# SQL

## Introduction

Jennifer Widom

- "S.Q.L." or "sequel"
- Supported by all major commercial database systems
- Standardized – many new features over time
- Interactive via GUI or prompt, or embedded in programs
- Declarative, based on relational algebra

Jennifer Widom

**Data Definition Language (DDL)**

Create table . . .

drop table …

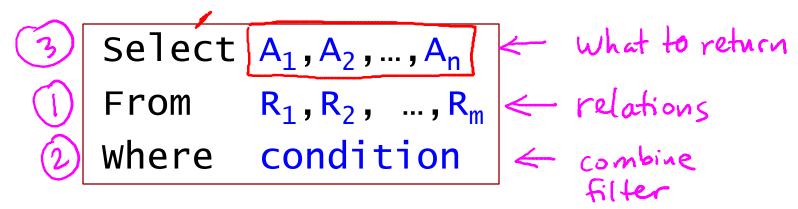**Data Manipulation Language (DML)**

select

insert

delete

update

**Other Commands**

indexes, constraints, views, triggers, transactions, authorization, …

Jennifer Widom

# The Basic SELECT Statement

③ Select $A_1, A_2, \ldots, A_n$ ← What to return

① From $R_1, R_2, \ldots, R_m$ ← relations

② Where condition ← combine filter

$$\Pi_{A_1, \ldots, A_n} \left( \sigma_{condition} (R_1 \times \ldots \times R_m) \right)$$

Jennifer Widom

- "S.Q.L." or "sequel"
- Supported by all major commercial database systems
- Standardized – many new features over time
- Interactive via GUI or prompt, or embedded in programs
- Declarative, based on relational algebra