

HRMS practice project — feature spec (expanded)

1) employee management

goal: single source of truth for employee data, with clean permissions.

features

- **employee profile (core)**
 - personal: employee id, name, email, phone, dob, address, emergency contact.
 - employment: department, role/title, manager, location, employment type (full-time/contract/intern), doj, probation end, status (Onboarding, Active, Exited, Archived).
 - visibility: employees see their own; managers see only direct team; HR sees all.
- **documents**
 - upload/view: id proof, certificates, resume (historic), contract (uploaded by HR), policy acks (optional).
 - simple versioning (latest file wins is ok for practice) + filename, type, uploaded_by, uploaded_at.
- **bank & payroll linkage**
 - bank details fields + a boolean: `bank_details_complete`.
 - salary reference fields (read-only for employees): base pay, allowances, deductions (managed by HR).
- **access control (RBAC)**
 - employee: view own profile; edit personal fields; upload docs.
 - manager: view team members' non-sensitive fields.
 - HR: cannot edit employee personal details; **can** edit salary fields and upload/replace contract.
 - audit every update (who, what, when).
- **status & lifecycle**
 - states: Onboarding → Active → Exited → Archived.
 - constraints:
 - payroll only for **Active**.
 - login disabled for **Exited/Archived**.
- **quality of life**
 - search/filter by name, department, status.
 - import/export CSV (optional).
 - minimal validations (email format, phone length, salary non-negative).

mvp checklist

- create/read/update employee (respecting RBAC rules above).
- upload/download docs.
- bank completeness flag.
- status transitions recorded to audit.

2) payroll

goal: simple periodic calculations + payment tracking, tightly validated.

features

- **payroll calendar / scheduler**
 - monthly run date (e.g., 30th) or manual "Run now (for month X)".
 - a service checks "due today" and starts a run.
- **eligibility & validations**
 - include only employees with status **Active** and `bank_details_complete = true`.
 - skip and flag missing info (bank/personal blockers).
- **calculation**
 - per employee: `net = base + allowances - deductions`.
 - store per-cycle breakdown (gross, net, components) for history.
- **payment status per employee per cycle**
 - states: Not Due → Due → Paid | Failed (with reason).
 - reasons examples: "Missing bank details", "On leave without pay (manual)".
- **payslip**

- generate simple HTML/PDF with period, components, net, and company header.
- employee can view/download their own payslips.
- **adjustments (nice-to-have)**
 - one-time bonus/deduction entries added before run.
- **reports (nice-to-have)**
 - per-cycle summary: total employees processed, total payout, failures (counts & reasons).
- **audit events**
 - run_started, run_completed, employee_payment_calculated, payment_marked_paid, payment_failed(reason).

mvp checklist

- create payroll run (auto/manual).
- compute amounts and set statuses.
- skip invalid employees with clear failure reasons.
- generate/download payslip.
- write audit logs.

3) onboarding & offboarding

goal: minimal, reliable entry/exit flows with clear status changes.

onboarding (selected candidate → employee)

- **steps**
 1. create employee record (status = Onboarding).
 2. document collection (employee uploads; HR verifies).
 3. contract upload (by HR).
 4. mark employee **Active**.
- **effects**
 - enables payroll eligibility checks.
 - role on the user account becomes **Employee** (from Candidate).
- **audit**
 - onboarding_started, document_uploaded, contract_uploaded, onboarding_completed.

offboarding (employee exit)

- **steps**
 1. set status **Exited** (disable login).
 2. (optional) checklist fields: asset returned (yes/no), exit note.
 3. archive: status **Archived** for long-term record.
- **constraints**
 - no payroll for Exited/Archived.
 - records remain readable to HR.
- **audit**
 - offboarding_started, access_revoked, archived.

mvp checklist

- onboarding: docs + contract + status Active.
- offboarding: status Exited → Archived; login blocked.
- audit entries for key actions.

