

HR SaaS – Leave & Task Management Requirements

1. Overview

This document describes the functional and technical requirements for a multi-tenant HR SaaS platform focused on:

- Policy-driven leave management.
- Employee data and leave seeding.
- Project, task, and stand-up calendar management.
- Role-based access control (RBAC) for Super Admin, Tenant Admin, Manager, and Employee.
- AI-assisted task generation using Google Gemini.

The backend stack is **Express + MongoDB/Mongoose**.

2. Multi-Tenant & User Management

2.1 Tenants

- The system must support multiple tenants (companies) in a single deployment.
- Each tenant has:
 - Name.
 - Optional domain/identifier.
 - Status: active / suspended.
- All business data (employees, leave policies, tasks, etc.) is scoped to a tenant.

2.2 Users & Tenant Users

- A **User** is a global identity (email + password).
- A **TenantUser** binds a User to a specific tenant with additional attributes:
 - isPrimaryAdmin flag.
 - Active/inactive status.
- A single User can belong to multiple tenants (multi-tenant access).

2.3 Roles & Permissions (RBAC)

- Roles: SUPER_ADMIN, TENANT_ADMIN, MANAGER, EMPLOYEE.
- A TenantUser can have multiple roles within a tenant (e.g., MANAGER + EMPLOYEE).
- Permissions are attached to roles (role → permission mapping).
- Access control follows least privilege (only the minimum necessary rights for each role).

Role Capabilities (High-Level)

- **SUPER_ADMIN**
 - Manage tenants.
 - Add/remove tenant admins.
 - Enable/disable modules per tenant (Leaves, Projects, Timesheets, AI Tasks, Stand-up).
 - Impersonate/switch into Tenant Admin view for support/debug, with audit logs.
 - **TENANT_ADMIN**
 - Manage users within tenant (create, update, deactivate).
 - Assign roles (MANAGER/EMPLOYEE) within tenant.
 - Enable/disable modules for tenant's users.
 - Configure default leave policies and work calendars.
 - Perform bulk leave seeding and adjustments.
 - **MANAGER**
 - Manage team-level resources (clients, projects, tasks, employees assigned to them).
 - Approve/reject leave requests for their team.
 - View team leave calendar and task completion.
 - Enable AI task generation for themselves (via Google AI key).
 - Participate in stand-up sessions with visibility into team tasks.
 - **EMPLOYEE**
 - Self-service for leaves (apply, view, update/cancel pending).
 - View and update own tasks and stand-up items.
 - Access personal documents.
 - View assigned clients and projects.
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3. Employee & Policy Model

3.1 Employees

- Each employee record is scoped to a tenant and linked to a TenantUser.
- Attributes:
 - Employee code.
 - Designation.
 - Employment type:
 - FULL_TIME, INTERN, PROBATION, CLIENT_POLICY.
 - Join date, exit date.
 - Manager (reporting manager).
 - Work calendar assignment.
 - Current leave policy assignment.
 - Optional notice period (start/end).

3.2 Work Calendars & Holidays

- A work calendar defines:
 - Timezone.
 - Working days (e.g., Mon–Fri).
 - Default working hours (e.g., 9:30–18:30).
- Holiday sets:

- Scoped to a work calendar and tenant.
 - Distinguish internal vs client-specific holidays.
- Employees can be mapped to:
 - Internal holiday list, or
 - Client holiday list (for client-policy employees).

3.3 Leave Policies & Types

- Each tenant can have multiple **Leave Policies** (versioned by year).
- Example: “Neointeraction Leave Policy 2025”.

Policy Attributes

- Leave year start & end (e.g., 1 Jan – 31 Dec).
- Carry-forward rules:
 - Allowed or not.
 - Max carry-forward days.
- Encashment rules:
 - Usually disabled (no encashment).
- Default max continuous leave days.
- Constraint: LOP > 15 days requires Manager + HR approval.

Leave Types

- Configurable list per tenant/policy, e.g.:
 - PLANNED (annual leave).
 - SICK.
 - FLOATING.
 - HOLIDAY.
 - MATERNITY / ADOPTION / MISCARRIAGE.
 - PATERNITY.
 - MARRIAGE.
- Attributes:
 - Annual entitlement days (e.g., 18 days = 12 planned + 6 sick).
 - Accrual rule: NONE, MONTHLY, YEARLY, PRO_RATA.
 - Eligibility:
 - Employment types (FULL_TIME, INTERN, PROBATION, CLIENT_POLICY).
 - Gender (ANY, MALE, FEMALE).
 - Minimum service days (e.g., 80 days for maternity).
 - Max continuous days (override per type).
 - Flags:
 - requiresDocument.
 - requiresManagerApproval.
 - requiresHrApproval.
 - isPaid / isSpecialLeave.

