Human Resource Management System (HRMS) MVP Documentation

Version History

Version	Date	Description
HRMS-MVP-P1-1.0-D	01/09/2025	Initial MVP draft with super admin, admin and core module features.

1. Project Overview

This document outlines the Minimum Viable Product (MVP) for a cloud-based Human Resource Management System (HRMS) with multi-tenant architecture. The system will provide essential HR functionality while ensuring data isolation between tenants.

Key Architectural Concepts

- **Multi-Tenant Architecture:** Each company (tenant) has isolated data through a **TenantId** concept
- **Super Admin:** Manages all tenants, subscription plans, global configurations, and cross-tenant analytics
- **Tenant Admin:** Each tenant has their own admin to manage employees, payroll, attendance, etc.
- **Self-Service Portal:** Enables employees to access payslips, attendance, leave requests, and profile management

2. MVP Functional Requirements

The MVP will include only essential features required for a functional HRMS solution:

Tenant Management

- Super Admin can create and manage tenant accounts

- Tenant Admin can manage users, roles, and tenant-specific data
- Configurable tenant settings (company info, business rules, etc.)

User Roles & Permissions

Role	Access Level	Responsibilities
Super Admin	System-wide	Tenant management, global settings, analytics
Tenant Admin	Tenant-specific	User management, tenant settings, all HR functions
HR Manager	HR modules	Employee records, attendance, leave, payroll
Employee	Self-service	Personal profile, attendance, leave requests, payslips

The system will implement JWT authentication with role-based access control.

Core HR Features

1. Employee Management

- Employee profile creation and management
- Department and role mapping
- Document storage for essential employee documents
- Employee status tracking (active, on leave, terminated)

2. Attendance Management

- Basic attendance marking (check-in/check-out)
- Work-from-home tracking
- Monthly attendance summary
- Manager approval workflow

3. Leave Management

- Leave request submission and approval workflow
- Leave balance tracking
- Holiday calendar configuration

- Leave type management (sick, casual, earned, etc.)

4. Payroll Management

- Basic salary structure configuration
- Payslip generation
- Salary disbursement tracking
- Tax component calculations

Reporting & Analytics

- Tenant-wise reports for administrators
- Employee attendance and leave reports
- Basic payroll summaries
- System usage monitoring for Super Admin

3. Non-Functional Requirements

Scalability

- Modular architecture to facilitate easy addition of new features
- Ability to handle growing number of tenants and users
- Horizontal scaling capability for database and application tiers

Security

- Role-based access control for all system functions
- Complete data isolation between tenants
- Encryption for sensitive data (PII, salary information)
- Secure API communications with HTTPS

Performance

- Response time less than 2 seconds for basic operations
- Optimized database queries for multi-tenant scenarios

- Efficient handling of reporting workloads

Technical Stack Flexibility

- Initial implementation: Angular, .NET Core, SQL Server
- Future integration support for React, Redis, MongoDB
- API-first design to support multiple client applications

4. System Architecture

Frontend Architecture

- **Super Admin Portal:** Angular web application for tenant management, system-wide settings, and analytics
- **Tenant Admin Portal:** Angular web application for managing employees, payroll, attendance
- **Employee Self-Service:** Angular web application for profile management, payslips, leave requests
- Responsive design to support both desktop and mobile browsers
- Future scope for dedicated mobile applications

Backend Architecture

- **.NET Core APIs:** RESTful services with modular design
- **Authentication Service:** JWT-based authentication and authorization
- **Tenant Management Service:** Tenant creation, configuration, and management
- **HR Core Service:** Employee, attendance, and leave management
- **Payroll Service:** Salary structure and payslip generation

Database Architecture

- **SQL Server:** Relational database with TenantId column for data isolation
- Database schema includes cross-cutting concerns like auditing and soft deletion

- Tenant-specific configuration stored in dedicated tables
- Future scope for multi-database architecture for larger tenants

5. MVP Scope vs. Future Enhancements

MVP Scope

▼ Tenant Management

- Tenant creation and basic configuration
- User and role management
- Subscription management

▼ User Management

- User onboarding and role assignment
- Basic user profile management
- Password reset and account management

▼ Employee Management

- Employee profiles with essential details
- Department and role mapping
- Basic document management

▼ Attendance & Leave Management

- Basic attendance tracking
- Leave request workflow
- Holiday calendar

▼ Payroll Basics

- Salary structure configuration
- Basic payslip generation
- Simple tax calculations

Future Enhancements

▼ Advanced Features

- AI Chatbots for employee self-service
- Predictive analytics for HR metrics
- Learning Management System (LMS) integration
- Advanced performance management

▼ Technical Enhancements

- Multi-database support for larger tenants
- React-based modules for specialized functions
- Mobile applications for employees
- Advanced reporting with data visualization

▼ Integration Capabilities

- Third-party payroll providers
- Accounting software integration
- Biometric attendance systems
- Recruitment platforms

6. Development Roadmap

Phase	Timeline	Key Deliverables	
Planning & Design	2 weeks	System architecture, database design, UI/UX mockups	
Core Development	8 weeks	Authentication, tenant management, employee management	
HR Modules	8 weeks	Attendance, leave management, basic payroll	
Testing & QA	2 weeks	Unit testing, integration testing, UAT	
Deployment	2 weeks	Production deployment, documentation, training	

Key Milestones

- Architecture approval - End of Week 2
- Tenant management module complete - End of Week 10
- Employee management module complete - End of Week 10
- Core HR modules complete - End of Week 18
- MVP Launch - End of Week 22

7. Conclusion

This MVP documentation provides a comprehensive overview of the essential features required for the HRMS. The multi-tenant architecture ensures data isolation while providing flexibility for future growth. By focusing on core HR functionality for the MVP, we can deliver a valuable product quickly while establishing a foundation for future enhancements.

> The system architecture prioritizes scalability, security, and performance while maintaining technical flexibility for future integrations and features. The modular approach allows for incremental development and deployment of additional features beyond the MVP scope.