**Project Title: Employee Management System**

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**Overview**

The Employee Management System (EMS) is a comprehensive software solution designed to streamline the administration of employee activities and human resources (HR) tasks within an organization. The system provides a centralized platform for HR administrators to efficiently manage employee details, payroll processing, leave requests, and holiday scheduling. Additionally, it offers employees easy access to their personal information, payroll details, leave status, and holiday calendars. This project aims to enhance productivity, accuracy, and transparency in managing HR operations. The scope of the project covers the following functionalities:

**Project Scope**

**Admin Module**:

1. **Employee Management:**

* **Add Employee:** Allows HR to add new employee details, including personal information, contact details, position, department, and date of joining.
* **Update Employee:** Enable HR to update existing employee information as needed. For Example, changing the name or address of employee, etc.
* **Delete Employee:** provide functionality for HR to remove an employee from the system when they leave the company.
* **View Employee List:** Display a list of all employees with search and filter capabilities.

1. **Payroll management:**

* **Salary Calculations:** Automate salary calculation based on predefined rules and employee attendance records.
* **Generate Pay Slips:** Create and distribute digital pay slips to employees.
* **Deduction and Bonuses:** Manage payroll deductions (e.g., taxes, social security) and bonuses.
* **Payroll Reports:** Generate comprehensive payroll reports for auditing and financial planning.

1. **Leave Management:**
   * **Salary Calculation:** Allow employees to apply for leave online.
   * **Approve/Reject Leave:** Enable HR to approve or reject leave applications.
   * **Leave Balance Tracking:** Track and display leave balances for each employee.
   * **Leave Reports:** Generate reports on leave usage and trends.
2. **Holiday calendar Management:**

* **Add Holidays:** Enable HR to add official holidays to the calendar.
  + **Update/ Delate Holidays:** Provide functionality to update or delete existing holiday entries.
  + **Holiday List:** Display a comprehensive list of all holidays.

**Employee Module**:

1. **View Personal Details:**
   * **Profile Information:** Allow employees to view their personal and contact information.
   * **Update Contact Details:** Enable employees to update their contact details.
2. **Check Payroll Information:**

* **View Pay Slips:** Allow employees to view and download their pay slips.
* **Salary Breakdown:** Provide detailed breakdown of salary components.

1. **Apply for Leave and Check Leave Status:**

* **Leave Application:** Enable employees to apply for various types of leave (sick leave, vacation, etc.).
* **Leave Status:** Allow employees to check the status of their leave applications (approved, pending, rejected).
* **Leave History:** Display a history of all past leave applications and their statuses.

1. **View Holiday Calendar:**
   * **Holiday List:** Provide a view of all upcoming holidays and public holidays.

**Supportive Tools and Services:**

**Database Management System:** MySQL (8.0) will be used to store and manage all employee, payroll, leave, and holiday data.

**REST API support for data Operations:** ASP.NET Core Web API will provide RESTful services for data operations, ensuring efficient communication between the front-end and back-end.

**Front-End visualization:** React.js (17.0) will be used for creating a responsive and user-friendly interface for both HR and employees.

**Version Control Integration:** GitHub will be utilized for source code management, version control, and collaboration.

**Project Users, Actors, Vendors, Actuators**

**Project Users**:

* **HR/Admin**: Responsible for managing employee data, payroll, and leave.
* **Employees**: Can view their personal information, payroll details, leave status, and holiday calendar.

**Actors**:

* **HR/Admin**: Perform CRUD operations on employee data, manage payroll, leave, and holidays.
* **Employees**: Interact with the system to view their details and apply for leave.

**Vendors**:

* **Third-party services:** Integration with external services for advanced payroll and leave management solutions.

**Actuators**:

* **System notifications:**  Send automated notifications for leave application status updates and payroll processing.

**Project Properties**

**Programming Language**: C# (.Net Core)

* The core application will be built using C# in the .NET Core framework, providing a robust and scalable backend.

**Database Management System**: MySQL (8.0)

* MySQL will handle data storage and management, offering reliability and performance.

**Front-End Framework**: React.js (17.0)

* React.js will be used to build an interactive and responsive user interface.

**REST API**: ASP.NET Core Web API

* The backend services will be exposed via REST APIs built using ASP.NET Core Web API, facilitating seamless communication between the front-end and back-end.

**Version Control**: GitHub

* GitHub will be used for version control, allowing efficient code management, collaboration, and deployment.

This Employee Management System will significantly enhance HR operations by automating and simplifying various administrative tasks, thereby allowing HR personnel to focus on more strategic activities.