4) recruitment pipeline

goal: track jobs and candidates through a simple pipeline; handoff to onboarding when selected.

job postings

- fields: title, department, openings (target count), status = Ongoing | Fulfilled.
- auto-update to **Fulfilled** when selections reach openings.

candidates

- candidate account with basic profile: name, email, address, qualification, resume.
- apply to job → candidate record tied to job.

pipeline & rounds

- **pipeline states:** Applied → Shortlisted → Round 1 → Round 2 ... → Selected | Rejected.
- HR defines **rounds per job** (labels only; no need for complex scheduling).
- after each round, HR sets result: Cleared / Not Cleared and advances state.

outcomes

- **Selected:** trigger onboarding → create employee (status Onboarding) and update user role Candidate → Employee.
- **Rejected:** move to archived candidate pool (read-only).

views & rules

- candidate portal: see applied jobs + current status (applied/in round N/rejected/selected).
- HR cannot alter candidate personal data; only pipeline status and notes.

audit

- job_created/updated/fulfilled, candidate_applied, status_changed(round/result), candidate_selected, candidate_rejected.

mvp checklist

- create/close job with openings tracking.
- candidate apply and move through rounds.
- selected → onboarding; rejected → archived.
- audit trail.

5) compliance & audit service

goal: central, simple, append-only logging + basic reports for recruitment and payroll (employee audit optional later).

responsibilities

- expose a small API/gateway: `/audit/recruitment`, `/audit/payroll`.
- other services **push events**; audit service stores them.
- **reporting:** filter by service, date range, action, actor id.

event shape (simple)

- `timestamp`, `service` (recruitment|payroll), `action`, `actor_id` (user id), `resource_type` (job, candidate, employee, payroll_run), `resource_id`, `metadata` (json), `correlation_id` (same id across one payroll run, optional).

behavior

- write-only (no edits), queryable for reports.
- retries if write fails (simple retry is fine for practice).
- retention: keep everything (practice).

mvp checklist

- accept events from recruitment & payroll.
- list/download events with filters.
- no PII in metadata beyond ids and labels.

6) interfaces & access control (single login, role-based ui)

roles: HR, Employee, Candidate.

auth & role routing

- one `/login` for everyone.
- after auth, route to dashboard based on `role`.
- transition: Candidate → Employee happens on selection + onboarding; next login shows employee dashboard.

permissions (summary)

- HR
 - employee mgmt: view all; **edit only** salary & contract docs (not personal fields).
 - payroll: run cycles, view statuses, mark paid/failed, see reports.
 - recruitment: create jobs, define rounds, move candidates, close jobs.
 - onboarding/offboarding: execute flows.
- Employee
 - view own profile + payslips.
 - update personal info + upload personal docs.
- Candidate
 - create account, apply to jobs, upload resume.
 - track application status; no editing of HR fields.

ui surfaces (keep simple)

- HR dashboard: quick stats + links (Employees, Payroll, Recruitment, Reports/Audit).
- Employee dashboard: profile, documents, bank details status, payslips.
- Candidate dashboard: profile, resume, applied jobs + statuses.

guardrails

- server-side RBAC checks on every action.
- file upload size/type checks (pdf/jpg/png).
- basic session timeout; optional 2FA later.

optional niceties (build if time permits)

- notifications (email/log): payroll processed; candidate moved to next round; onboarding completed.
- simple charts: hires per month, payroll totals per run.
- reuse archived candidates: quick “consider for another job” action.

out of scope (for now)

- advanced tax rules, benefits, attendance/time tracking, performance reviews, complex multi-tenant features, deep compliance frameworks.

done definitions (per module)

- **employee management**: RBAC enforced; docs upload; bank flag; status lifecycle; audit events written.
- **payroll**: calendar/scheduler; net calculation; per-employee status; payslip; audit.
- **on/offboarding**: minimal checklists; status flips; access revoke; audit.
- **recruitment**: jobs + openings; candidate pipeline with rounds; select→onboarding; reject→archive; audit.
- **audit service**: accepts events from recruitment & payroll; filterable listing; basic export.

have this conversation into a pdf