3.4 Employee Leave Balances & Seeding

3.4.1 Initial Seeding for Existing Employees

- The system must support one-time bulk seeding of leave balances for existing employees:
 - Opening balances per leave type.
 - Used and LOP usage.
- Inputs via:
 - Admin UI (tabular form).
 - CSV/Excel import.
- All seeding actions are auditable (who, when, before/after values).

3.4.2 Automatic Allocation for New Employees

- When a new employee is added:
 - A leave policy is assigned (default tenant policy or specific one).
 - Initial entitlements are auto-calculated based on:
 - Employment type.
 - Join date (pro-rata within current leave year).
 - Policy accrual rules (e.g., 1.5 days per month for 18 days/year).
 - Optionally, employees joining after a cut-off day (e.g., 15th) receive no leaves for that month.
- Tenant Admin/Manager can override initial balances with manual adjustment entries.

3.4.3 Policy Assignment per Employee

- Every employee must be linked to a **Leave Policy**.
 - The system must allow:
 - Default policy at tenant level.
 - Per-employee override with an effective date and reason.
 - Changing policy:
 - May trigger recalculation of future accruals.
 - Does not retroactively modify historical usage; differences are handled via adjustments.
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4. Leave Lifecycle & Business Rules

4.1 Requesting Leaves

- All leave requests must be submitted through the application.
- Planned leave:
 - Must be applied at least 7 days in advance (configurable).
- Emergency/sick leave:
 - Employee must inform manager/HR via phone/message on the same day, before a configured time (e.g., 9:30 AM local).
 - Employee must log the leave formally after returning.

Leave Request Data

- Leave type.
- Date range (start, end).
- Per-day granularity:
 - Full day / First half / Second half.
- Reason (free text).
- Emergency flags:
 - isEmergency.
 - emergencyReportedVia (PHONE/EMAIL/CHAT).
 - emergencyReportedAt.
 - notifiedBeforeTime flag.
- Attachments:
 - Medical certificate (sick/maternity/miscarriage).
 - Invitation card (marriage).
 - Legal custody documents (adoption).

4.2 Validation & Limits

- Validation rules:
 - Check employment type eligibility.
 - Check leave balance for each leave type.
 - Compute any excess as LOP (Loss of Pay).
 - Enforce max continuous leave days:
 - Default or leave-type specific.
 - Not more than two weeks leave at a time, unless overridden.
- Interns/Probation:
 - Only one leave per month, no carry-forward.
 - Extra leaves become LOP.
- Client-policy employees:
 - Use client holiday list for holiday calculations.

4.3 Approvals

- Approval workflow:
 - Manager approval is mandatory for most leave types.
 - HR approval may be required for special leaves (Maternity, Adoption, etc.).
- Approver sees:
 - Request details (dates, type, reason, attachments).
 - Employee balances (entitled, used, remaining).
 - Computed LOP portion.
- Approver actions:
 - Approve.
 - Reject (with comments).
 - Approve with partial LOP conversion.

4.4 LOP & Unauthorized Absence

- LOP is recorded when:
 - Leave exceeds entitlement.
 - Employee has no accrued leaves and still takes time off with approval.
- Unauthorized absence:
 - No check-in and no leave request.
 - System flags such days for HR review and potential disciplinary action.
- LOP > 15 days:
 - Requires joint Manager + HR approval.

4.5 Notice Period & Leave

- If an employee on notice period takes leave:
 - Option A: Extend notice period by the number of leave days.
 - Option B: Treat leave as LOP.
 - The behavior is configurable at policy level.
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5. Project, Task & Stand-Up Management

5.1 Clients & Projects

- Manager (or Tenant Admin) can:
 - Create/edit/delete clients.
 - Create/edit/delete projects under clients.
- Project attributes:
 - Client reference.
 - Name, description.
 - Work calendar and timesheet policy (weekly, bi-weekly, monthly).
 - Flag: requires client approval.

5.2 Tasks

- Managers:
 - Create, assign, update, delete tasks for their team.
- Employees:
 - View tasks assigned to them.
 - Update status and progress.
 - Delete only personal/self-created tasks (if allowed).
- Task attributes:
 - Title, description.
 - Priority.
 - Estimated hours.
 - Due date.
 - Status (TODO, IN_PROGRESS, DONE, BLOCKED).
 - Project association.
 - Assigned employee.
 - AI-generated flag.
 - Stand-up date (planned discussion day).

