

Replit Agent Prompt: Build a Human Resource Management System

Project Name: HRMS Human Resource Management System ERP

Project Description:

Midcai Consulting Private Limited, an IT services company, requires a comprehensive web-based ERP system to streamline its workforce and organizational operations. The integrated **HRMS ERP** will centralize key functions such as **employee management, attendance, leave tracking, holidays, reimbursements, payroll, and document management**.

In addition to HR-related modules, the system will include foundational **ERP components** like **company accounts, stock management, buying & selling, and manufacturing** (as placeholders for future expansion).

The platform will provide **role-based access** for different user types — **Administrators, HR professionals, Managers, and Employees** — and support operations across various **departments**, including:

- Project Management
- Marketing
- Sales
- Human Resources
- Accounts
- Inventory
- IT

The ERP will also maintain comprehensive **company details** such as company profile, structure, policies, and contact information, ensuring all departments operate in a unified and efficient system.

Target Platform

Platform: Web

Frontend: React (using Vite or Create React App)

Backend: Python Flask

Database: PostgreSQL

Operating Environment

Type: Online

(Ensure email and PDF generation features are supported)

Hosting Options

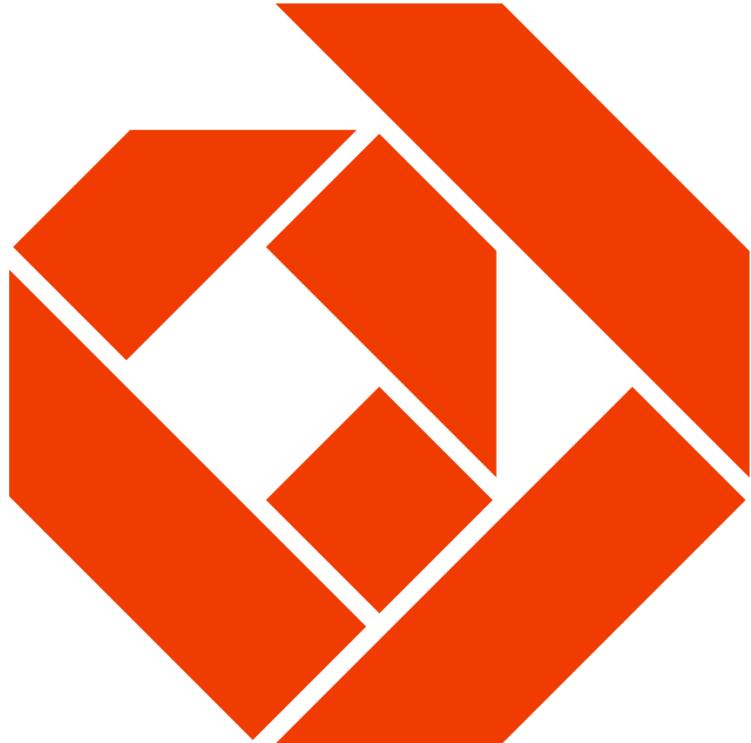
To be hosted on: On Replit only

Language Preferences

- **Language for Replit Agent communication:** English
 - **Language for Application Interface:** English
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Interface Style

- Clean and user-friendly
- Tabular views with pagination and sorting
- Role-specific views and controls
- Use the provided colour coding for building the interface:
 - MIDCAI Beige: F3EDED
 - MIDCAI Orange F23F00
 - MIDCAI Black 100D08
 - White FFFFFF
- Use the provided logo and details for branding:
 - Name = MIDCAI
 - Tag Line = Unfolding Perpetually
 - Address = 906-907, Signature Elite, J 7, Govind Marg,Nr. Narayan Singh Circle, Jaipur, Rajasthan - 302004
 - Contact phone: +91-9503118434
 - Email = contact@midcai.com
 - Website: <https://midcai.com/>



Modules and Functionality

Administrator Module:

★ Tables:

- **UserProfile**: Id, Role_Id, Company, FirstName, MiddleName, LastName, Email, Phone, Address (Street, City, State, Country), Language, TimeZone, Gender, Birthdate, UserName, Password_Hash, Status (Active/Inactive), User_Type, Bank_Account, Insurance_Opted (yes/no), Department_Id, Manager_Id, Joining_Date
- **UserType** : UserType Name (Individual / Manager / Admin / Vendor / Contractor), UserType ID.
- **UserRole**: Role_Id, RoleName (Developer, Tech Lead, HR Executive, Project Manager) , Role_Description, Access_type, Access_level

- **Department:** Department_ID, Department_Name, Department_Description

★ Features using UserProfile:

- Default users: admin/admin
- Each logged-in user sees their name in the UI with a profile link. They can view and edit their own profile.
- Email-based temporary password on user creation
- Secure password hashing & storage
- Password reset/change features for all users (self-service + admin override)
- Administrator role has full access to manage users (Edit & Delete) within the User Management module.

● Features using UserRole:

- Role-based access control
- Access_type logic:
- Admin has full access to all modules. Admin can add/edit/delete user profiles with validation.
- HR manages attendance, leave, payroll, reimbursements.
- Manager approves leaves and manages team-level reports.
- Employee has self-service access to attendance, leave and reimbursements.
- Accountant manages payroll and accounts modules.

