*I. “System vision document: Employee Management System”*

**Problem Description**

Modern organizations face significant challenges in managing their human resources efficiently. Traditional, manual methods for handling employee records, payroll, leave requests, and performance tracking are time-consuming, prone to errors, and lack real-time visibility. This inefficiency leads to reduced productivity, poor compliance with labor regulations, and dissatisfaction among employees and HR staff. A centralized, automated solution is needed to streamline HR operations, improve data accuracy, and enhance user experience.

**System Capabilities**

The new Employee Management System will have the following capabilities:

* **Employee Information Management**: Add and manage comprehensive employee profiles, including personal details, job roles, and employment history.
* **Payroll Processing**: Calculate payroll automatically, considering taxes, bonuses, and deductions, and ensure timely salary disbursement.
* **Leave and Attendance Management**: Track employee attendance, manage leave requests, and display leave status to employees.
* **Resignation Processing**: Enable employees to submit resignations and track their resignation status.
* **Holiday and Event Management**: Maintain and display a list of official holidays and events.
* **User Access Levels**: Provide differentiated access for HR administrators (full control) and employees (restricted to personal information).

**Business Benefits**

Implementing this Employee Management System will provide several benefits, including:

* **Increased Efficiency**: Automate repetitive HR tasks, freeing up HR staff for strategic work.
* **Enhanced Data Accuracy**: Minimize errors associated with manual data entry and calculations.
* **Improved Employee Satisfaction**: Empower employees with self-service options to check leave balances, salary details, and other relevant information.
* **Better Decision-Making**: Provide HR with centralized and real-time data to make informed decisions regarding staffing and resources.
* **Cost Savings**: Reduce the need for extensive paper documentation and storage, leading to lower operational costs.

*II.User Stories*

### **System Analyst**

### **User story 1 :**

*As a system analyst, I want to gather detailed information from all stakeholders so that I can accurately understand their requirements for the Employee Management System.*

**Acceptance Criteria:**

* Conduct interviews with HR, admins, employees, and management to identify key HR and operational functions.
* Document HR processes (e.g., payroll, leave, hiring) for clarity.
* Distribute surveys to employees to gather feedback on current HR workflows and desired system improvements.
* Compile findings into a report detailing system functionalities and areas for improvement.

**User Story 2**

*As a system analyst, I want to document functional and non-functional requirements for employee data, payroll, and HR processes so that developers can implement features accurately.*

**Acceptance Criteria:**

* Identify functional requirements (e.g., employee record management, payroll processing).
* Define non-functional requirements like data security and privacy standards.
* Review use cases with stakeholders to ensure alignment with organizational needs.

**User story 3**

*As a system analyst, I want to prioritize core HR functions based on stakeholder input, so that development focuses on high-impact features.*

**Acceptance Criteria:**

* Rank requirements based on stakeholder feedback and project scope.
* Confirm priority list with HR and management to ensure alignment with organizational goals.
* Review priorities with stakeholders periodically to incorporate any changes.

**User story 4**

*As a system analyst, I want to present the EMS requirements to stakeholders for final review, so that all needs are confirmed before development.*

**Acceptance Criteria:**

* Schedule a requirements review meeting with key stakeholders.
* Document any additional needs or corrections during feedback.
* Conduct a final review to confirm all requirements meet user needs.

**Admin**

**User Story 1**

*As an Admin, I want to add or update company details so that accurate information is available for all employees.*

**Acceptance Criteria**:

* Admin can add or update fields like company name, address, and organizational structure.
* Changes to company information are reflected immediately across the system.
* System logs updates with timestamps.

**User Story 2**

*As an Admin, I want to add or update employee information so that records remain accurate and current.*

**Acceptance Criteria**:

* Admin can enter fields such as name, role, and contact information.
* Changes are saved and accessible in the employee’s profile.
* Notification is sent to relevant departments when new records are created.

**User Story** **3**

*As an Admin, I want to review and manage employee leave requests so that employee absences are tracked and approved appropriately.*

**Acceptance Criteria**:

* Admin can approve or reject leave requests and add comments.
* System updates leave balances accordingly.
* Notification is sent to employees upon request status change.

**User Story** **4**

*As an Admin, I want to add, remove, or update public holidays to ensure that holiday schedules are accurate.*

**Acceptance Criteria**:

* Admin can add, update, or remove holiday entries.
* Employees receive notifications of updated holiday schedules.
* Holiday changes are reflected in the calendar and scheduling system.

**User Story 5**

*As an Admin, I want to process monthly payroll to ensure employees are paid accurately and on time.*

**Acceptance Criteria**:

* Admin can calculate payroll, including deductions and taxes.
* System generates payroll records and pay slips for employees.
* Notifications are sent to employees once payroll is completed.

