Database: a collection of data items

Database Management System (DBMS): system software for creating and managing databases

    ex: Commercial: Oracle, Microsoft SQL Server

        Open source: SQLite

Relations: tables basically

Database query languages include: relational algebra, relational calculus

relation schema: example: City-Info (name, state, population)

Projection (π): choose <u>some</u> of the columns
            ie create a smaller table by choosing some of the attributes

Selection (σ): choose rows satisfying some condition
            basically filtering your results

Renaming (ρ)

Natural Join ($\bowtie$): join tuples that have the same values for attributes that
            both tables have

Entity: similar to an instance of a class in Java

Entity set: similar to a class in Java

Functional Dependencies: – a specific input x must only output a specific y

– $f(x) = y$

Inclusion dependencies: $R[X] \subseteq S[Y]$ R, S are relations and X, Y are sequences of attributes

implies

$$\Sigma \models \emptyset$$

A set Σ of constraints implies a constraint $\emptyset$

DAG: Directed Acyclic Graph