● Main Functions :

- **Employee Database Management** – Add, update, and maintain all employee records and documents.
- **User Role & Access Control** – Assign system roles (Admin, HR, Employee) and manage permissions.
- **Organizational Structure Setup** – Define departments, designations, reporting lines, and hierarchy.
- **Policy Configuration** – Set up HR policies like attendance, leave, holidays, and holiday calendars.
- **Leave & Attendance Administration** – Manage leave types, attendance rules, and approval workflows.
- **Payroll Configuration** – Set up salary structures, benefits, deductions, and statutory compliance.
- **Employee Lifecycle Management** – Handle onboarding, transfers, promotions, and exits.
- **System Security & Configuration** – Manage passwords, access rights, and data backups.
- **Workflow & Approval Management** – Automate approval processes (leave, attendance, payroll, etc.).
- **Document Management** – Store and manage employee-related files (ID proofs, offer letters, etc.).
- **Reports & Analytics** – Generate HR reports like attendance, headcount, and payroll summaries.

- **Compliance Management** – Maintain statutory reports (PF, ESI, PT, TDS, etc.).
 - **Audit & Activity Logs** – Track user activities and system changes for transparency.
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Attendance Module:

- Table:
 - **Attendance**: Id, User_Id, Attendance_Date, Status[Present, Absent, On Leave, Half Day, Work From Home, Work from Client Location], Leave_Type, Company_Id, Check_In, Check_Out, Early_Sign_In, Early_Sign_Out, Late_Sign_In, Late_Sign_Out, Shift_Timing, Total duration (day).
 - Bulk Attendance - Yes (only system admin can access)
- Features:
 - Role Based Access
 - Calculate working hours (check-in/check-out difference)
 - Mark attendance status (Present, Absent, On Leave, Half Day, Work From Home)
 - Edit Access Users
 - Roles:
 - Permissions:
- Functions:
 - Attendance Setup:HR defines:
 - Office timings
 - Attendance rules : Full Day & Half Day Rules - Defines how many hours count as full or half day.
 - LOP (Loss of Pay) Rules - Defines when salary is deducted for absence.
 - Attendance Capture:Methods of capturing attendance:
 - Web portal login/logout
 - Attendance Updation :
 - Excel or manual import (if not automated)
 - Location Manual updation
 - Attendance Regularization : Employees can request corrections for missed punches - If biometric or system login failed, employees can correct it.
 - HR or managers review and approve/reject -The request goes to the reporting manager or HR for approval. The approver gets an email as soon as leave is applied. The approver can approve the attendance which will get corrected automatically, can reject the request that will remain unchanged.
 - Apply leave type (Sick leave, annual leave, short leave, etc..) based on the count of remaining leaves available in the user's leave stock.
 - Integration with Leave & Payroll
 - Approved leaves are auto-marked as "Leave" in attendance.
 - Attendance summary feeds into **Payroll** for:
 - Days worked

- LOP (Loss of Pay) days
 - Payroll and leave balances will calculated correctly.
 - Reporting & Monitoring: Dashboards:
 - Regularization frequency by employee
 - Common reasons (e.g., missed punch, on-duty)
 - Pending approvals
 - Approved vs rejected requests
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Holiday Module:

- Tables:
 - **Holiday**: Id, Name, Company, Holiday_List, From_Date, To_Date, Total_Holidays
 - **HolidayDetails**: Id, Date, Description
- Features:
 - Maintain a list of public and company-specific holidays.
 - Role Based Access:
 - Edit Access users: Administrator
 - Full CRUD on Holiday, HolidayDetails.
- Main Functions:
 - Holiday Calendar Creation-
 - HR defines the list of company holidays for the year.
 - Can be created for the whole organization or specific locations/branches:
 - Create multiple calendars for different offices, states, or countries.
 - Holiday Category Management-
 - Set different types of holidays — National, Festival, Restricted, Company-specific, etc.
 - Location- or Department-wise Calendar-
 - Integration with Attendance & Leave Modules-
 - Holidays are automatically marked as "Off" in attendance.
 - Paid Leave and payroll calculations skip holiday days automatically.
 - Auto Holiday Mapping to Employees-
 - System links employees to their respective holiday calendar based on location or department.
 - Editing & Updating Holidays-
 - HR can easily add, remove, or modify holidays mid-year if needed.

Leaves Module:

- Tables:
 - **Leaves**: Id, User_Id, Leave_Type_Id, Company_Id, From_Date, To_Date, Half_Day, Reason, Status[Open, Approved, Rejected, Cancelled], Posting_Date, Manager_Id

- **LeaveType**: Id, Leave_Type_Name, Maximum_Consecutive_Leaves_Allowed, Is_Carry_Forward(boolean)
 - **LeaveLedger**: Leaveledger_Id, Employee_Name, Leave_type, Total_leaves

- Features:
 - Define Leave policies (Annual, Sick, Comp-Off, Unpaid)
 - Apply for leave with date range and reason.
 - Approval workflow
 - Track leave balances and leave history.
 - Auto-mark approved leave days in attendance.
 - There must be notification upon creation of new Leave application claim
 - Role Based Access:
 - Edit Access users: Administrator
 - Full CRUD on Leave, LeaveType.

