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DATABASE DEVELOPMENT WITH PL/SQL

PL/SQL _ Capstone_Project by MUTON Patience

INTERNSHIP AND JOB PLACEMENT SYSTEM

Problem Definition

Many universities struggle with managing internships and job placements due to inefficient manual processes. Companies find it hard to identify suitable candidates and students miss opportunities due to lack of structured system.

PROJECT OBJECTIVE & CONTEXT

- Students create profiles, upload resumes, list skills/courses/availability, and take short skill checks.
- Employers post internships/jobs, filter candidates, and manage interview pipelines.
- An intelligent matching engine suggests best-fit candidates and opportunities.
- Placement coordinators (e.g., university career offices) manage employer relationships, track outcomes, and run analytics.

TARGET USERS

Students: find relevant internships/jobs, track applications, get interview invites, receive placement offers.

Employers: publish roles, screen applicants, schedule interviews, track hires.

Career offices / Admins: manage employer access, verify credentials, measure placement KPIs.

University career services department

INNOVATION / IMPROVEMENT

This project highlights several innovative concepts that can enhance an internship and job-placement system. One key innovation is the development of a unified **student information**

platform that brings together academic records, skills, and internship preferences to support accurate decision-making. An **automated candidate evaluation system** can further improve efficiency by continuously assessing each student's eligibility based on updated performance data. A smart **matching engine** can use these inputs to connect students with suitable employers more effectively. The design also suggests a **dynamic preference module**, allowing students to modify their interests and instantly receive updated internship or job recommendations. In addition, an **employer analytics dashboard** can offer insights into hiring trends and workforce needs. A built-in **profile assessment tool** can help students identify strengths and improvement areas before applying. The interconnected structure shown in the image also inspires a **recommendation system** that learns from previous placements to enhance future matching accuracy. A **data-validation feature** can ensure all student information is complete and reliable. Finally, the PL/SQL database element supports a **high-performance backend** capable of handling complex logic and large datasets, making the entire placement system more robust and efficient.

DATABASE SCHEMA

Table Name	Description	Key Fields
USERS	Stores student, employer, and admin account details	user_id (PK), user_type, name, email, password_hash, status, created_at
PROFILES	Extended details for users (students or employers)	profile_id (PK), user_id (FK), bio, phone, location, linkedin_url, avatar_path
COMPANIES	Stores company/employer organization information	company_id (PK), user_id (FK), name, industry, website, description, headquarters
JOB_POSTINGS	Internship/job opportunities posted by companies	job_id (PK), company_id (FK), title, job_type, location, salary_range, description, posted_at, closing_date, status
JOB_SKILLS	Contains all skills required for jobs	skill_id (PK), name, category
JOB_SKILL_MAP	Maps required skills to job postings (many-to-many)	map_id (PK), job_id (FK), skill_id (FK), level_required
RESUMES	Stores uploaded CVs/resumes of students	resume_id (PK), user_id (FK), file_path, uploaded_at, is_primary, summary
APPLICATIONS	Students' applications to job postings	application_id (PK), job_id (FK), user_id (FK), resume_id (FK), applied_at, status, score

Table Name	Description	Key Fields
INTERVIEWS	Scheduled interviews for each application	interview_id (PK), application_id (FK), interviewer_user_id (FK), scheduled_at, location_or_link, status, notes
ASSESSMENTS	Tests/assignments required for a job	assessment_id (PK), job_id (FK), title, instructions, due_days, max_score
APPLICATION_ASSESSMENTS	Student submissions for assessments	submission_id (PK), assessment_id (FK), application_id (FK), submitted_at, score, file_path, remarks
PLACEMENTS	Records successful internship/job placements	placement_id (PK), application_id (FK), start_date, end_date, salary_or_stipend, placed_by_user_id (FK), confirmed_at
NOTIFICATIONS	Stores system notifications for users	notification_id (PK), user_id (FK), type, title, body, is_read, created_at
USER_SKILLS	Skills that students possess (many-to-many)	id (PK), user_id (FK), skill_id (FK), level, added_at
ACTIVITY_LOGS	Tracks system actions for auditing	log_id (PK), entity_type, entity_id, action, old_value, new_value, performed_by, performed_at