5.3 Stand-Up Calendar

- Daily stand-up per team or project.
- Stand-up session:
 - Date, time, team, created by.
- Stand-up view:
 - Manager:
 - Sees all team member tasks for the selected day.
 - Can mark tasks as complete, move to next day, or delete (with audit).
 - Employee:
 - Sees only own tasks for the day.
 - Can mark tasks as done or update status.
- Metrics during stand-up:
 - Tasks planned vs completed per person.
 - Percentage completion (tasks and hours).
 - Team-level completion overview.

5.4 AI Task Generation

- Manager can enable AI by:
 - Providing a Google AI (Gemini) API key in their settings.
 - The key must be encrypted and stored securely.
 - AI usage:
 - Manager sends a high-level description and optional goals.
 - System calls Gemini to propose tasks.
 - Manager reviews generated tasks and accepts/edits them before assigning.
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6. Dashboards

6.1 Employee Dashboard

- Widgets:
 - Today's to-do list:
 - Tasks that are due today or overdue.
 - Weekly outlook:
 - Upcoming tasks.
 - Leave summary:
 - Balances per leave type.
 - Next approved leave date.
 - Stand-up summary:
 - Today's stand-up tasks and completion status.

6.2 Manager Dashboard

- Widgets:
 - Team leave calendar and who's on leave.
 - Pending approvals (leaves & timesheets).
 - Team task completion metrics.
 - Stand-up performance summaries.

6.3 HR/Tenant Admin View

- Reports:
 - Leave usage by type, team, employment type.
 - Special leave usage (Maternity, Paternity, etc.).
 - LOP and unauthorized absence statistics.
 - Policy compliance and exceptions.
 - Tools:
 - Bulk leave seeding and adjustments.
 - Policy versioning and assignment.
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7. API & Data Requirements (Express + Mongoose)

7.1 API Design Principles

- RESTful endpoints, versioned under /api/v1.
- Tenant scoping middleware:
 - Reads active tenant ID from JWT/session/header.
 - Applies tenantId filter to all queries.
- RBAC middleware:
 - Resolves TenantUser → Roles → Permissions on each request.
 - Rejects unauthorized operations with 403.

7.2 Key Endpoints (Summary)

Auth & Tenant Context

- POST /api/v1/auth/login
- GET /api/v1/auth/me
- POST /api/v1/auth/switch-tenant (SUPER_ADMIN only)

Employees & Policies

- GET /api/v1/employees
- POST /api/v1/employees
- PATCH /api/v1/employees/:id
- POST /api/v1/employees/:id/leave-policy
- GET /api/v1/leave-policies
- POST /api/v1/leave-policies
- GET /api/v1/leave-types
- POST /api/v1/leave-types

Leave Seeding & Balances

- POST /api/v1/leave-balances/bulk-initialize
- GET /api/v1/me/leave-balances?year=YYYY
- POST /api/v1/employees/:id/leave-adjustments

Leave Requests & Approvals

- GET /api/v1/me/leave-requests
- POST /api/v1/me/leave-requests

- PATCH /api/v1/me/leave-requests/:id
- DELETE /api/v1/me/leave-requests/:id
- GET /api/v1/leave-requests?status=PENDING&team=mine
- POST /api/v1/leave-requests/:id/approve
- POST /api/v1/leave-requests/:id/reject

Clients, Projects, Tasks

- GET /api/v1/clients
- POST /api/v1/clients
- GET /api/v1/projects
- POST /api/v1/projects
- GET /api/v1/tasks
- POST /api/v1/tasks
- PATCH /api/v1/tasks/:id
- DELETE /api/v1/tasks/:id

Stand-Up Calendar

- GET /api/v1/standup/sessions?date=YYYY-MM-DD
- POST /api/v1/standup/sessions
- GET /api/v1/standup/sessions/:id/tasks
- POST /api/v1/standup/sessions/:id/tasks/:taskId/update

AI Settings & Generation

- POST /api/v1/managers/me/ai-settings
- GET /api/v1/managers/me/ai-settings
- POST /api/v1/ai/tasks/generate

8. Non-Functional Requirements

- **Security**
 - JWT-based authentication.
 - Encrypted storage for API keys and sensitive data.
 - Strict tenant isolation on all endpoints.
 - **Auditability**
 - Track create/update/delete actions for:
 - Leave balances and adjustments.
 - Leave requests and approvals.
 - Policy assignments and changes.
 - **Performance**
 - Efficient indexes on tenant, employee, and date fields.
 - Pagination on list endpoints.
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9. Future Extensions (Optional)

- Attendance integration (check-in/out).
- Payroll integration for automated LOP deductions.
- Performance review and goal tracking linked to tasks.
- Notifications (email/Slack/Teams) for approvals and stand-ups.