- Functions:
 - HR configures:
 - Leave types (Casual, Sick, Earned, etc..)
 - Entitlement rules (e.g., 12 CL per year)
 - Approval workflow
 - Carry-forward and encashment rules
 - Employee Applies for Leave:Employee logs into HRMS → chooses Leave Type, Start & End Date, and Reason → Submits request.
 - Manager/HR Approves or Rejects:
 - **Approves** → Leave marked as “Approved” in the system.
 - **Rejects** → Employee notified with remarks.
 - System Updates Records:
 - Once approved:
 - Attendance record shows “Leave” instead of “Absent.”
 - Payroll reflects full pay (if paid leave).
 - Leave balance auto-updates.
 - Reporting & Analytics:HR can track:
 - Leave utilization by employee or department
 - Absentee trends
 - Remaining leave liabilities (for payroll)



Company Module:

- Tables:
 - **Company**: Id, Company_Name, CostCenter, Country, Date_Of_Establishment

- **CostCenter** : Id, Costcenter_Name, Costcenter_Description
 - Features:
 - Role Based Access:
 - Edit Access users: Administrator
 - Full CRUD on Company.
 - Functions:
 - Company Profile Setup– Stores basic company details like name, address, logo, registration number, tax details, contact info, etc.
 - Organization Hierarchy– Create reporting lines — who reports to whom (for workflow approvals).
 - Location Management– Add and manage multiple branches, offices, plants, or sites with location-specific settings.
 - Department & Designation Setup– Define organizational structure like departments, sections, and job designations.
 - Holiday Calendar Setup– Link branch-wise or region-wise holiday lists to the company setup.
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Reimbursement Module:

- Tables:
 - **Reimbursement**: Id, User_Id, Reimbursement_Type, Date, Amount, Category, Attachment, Status, Approval Manager (Reporting Manager)
 - There will be two layers of approval - first by reporting manager, second by accounts executive
 - There must be notification upon creation of new reimburse claim
 - **ReimbursementType** : (Meals & Entertainment, Office Supplies, Accommodation, Phone & Internet, Others, Travel) Reimbursement_Id, ReimbursementType_Name
- Features:
 - Approve or reject reimbursement
 - Submit reimbursement requests with category, date, receipt(image or PDFs), amount.
 - Generate reimbursement reports
 - Role Based Access:
 - Edit Access users: Administrator
 - Full CRUD on Reimbursement.
- Functions:

- Policy Setup & Configuration- HR defines reimbursement rules — eligible expense types, limits, frequency, and approval hierarchy.
- Expense Category Creation- Set up various claim categories like Travel, Food, Mobile Bill, Internet, Conveyance, Accommodation, etc.
- Employee Claim Submission- Employees submit reimbursement requests via HRMS with details like amount, date, and supporting bills.
- Document Attachment- Employees upload scanned bills, receipts, or invoices as proof for the claim.
- Approval Workflow- Claims automatically route to the reporting manager and Finance for review and approval.
- Verification & Validation- HR or Finance verifies the claim details and attached documents as per company policy.
- Claim Processing- Approved claims are marked for payment; rejected claims are sent back with reasons.
- Integration with Payroll- Approved reimbursement amounts are added to the employee's next payroll cycle or paid separately.
- Claim Tracking- Employees can track the status of their submitted claims — Pending, Approved, Paid, or Rejected.
- Reporting & Analytics- HR can generate reports on expense trends, department-wise spending, and pending claims.

Payroll

- **Payslip:** Id, Payroll_run, user_id, Total_Salary, Basic_Pay, HRA, Travel_Allowance, Other_Allowance, PF, TDS, Net_Pay, Gross, Deductions, Payslip_pdf
- **PayrollRun:** id, company_id, period_start, period_end, created_by, status)
- Features:
 - Simple payroll engine: calculate earnings based on salary, attendance deductions (LWP), reimbursements, taxes (basic placeholder), and statutory items.
 - Generate payslips (PDF). Save files.
 - Payroll admin page: run payroll for period, preview, approve, publish.
 - Payslip download for employees.
- Functions:
 - Employee Salary Setup- Define salary structures (basic pay, HRA, DA, bonuses, deductions) for each employee or grade.
 - Attendance & Leave Integration- Automatically fetches attendance and leave data to calculate payable days and loss of pay (LOP).
 - Salary Calculation- System calculates gross pay, deductions, and net salary based on defined formulas and rules.

- Reimbursement & Allowance Integration– Adds approved reimbursements, incentives, and variable pay to the salary.
- Payroll Processing– Generates monthly payroll, validates all entries, and finalizes the salary.
- Payslip Generation– Creates digital or printable payslips showing complete salary breakup and deductions.
- Tax Management– Manages employee tax declarations, deductions (TDS), and Form 16 generation.