Job Portal Management System Database Design

1. Introduction

The Job Portal Management System is a database system that helps connect job seekers and employers by allowing an efficient flow of information. This system allows users to post vacancies, search for jobs, and apply for jobs through a user-friendly system.

2. Business Problem Addressed

Job Matching Efficiency: Implement a powerful relational database schema for job descriptions, skills, qualifications, and candidate profiles.

Data Redundancy and Inconsistency: Databases should be normalized to avoid redundancy and data should be stored in properly structured tables so that each piece of information is stored only once.

Application Tracking and Analysis: Detail for each application status (e.g., submitted, in review, interview scheduled, rejected, etc.).

3. Entities Description

USER ACCOUNT
Attribute: **AccountId**, Password
Relationships: Receives notification, created by

USER
Attribute: **UserId**, FirstName, LastName, ContactNumber, Email
Relationship: provides feedback, creates user account

FEEDBACK
Attribute: **FeedbackID**, Description, Rating, PostedDate

Relationship: provided by User

NOTIFICATION
Attribute: <u>**NotificationID**</u>, Timestamp, Content, IsRead
Relationship: received by user account

EMPLOYERS
Attribute: <u>**EmployeeID**</u>
Relationship: conducts interview, is part of, publishes job postings

JOB SEEKER
Attribute: <u>**JobseekerID**</u>
Relationship: fills applications, has resumes, has interviews, has skills, has application history

JOB POSTING
Attribute: <u>**JobID**</u>, Description, JobType, Location, Salary, Status, PostedDate
Relationship: demand skills, receives application, requires resume, is published by employers

APPLICATION
Attribute: <u>**ApplicationID**</u>, ApplicationType, Status
Relationship: is filled by job seeker, has interview, is received by job posting

APPLICATION HISTORY
Attribute: <u>**ApplicationID**</u>, Status, Date
Relationship: can be accessed by a Job Seeker

INTERVIEW
Attribute: <u>**InterviewID**</u>, InterviewDate, Mode
Relationship: is attended by Job seeker, is conducted by an employer, has Application

SKILLS
Attribute: <u>**SkillID,**</u> SkillNames
Relationship: is demanded by Job posting, is equipped by a job seeker

RESUME
Attribute: **ResumeID**, DateUploaded, FilePath
Relationship: is required by Job postings, is linked with a job seeker

COMPANY
Attribute: **CompanyID,** CompanyName, Address, Email, PhoneNumber, Website
Relationship: has employers

4. Entity Relationships

4.1 User Account
- **Notification -** One-To-Many (An user account can get multiple notifications)
- **User -** One-To-One (A user has one account)

4.2 User
- **User Account -** One-To-One (A user has one account)
- **Feedback -** One-To-Many (A user can give multiple feedbacks)

4.3 Job Seeker
- **Application History -** One-To-Many (A job seeker can have many previous applications)
- **Application -** One-To-Many (A job seeker can submit multiple applications)
- **Resume -** One-To-Many (A job seeker has multiple resumes)
- **Interview -** Many-To-Many (A job seeker gives multiple interview)
- **Skills -** One-To-Many (A job seeker may have multiple skills)

4.4 Employer
- **Job Posting -** One-To-Many (An employer can publish many job postings)
- **Company -** Many-To-One (Many employers works in a company)
- **Interview -** One-To-Many (One employers schedules multiple interviews)

4.5 Notification -
- **User Account -** Many-To-One (Multiple notifications can be associated with a user account)

4.6 Feedback -
- **User -** Many-To-One (Multiple feedbacks can be provided by a user)

4.7 Application
- **Job Seeker -** Many-To-One (Many applications can be filled by a job seeker)
- **Job Posting -** Many-To-One (Many applications can be received for a job posting)

4.8 Application History
- Job Seeker- One-To-Many (Multiple application history can be accessed by a job seeker)

4.9 Job Posting
- **Application** - One-To-Many (A job posting will receive multiple application
- **Resume**- One-To-Many(A job posting will receive multiple resume)
- **Employer**- Many-To-One (Multiple job postings can be published by an employer)
- **Skills**- Many-To-Many (A job posting can require skills)

4.10 Interview
- **Job Seeker** - One-To-Many (A job seeker can have many interviews)
- **Employer-** Many-To-Many(A employer can take multiple interview and an interview is conducted by at least one employer)

4.11 Resume
- **Job Seeker -** One-To-Many (A job seeker may have multiple resume)

4.12 Skills
- **Job seeker**- One-To-Many (A job seeker can have many skills)

● **Job Posting**: Many-To-Many(A Skill can be part of multiple job posting)

5. <u>ER Diagram</u>