



This diagram was generated on Lucidchart in ER form.

## Assumptions

The assumptions we made in this diagram are:

- Each Company is an entity because it has multiple attributes and participates in relationships with multiple job postings.
  - Assumption: Each job posting is associated with exactly one company, but one company can have many job postings
- Location is its own entity because it contains attributes and can be shared across multiple postings
  - Each job posting happens at one location, but a location can host multiple job postings
- Job portals are entities that publish job postings
  - Assumption: Each job posting is from one portal and a portal can post many jobs.
- Skill is an entity to allow reuse across multiple job postings
  - Skills are not tied to one job, a job can require many skills and each skill can appear in many jobs
- Job posting is the central entity of the database, contains attributes and connected to many skills via a jobposting\_skills relationship table
  - Each job posting is linked to one company, one location, and optionally one portal

## Cardinalities

- Company -> JobPosting
  - 1 to many
- Location -> JobPosting
  - 1 to many
- JobPortal -> JobPosting
  - 1 to many
- JobPosting -> skill
  - Via JobPosting\_Skills: many to many

## Normalization

- All atomic - 1NF
- Every monkey attribute is fully functionally dependent on the full primary key - 2NF
- No transitive dependencies - 3NF

# Relational Schema

Company(id: INT [PK], name: VARCHAR(1000), size: VARCHAR(100), profile: TEXT, contact\_person: VARCHAR(255), contact\_info: VARCHAR(255))

Location(id: INT [PK], city: VARCHAR(100), country: VARCHAR(100), latitude: FLOAT, longitude: FLOAT)

Skill(id: INT [PK], name: VARCHAR(500))

JobPortal(id: INT [PK], name: VARCHAR(500))

JobPosting(job\_id: BIGINT [PK], title: VARCHAR(1000), role: VARCHAR(255), description: TEXT, responsibilities: TEXT, qualifications: VARCHAR(255), experience: VARCHAR(255), work\_type: VARCHAR(50), salary\_range: VARCHAR(100), posting\_date: DATE, preference: VARCHAR(50), benefits: TEXT, company\_id: INT [FK to Company.id], location\_id: INT [FK to Location.id], job\_portal\_id: INT [FK to JobPortal.id])

JobPosting\_Skills(id: INT [PK], jobposting\_id: INT [FK to JobPosting.job\_id], skill\_id: INT [FK to Skill.id])