**User Story 6**

*As an Admin, I want to complete the onboarding process for new hires to ensure they are set up for success.*

**Acceptance Criteria**:

* Admin can track and complete onboarding tasks.
* Onboarding tasks include setting up accounts and initial training.
* Notifications are sent to relevant departments.

**User Story 7**

*As an Admin, I want to process employee resignations efficiently.*

**Acceptance Criteria**:

* Admin can update employee status to "Resigned."
* System generates exit tasks and notifications for HR.
* Employee receives confirmation of resignation processing.

**User Story 8**

*As an Admin, I want to terminate an employee’s position if attendance corrective actions fail.*

**Acceptance Criteria**:

* Admin can finalize and document termination.
* Termination notification is sent to HR and affected departments.
* Termination details are recorded in the employee’s profile.

**User Story 9**

*As an Admin, I want to conduct quarterly performance reviews to evaluate employee performance.*

**Acceptance Criteria**:

* Admin can schedule and conduct reviews with structured feedback sections.
* Review results are saved in the employee’s record.
* Employees are notified of their review outcome.

**Recruiter**

**User Story 1**

*As a Recruiter, I want to analyze staffing needs and manage recruitment to support hiring goals.*

**Acceptance Criteria**:

* Recruiter can view analysis reports.
* Analysis includes current team capacity and open roles.
* Reports are generated and accessible for planning.

**User Story 2**

*As a Recruiter, I want to post job openings to attract candidates.*

**Acceptance Criteria**:

* Recruiter can create and publish job ads.
* Recruiter can edit or remove ads as needed.
* Ad analytics are tracked, including views and applications received.

**User Story 3**

*As a Recruiter, I want to schedule interviews with shortlisted candidates for hiring consideration.*

**Acceptance Criteria**:

* Recruiter can set interview times and assign interviewers.
* Candidates are notified of interview schedules.
* System updates candidate status to "Interview Scheduled."

**User Story** **4**

*As a Recruiter, I want to select the best candidate for open roles based on qualifications.*

**Acceptance Criteria**:

* Recruiter can review candidate profiles and qualifications.
* System records the selected candidate in the hiring record.
* Notification is sent to HR upon candidate selection.

**User Story 5**

*As a Recruiter, I want to extend a job offer to selected candidates.*

**Acceptance Criteria**:

* Recruiter can create and send an official offer.
* System tracks the candidate’s response.
* HR is notified when an offer is accepted or declined.

**Candidate/ Current Employee**

**User Story 1**

*As a Candidate, I want to submit a job application to be considered for open positions.*

**Acceptance Criteria**:

* Candidates can fill out the application form and upload documents.
* System confirms receipt of the application.
* Candidate receives an application status update.

**User Story 2**

*As a Candidate, I want to reject or accept a job offer to start my employment with the company.*

**Acceptance Criteria**:

* Candidates can view and formally accept/decline the offer within the system.
* System triggers the onboarding process if accepted.
* Offer response is confirmed with HR.

**User Story 3**

*As an Employee, I want to check the current status of my leave requests to stay informed.*

**Acceptance Criteria**:

* Employees can view the current status of leave requests.
* System logs leave request statuses.
* Notifications are sent on status change.

**User Story 4**

*As an Employee, I want to view my salary breakdown, including deductions.*

**Acceptance Criteria**:

* Employees can access a detailed salary breakdown.
* Deductions, taxes, and allowances are clearly listed.
* Records are updated monthly.

**User Story 5**

*As an Employee, I want to view the company’s holiday list.*

**Acceptance Criteria**:

* Employees can view upcoming public holidays.
* Holiday updates are reflected in real-time.
* System displays the holiday list for the current year.

**User Story 6**

*As an Employee, I want to submit a resignation if I wish to leave the company.*

**Acceptance Criteria**:

* Employees can submit a formal resignation notice.
* System updates the employee’s status.
* HR is notified of the resignation.

**Supervisor**

**User Story 1**

*As a Supervisor, I want to investigate tardiness incidents to identify trends and reasons for delays.*

**Acceptance Criteria**:

* Supervisor can view tardiness history for employees.
* Investigation results are saved in the employee record.
* Supervisor can mark the investigation as completed.

**User Story 2**

*As a Supervisor, I want to review employee history for decision-making.*

**Acceptance Criteria:**

* Supervisor can access attendance, performance, and disciplinary records.
* Supervisor’s notes are saved in the employee’s performance review.

