Job Portal Database System

Database Specification : Purpose, Business Problems Addressed and Business Rules

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Database Purpose : The purpose of the database is to serve jobseekers to find available job vacancies and employers to identify eligible candidates for the desired position.

Business Problems Addressed :
- Allows jobseekers to search and apply to available jobs from various companies.
- Permits recruiters(on behalf of companies) to post the jobs and other details regarding the role of the posted job.
- Allows jobseekers to provide feedback to a company on how prompt the company is responding to the applications.

Business Rules :

- Each user type may have zero or more user accounts.
- Each user account will have one user login activity which will capture user's last login date and last job applied date.
- Each user may provide reviews to zero or more companies.
- Each user account may have zero or one seeker profiles.
- Each seeker profile will have one or more education qualifications.
- Each seeker profile may have zero or many skills
- Each seeker profile may have zero or more experience
- Each company may have zero or more user reviews.
- Each business stream may have zero or more companies associated with it.
- Each company can post zero or more job postings.
- Each job posting may have zero or many job applications
- Each job posting will have one or more job posting skills.

- Each job posting will have one or more job locations.
- Each job type may have zero or more job postings associated to it

Design Requirements (Credit to Professor Simon Wang) :

- Use Crow's Foot Notation.
- Specify the primary key fields in each table by specifying PK beside the fields.
- Draw a line between the fields of each table to show the relationships between each table. This line should be pointed directly to the fields in each table that are used to form the relationship.
- Specify which table is on one side of the relationship by placing a one next to the field where the line starts.
- Specify which table is on the many side of the relationship by placing a crow's foot symbol next to the field where the line ends.

Design Decisions :

Entity Name	Why Entity Included	How Entity is Related to Other Entities
user_type	We generally have 2 types of users who can use this job portal. This entity is used to store the type of user whether he/she is a Job Seeker or HR Recruiter.	The user_type entity is related to user_account entity which will identify type of user while registering to user_account.
user_account	This entity is used to store the account details of the user. So it contains all the details a user enters while registering into the portal like email address, password and contact details.	The user_account entity is related to user type, user log, company user review, and job seeker profile so that insights may be gained about these factors in relation to user accounts.
user_log	The user_log entity stores the details like last login date and the last job applied date when the user applied to the particular job.	The user_log entity is directly related to user_account through one to one relationship as each user has only one most recent activity
seeker_profile	Each job seeker has a profile associated which recruiters can use to shortlist seekers. Here we capture some additional fields like user's First Name, Last Name, gender, date of birth.	Seeker_profile entity is related to user_account and also to seeker_education and seeker_experience to gain information about seeker's education details and work experience
seeker_education	The job portal database is mainly designed for jobseekers. This entity includes the educational background	Seeker_education entity is dependent on seeker's profile.

	of the seeker like the university he graduated from, specialisation, start date and completion date and the grade he/she obtained.	
seeker_experience	This entity stores the previous work experience a seeker is having and the details about the previous organization he had worked for.	Seeker_experience entity is dependent on seeker's profile.
seeker_skills	This entity maintains the seeker's skills and level at which he is excelled in each skill.	Each job seeker can have multiple skills so the seeker_skills entity is directly related to seeker_profile
skill	This entity stores the details of the skills. Example: C, Java, C#, Machine Learning etc.	Skill is directly related to seeker_skill and job_posting_skill which will capture the type of skills that a seeker can possess and skills required by a job.
job_posting	This entity stores the details of a job posting including the date of job posting which will help seekers to understand if the job posting is new or not.	Job_posting entity is one of the core entities that is directly related to company which can post jobs, job_application to capture applications received for a job posting, job_location, job_type to determine the type of job posting related to the job and job_posting_skill to list the skills required for that job posting
job_application	This entity allows the user to make a note of the date he/she applied	Job_application is an associative entity which is directly related to seeker_profile and job_posting. A seeker can apply to many job_postings and each job_posting can have multiple seekers applying to it.
job_type	The job type entity will have the details of the type of the job posted. Example: Software Development, Data analytics, Data Engineer etc. job roles.	Job_type is directly related to the type of job posted by a company through job_posting entity. There could be multiple job postings associated with each job type.
job_location	The job location entity provides an overview of the street address,city, country and zip code of the job posting.	This entity is related to the location of a particular job_posting
job_posting_skill	We need to store the skills required for a job and hence we can store those details in this entity	This is an associative entity to describe the many to many relation between job_posting and skills.
company	Company_details entity provides information about the company like company name and url which leads to	Company is directly related to the type of business stream and job_posting

	company's website.	
company_business_stream	This entity allows the users to get the stream a company is working on. Example: Bank of America's business stream is banking and Walmart comes under retail, Amazon AWS comes under cloud.	company_business_Stream is directly related to the company entity to describe the type of business a company does.
company_user_review	This entity allows users to provide feedback in the form of comments and rating for the company.	This company_user_review entity is an associative entity which is directly related to user account entity and company entity due to many to many relationship between them.Many users can provide feedback for many companies.