

Database Specification: Purpose, Business Problems Addressed, and Business Rules

Team Members: Oindrila Choudhury, Subhiksha Mukuntharaj, Vaidehi Patil, Roshi Roy

Database Purpose:

The purpose of designing the online job portal is to provide candidates, ability to register to this application and search for jobs, manage their accounts. Each candidate will have an account with their own home page.

Employers get to publish the jobs for their company to candidates, can register to the job portal and get their own account created and can post jobs to portal's database.

Registered employers can add or remove jobs and these jobs can be seen by various candidates and they can contact the concerned person for the job.

This thus gives job seekers a platform for finding a right and a satisfactory job according to their qualification.

This job portal allows job seekers to create their profile and share their details relevant for job posting.

Employer can select the best employees based on their requirements. This platform helps in building connections between employee and employer.

Business Problems Addressed:

- Allows the people using this platform to connect with other individuals based on their interest.
- Allows employee and employers to search for specific jobs and candidates accordingly based on their shared details.
- Create a public-facing platform to allow individuals to browse through jobs with more accuracy and autonomy, as well as make more informed decisions while applying for jobs.
- Recommend some courses based on the user's interest.

Business Rules:

- Each user has an unique User ID
- Each user can have zero or many Connections with people
- Each user can belong to zero or many communities
- Each user can have zero or many posts.
- Each employer will have an unique Employee ID
- Each job post has an unique Job Post ID
- Each job type has an unique Job Type ID
- Each skills set will have an unique Skill Set ID
- Each community/group has an unique Community ID
- Each Course will an unique Course ID
- Each candidate will have zero or many Education Details
- Each candidate will have zero or many Work Experience
- Each candidate will have zero or many Skill Set
- Each job post will have zero or many Skill Set
- Each job post will have zero or many Location
- Each job post will have zero or many Job Post Activities
- Each employer can have zero or more Job Post
- Each industry can have zero or many employers

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 should be pointed directly to the fields in each table that are used to form the relationship
- Specify which table is on the many side of the relationship by placing a crow's feet symbol next to where the line ends.

Design Decisions:

#	Entity Name	Why is entity included?	How is entity related to others?
1	Communities	This entity will store the type of communities the user is involved in. Hence this would include User ID as well as Community ID.	This is related to Community Types entity which stores details about type of communities whereas Communities entity maps User ID with Community ID's
2	Community Types	This entity stores the various types of community.	This entity is connected to Communities entity in order to store corresponding Name of community
3	Connections with people	This entity stores the Connection ID which is symbolic of the user's connections with other people. Hence the primary key of this entity includes both User ID as well as Connection ID	This entity is connected to Login Details and shares a one to many relationship as one user can have many connections.
4	User Activity	This entity contains information on the activity of the user hence contains User ID and Activity ID.	User Activity is connect to Login Details to map it to user. One user can have 0 or many activities.
5	Activities	This entity is to map Activity ID and its description and type.	As this entity only describes user activity it is connected with one and only one relationship with User Activity.

6	User Demographics	This will store all the personal details of the user including his name, age, sex, email id etc.	This entity has a one to one relationship with Login Details of a User as one User will have only one unique User Demographics.
7	Login details	The main purpose of this entity is to hold the individual login details of every user, like the username and password details for signing in. This is mainly to keep a track of what is the id and details of every user who signs in to this job portal management system.	This entity is connected to several other entities like User Demographics, Candidate Profile, Communities, etc. i.e all entities which is related to the user.
8	Job type	This entity stores Job type names for corresponding Job ID's	Job Type share a one to many one relationship as one user can have multiple to one areas of interests which they are looking for.
9	Courses	This entity stores information about courses, their ID, name. Job Type ID is used to map to job area of Interest by User in order to predict the right courses to the user.	This entity shares a many to one with Job Type, as each Job Type will have some preferred courses taken by candidate.
10	Resume Details	Resume Details consists of User ID and Resume format of each User	This entity is connected to Candidate Profile. One user can have either 0 or 1 resume uploaded.
11	Candidate profile	This entity mainly stores the first and last name of the candidate and basically the id of the candidate.	This information is connected to entities which require User ID as it stores information about the user and it will share a one and only one relationship.
12	Area of interest	This entity stores the kind of jobs the user is interested in. Hence it	This is connected to Candidate profile and Job Type as each candidate has an area

		contains the attributes User ID and Job Type ID.	of interest stored as Job Type which he can use to allow the database to recommend Jobs.
13	Job post activity	This contains information on the job post activity of a user hence also contains job ID of the Job post applied.	This is connected to Candidate profile by zero to many relationship as well as Job post to map it to the details of the job by zero to many relationship.
14	Job post	Contains details of the job post published by an employer. It contains details of the job post like post ID, Type ID, Employer ID, Location ID and isActive which indicates if job is currently active.	This entity shares a one and only one relationship with Job Post Skill Set and zero to many relationship with Job Location. It is also connected to employer details by zero to many relationship and Job Type by one to many relationship as each job mandatorily has a type or category.
15	Candidate education details	This entity talks about the education of the candidate applying for the job like his undergraduation, graduation degrees, major, what was his gpa and which university he completed his schooling from.	This entity is connected to Candidate profile as each candidate has its own education details. One candidate can have multiple degrees or 0 degrees hence it is a 0 to many relationship.
16	Candidate skillset	This entity stores the skills details of the candidate and his proficiency level so that it is easier for the employer and the candidate to match as per the requirements.	This entity is connected to candidate profile as each candidate has particular skillsets and these skillsets are connected to their names in the Skillset table.
17	Candidate experience	This entity stores the work experience of the candidate like the company he was working in, years of	This entity is connected to Candidate profile as each candidate has certain work experience and it is 0 to many as a

		experience, salary, start and end date of the job etc.	candidate may or may not have work experience or has many experiences.
18	skillset	This entity handles all possible skills that a candidate can have. This is kind of the master set which will help both the candidate and employer to select skills from as per their requirement	Skillset entity is connected to Candidate skillset and stored the names of the skillset corresponding to their ID number. Hence is one and only relationship.
19	Job Post Skill Set	This is where the employer will specify when he posts the job, what are the required skills for his job, so that candidates who want to apply can see if the skills match, then apply as per the skills he has.	Job Post Skill Set has two primary keys and foreign keys which is Skillset ID and Job Post ID as it is connected to skillset and the job which requires that skillset.
20	Job location	This is the location of the job like the city, state, basically where will the job be based out of.	Job Location is connected through one and only one relationship with Job Post which contained Job Location ID.
21	Industry types	This entity consists of the types of industries where there would an Industry ID and corresponding name.	This entity maps the description of industry ID of the Employer or company and has a one and only relationship with Employer Details.
22	Job post	Job Post entity consists of the jobs posted by employers. This entity consists of details of the job	Job Post is connected to Job Post Activity which required Job Post ID of User, it is also connected to Job Post Skill Set as it maps to the skill sets required by that job. Job Post also consists of a Job location ID hence it is mapped to Job Location entity which stores information on Location. The employer ID in Job Post entity is used to map to an

			Employer who has posted the job with 0 to many job posts.
23	Employer details	This is basically the entity that will handle all the employer details like which employer it is and all kinds of details about the company like the industry it belongs to , the profile of that employer, when was it established, it's website details etc	Employer Details are connected to Job Post by one and only relationship. It is connected to Industry Types by zero to many relationship as it can have zero to many industries.