**User Story 3**

*As a Supervisor, I want to place an employee on probation for attendance issues to encourage improvement.*

**Acceptance Criteria**:

* Supervisor can mark the employee as "On Probation."
* Probation status is updated in the system.
* Notifications are sent to HR and the employee.

**User Story 4**

*As a Supervisor, I want to offer counseling or resources to improve employee performance*

**Acceptance Criteria**:

* The counseling session details (e.g., type, date) can be recorded.
* The employee receives a notification with the details of the counseling offer.
* The employee can accept or decline the counseling offer in the system.

*III.User Cases*

### **1. Step-by-Step Application of the Event Decomposition Technique**

### **A. External Events**

#### **Add Company Information Use Case:** Add or Update Company Info **User:** Admin **Description:** Admin adds or updates company details like name and address.

#### **Add Employee Details Use Case:** Add New Employee Details **User:** Admin **Description:** Admin creates or updates employee records.

#### **Manage Leaves Use Case:** Manage Leave Requests **User:** Admin **Description:** Admin reviews and manages employee leave requests.

#### **Add Public Holidays Use Case:** Add Public Holidays **User:** Admin **Description:** Admin adds, updates, or removes official holidays.

#### **Recruit Candidates Use Case:** Analyze Hiring Needs **User:** Recruiter **Description:** Recruiter assesses staffing needs and plans recruitment.

#### **Post Job Ad Use Case:** Post Job Advertisement **User:** Recruiter **Description:** Recruiter posts job openings to attract candidates.

#### **Apply for Job Use Case:** Apply for Job **User:** Candidate **Description:** Candidate submits an application for a job position.

#### **Accept or Reject Job Offer Use Case:** Accept or reject Job Offer **User:** Candidate **Description:** Candidate accepts or rejects a job offer.

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### **B. Temporal Events**

#### **Process Payroll Use Case:** Process Payroll **User:** Admin **Description:** Admin processes payroll at the end of each month. **Triggering Point:** End of the month

#### **Schedule Interviews Use Case:** Schedule Interviews **User:** Recruiter **Description:** Recruiter schedules interviews with shortlisted candidates. **Triggering Point:** After candidates are shortlisted and available

#### **Conduct Interviews Use Case:** Conduct Interviews **User:** Interviewer **Description:** Interviewer conducts interviews and records feedback. **Triggering Point:** Interview is scheduled

#### **Quarterly Review Use Case:** Conduct Performance Review **User:** Admin **Description:** Admin performs quarterly performance reviews for employees. **Triggering Point:** Scheduled performance review dates

#### **Offer Job Position Use Case:** Extend Job Offer **User:** Recruiter **Description:** Recruiter sends a formal job offer to a selected candidate. **Triggering Point:** After a candidate is selected for the role

#### **View Salary Details Use Case:** View Salary Details **User:** Employee **Description:** Employee views a breakdown of their earnings and deductions. **Triggering Point:** After payroll processing is complete

#### **View Holiday List Use Case:** View Holiday List **User:** Employee **Description:** Employee views upcoming company holidays. **Triggering Point:** After holiday schedules are updated

#### **Onboard New Employee Use Case:** Complete Onboarding **User:** Admin **Description:** Admin completes the onboarding process for new hires. **Triggering Point:** After a new employee is hired

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### **C. State Events**

#### **Check Leave Status Use Case:** Notify Leave Status Change **User:** Employee **Description:** Employee views the updated status of their leave request. **State Change:** Leave Status Changed

#### **Employee Resigns Use Case:** Process Resignation **User:** Admin **Description:** Admin processes resignation and starts the offboarding process. **State Change:** Employee Resigned

#### **Investigate Tardiness Use Case:** Investigate Tardiness **User:** Supervisor **Description:** Supervisor investigates employee tardiness incidents. **State Change:** Investigation Initiated

#### **Communicate with Employee Use Case:** Discuss Attendance Issues **User:** Supervisor **Description:** Supervisor discusses attendance issues with the employee. **State Change:** Attendance Discussed

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#### **Review Employee History Use Case:** Review Employee Data **User:** Supervisor **Description:** Supervisor reviews employee data before making disciplinary decisions. **State Change:** Employee Data Reviewed

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#### **Update Employee Status Use Case:** Update Status **User:** Supervisor **Description:** Supervisor updates an employee's status (e.g., Under Investigation). **State Change:** Employee Status Updated

#### **Mark Employee on Probation Use Case:** Place Employee on Probation **User:** Supervisor **Description:** Supervisor places an employee on probation after formal warnings. **State Change:** Employee Placed on Probation

#### **Restore Employee Status Use Case:** Update Employee Status **User:** Supervisor **Description:** Supervisor restores an employee’s status to "In Good Standing" if resolved. **State Change:** Employee Status Restored

