resolution of attendance-related problems.

Originator:

Supervisor, HR Department

Fit Criterion:

- Attendance issues must be logged for each employee.
- The system must allow supervisors to record discussion outcomes and actions taken.

Customer Satisfaction: 5

Customer Dissatisfaction: 3

Priority: Attendance management system, employee communication module.

Conflicts:

Supporting Materials: Attendance discussion documentation templates.

History: Requirement added on 30th November 2024.

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Requirement #:
20

Requirement Type:
Functional

Event/BUC/PUC #:
Review Employee Data

Description:

The system must allow supervisors to review an employee's historical performance and attendance data before making disciplinary decisions

Rationale: Informed decisions are essential for fair and consistent discipline actions.

Originator: Supervisor, HR Department

Fit Criterion:

- The employee's data must be accessible and easy to review.
- The system must provide a clear overview of performance history, attendance records, and any prior disciplinary actions.

Customer Satisfaction: 5

Customer Dissatisfaction: 2

Priority: Employee performance and attendance tracking systems.

Conflicts:

Supporting Materials: Employee data review checklist.

History: Requirement added on 30th November 2024.

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Requirement #:
21

Requirement Type:
Functional

Event/BUC/PUC #:
Update Employee Status

Description:

The system must allow supervisors to update an employee's status (e.g., under investigation, probation).

Rationale: Tracking employee status allows supervisors to manage the disciplinary process and monitor progress.

Originator: Supervisor, HR Department

Fit Criterion:

- Employee status must be updated in real-time.
- The system must notify relevant parties (HR, management) when a status change occurs.

Customer Satisfaction: 4

Customer Dissatisfaction: 3

Priority: Employee status management system.

Conflicts:

Supporting Materials: Employee status update template.

History: Requirement added on 30th November 2024.

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Requirement #:
22

Requirement Type:
Functional

Event/BUC/PUC #:
Place Employee on Probation

Description:

The system must allow supervisors to place an employee on probation after formal warnings.

Rationale:

Probation provides a structured period for monitoring employee performance and behavior.

Originator: Supervisor, HR Department

Fit Criterion:

- Probation status must be updated immediately in the system.
- The employee should be informed and reminded of probation terms.

Customer Satisfaction: 4

Customer Dissatisfaction: 2

Priority: Employee records system, performance review system. **Conflicts:**

Supporting Materials: Probation period documentation.

History: Requirement added on 30th November 2024.

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Requirement #:
23

Requirement Type:
Functional

Event/BUC/PUC #:
Restore Employee Status

Description:

The system must allow supervisors to restore an employee's status to "In Good Standing" if issues are resolved after probation.

Rationale:

Restoring status ensures employees are recognized for improved performance after probation.

Originator: Supervisor, HR Department

Fit Criterion:

- Employee status must be updated immediately upon completion of probation.
- The system should notify the employee and relevant departments of the status change

Customer Satisfaction: 5

Customer Dissatisfaction: 2

Priority: Employee status management system. **Conflicts:**

Supporting Materials: Probation completion and status restoration guidelines.

History: Requirement added on 30th November 2024.

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Requirement #:
24

Requirement Type:
Functional

Event/BUC/PUC #:
Terminate Employment

Description:

The system must allow the admin to terminate an employee's employment if corrective actions fail.

Rationale:

Ensures that termination is processed according to company policy and that all legal requirements are met.

Originator: Admin, HR Department

Fit Criterion:

- Termination must trigger exit processes, such as final pay calculations and return of company property.
- The system must document the reason for termination and provide a record of corrective actions taken.

Customer Satisfaction: 4

Customer Dissatisfaction: 1

Priority: HR management system, employee records.

Conflicts:

Supporting Materials: Termination checklist, exit interview template.

History: Requirement added on 30th November 2024.