

Utility Service Database

- Design a database to keep track of service calls for a utility company:
 - Customers call to report problems
 - Call center manages "tickets", assigning workers to jobs
 - Must match specialty and service location
 - Must balance number of assignments
 - Workers call in and ask where their next jobs are
- In SQL, you can perform the following operations:
 - Count the number of rows in a result set
 - Sort the result set according to a field
 - Find the maximum and minimum value of a field

A Possible Answer: Tables

- **Customer:** cid, contact name, phone number, address, zip
- **Worker:** wid, name, phone number, location code, specialty
- **Ticket:** tid, problem, cid, wid, time assigned, status
- **Area:** zip, location code

One Possible Answer: Queries

- Customer calls: I have a problem!
 - Join customer, area, and worker tables on zip and location code; restrict on cid and specialty → available workers
 - For each worker, count outstanding tickets
 - Insert a record in the ticket table, assigning job to worker to fewest assigned jobs
- Worker calls: Where's my next job? And what's the problem?
 - Join ticket and customer tables on cid; restrict on status = "not yet completed", sort rows by time assigned