#### **Terminate Employee Use Case:** Terminate Employment **User:** Admin **Description:** Admin terminates the employment if corrective actions fail. **State Change:** Employee Terminated

| **Event** | **Event Type** | **User Role** | **Use Case** |
| --- | --- | --- | --- |
| Add Company Information | External | Admin | Add or Update Company Info |
| Add Employee Details | External | Admin | Add New Employee Details |
| Manage Leave Requests | External | Admin | Manage Leave Requests |
| Add Public Holidays | External | Admin | Add Public Holidays |
| Recruit Candidates | External | Recruiter | Analyze Hiring Needs |
| Post Job Ad | External | Recruiter | Post Job Advertisement |
| Apply for Job | External | Candidate | Apply for Job |
| Accept or reject Job Offer | External | Candidate | Accept or reject Job Offer |
| Process Payroll | Temporal | Admin | Process Payroll |
| Schedule Interviews | Temporal | Recruiter | Schedule Interviews |
| Conduct Interviews | Temporal | Interviewer | Conduct Interviews |
| Quarterly Review | Temporal | Admin | Conduct Performance Review |
| Offer Job Position | Temporal | Recruiter | Extend Job Offer |
| View Salary Details | Temporal | Employee | View Salary Details |
| View Holiday List | Temporal | Employee | View Holiday List |
| Onboard New Employee | Temporal | Admin | Complete Onboarding |
| Check Leave Status | State | Employee | Notify Leave Status Change |
| Employee Resigns | State | Admin | Process Resignation |
| Investigate Tardiness | State | Supervisor | Investigate Tardiness |
| Communicate with Employee | State | Supervisor | Discuss Attendance Issues |
| Review Employee History | State | Supervisor | Review Employee Data |
| Update Employee Status | State | Supervisor | Update Status |
| Mark Employee on Probation | State | Supervisor | Place Employee on Probation |
| Restore Employee Status | State | Supervisor | Update Employee Status |
| Terminate Employee | State | Admin | Terminate Employment |

**Part 2: Events, Event Types, Users, and Corresponding Use CasesPart 3: Brief Use Case Descriptions**

| **Use Case** | **Brief Description** |
| --- | --- |
| **Add or Update Company Info** | **Admin can add or update company details such as name, address, and structure.** |
| **Add New Employee Details** | **Admin can create or update employee records, including personal and job details.** |
| **Manage Leave Requests** | **Admin reviews and manages employee leave requests, including approval/rejection.** |
| **Add Public Holidays** | **Admin can add, update, or remove official public holidays for the company.** |
| **Analyze Hiring Needs** | **Recruiter assesses staffing requirements and manages recruitment budgets.** |
| **Post Job Advertisement** | **Recruiter posts job openings to attract candidates to the company.** |
| **Apply for Job** | **Candidate submits their application for open positions with required documents.** |
| **Accept or reject Job Offer** | **Candidate rejects or accepts the job offer to formally begin the employment process.** |
| **Process Payroll** | **Admin processes payroll at the end of each month, calculating pay and deductions.** |
| **Schedule Interviews** | **Recruiter schedules interviews with shortlisted candidates.** |
| **Conduct Interviews** | **Interviewer conducts interviews, evaluates candidates, and provides feedback.** |
| **Conduct Performance Review** | **Admin performs quarterly performance reviews for employees, evaluating work.** |
| **Extend Job Offer** | **Recruiter sends a formal job offer to selected candidates.** |
| **View Salary Details** | **Employee can view a breakdown of their earnings, including deductions and bonuses.** |
| **View Holiday List** | **Employee views the company’s official holiday list for the year.** |
| **Complete Onboarding** | **Admin completes the onboarding process for new hires, including training setup.** |
| **Notify Leave Status Change** | **Employee views and tracks the updated status of their leave request.** |
| **Process Resignation** | **Admin processes an employee’s resignation and starts the offboarding process.** |
| **Investigate Tardiness** | **Supervisor investigates and analyzes tardiness incidents for specific employees.** |
| **Discuss Attendance Issues** | **Supervisor discusses attendance issues with employees to address lateness.** |
| **Review Employee Data** | **Supervisor reviews employee’s performance, attendance, and disciplinary history.** |
| **Place Employee on Probation** | **Supervisor places an employee on probation following formal warnings or issues.** |
| **Update Employee Status** | **Supervisor restores an employee's status after satisfactory improvement.** |
| **Terminate Employment** | **Admin terminates an employee’s position due to failure in meeting performance or attendance standards.** |

**Part 4 : UML use case Diagram**

