Timesheet & HR Management System

Detailed Module-Wise Functional Specification Document

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Project Overview

This document describes the complete requirements, scope, modules, timeline, budget estimation, and execution strategy for the Timesheet & HR Management System. The system will be developed using Angular 17 (Frontend), Node.js with Express (Backend), and MySQL Database.

Technology Stack

Frontend: Angular 17

Backend: Node.js with Express.js

Database: MySQL (MySQL Workbench)

Authentication: JWT Based Authentication

Deployment: Optional

1. Authentication & Authorization Module

- Secure Login with JWT Authentication
- Role-Based Access Control (Super Admin, Admin, Employee, Agent)
- Forgot Password & Reset Password via Email
- Change Password Option
- Session Timeout & Auto Logout
- Login Activity Logs & IP Tracking
- Multi-Factor Authentication (Optional Future Scope)

2. Super Admin Module

- Create / Manage Companies
- Create / Manage Admin Users
- Create / Manage Agents
- Assign Roles & Permissions
- System Configuration Settings
- License & Subscription Management
- Commission Management (10%)
- View All System Reports
- Database Backup & Restore Option

3. Master Management Module

- Employee Master (Add, Edit, Delete, View)
- Department Master
- Designation Master
- Shift Master
- Holiday Master
- Location Master
- Salary Structure Master
- Bank Master
- Leave Type Master

4. Employee Self-Service Module

- View Personal Profile
- Edit Profile Details
- Upload Documents (Aadhar, PAN, etc.)
- Update Bank Details
- View Attendance Records
- View & Download Payslip (PDF)
- Apply Leave
- View Leave Status
- View Working Hours & Overtime

5. Attendance & Timesheet Module

- Punch In / Punch Out
- Geo-Location Capture During Punch
- IP Address Tracking
- Biometric Device Integration
- Manual Attendance Entry by Admin
- Working Hours Calculation
- Overtime Calculation
- Late Mark & Half-Day Rules
- Shift-Based Attendance Tracking
- Attendance Regularization Request

6. Payroll Management Module

- Monthly Salary Processing
- Automatic Salary Calculation Based on Attendance
- PF / ESI / TDS Calculation
- Loan & Advance Deduction
- Bonus & Incentive Management
- Generate Payslip (PDF Format)
- Bulk Payslip Download
- Salary Revision History
- Payroll Approval Workflow

7. Reports & Analytics Module

- Employee Report
- Attendance Report (Daily / Monthly)
- Leave Report
- Payroll Report
- Overtime Report
- Agent Commission Report
- Export Reports to Excel
- Export Reports to PDF
- Dashboard Charts & Analytics

8. Security & Compliance

- Data Encryption (Password Hashing)
- Role-Based Data Access
- Audit Logs
- Secure API Integration
- Regular Database Backup
- GDPR & Data Privacy Ready Structure

9. Estimated Project Timeline (4–5 Months)

1. Requirement Analysis – 1 Week
2. UI/UX Design – 2 Weeks
3. Backend Development – 6 Weeks
4. Frontend Development – 6 Weeks (Parallel)
5. Integration – 2 Weeks
6. Testing & QA – 2 Weeks
7. Deployment & Training – 1 Week

10. Payment Terms

- 30% Advance
- 30% After Backend Completion
- 30% After UAT Approval
- 10% After Deployment

11. Conclusion

This Timesheet & HR Management System will provide a complete solution for employee management, attendance tracking, payroll processing, and reporting. The system will be secure, scalable, and customizable based on client requirements.