Elements of SQL

Data Definition Language

• Define Tables (Conceptual Level)
• Define Views (User Level)
• Extensions may define storage
• Define Indexes
• Grant Permissions
• Add Column to table
• Drop tables, views, indexes
Data Definition Language (cont.)

- **SQL-2 Additions**
  - Primary keys
  - Foreign keys
  - Constraints
  - Domains
  - Database Schemas

Data Manipulation Language

- Insert data
- Delete data
- Update data
- Query data
Use of Language

- Casual use on line at terminal
- Embedded in standard programming language
  - Fortran,
  - Cobol,
  - C
- Embedded in specialized database programming language
  - PL/SQL,
  - Transact-SQL

Use of Language, cont.

- Invoked via function calls to programming APIs:
  - ODBC, JDBC
  - PHP functions
  - PERL DBI
- Invoked behind the scenes by applications created by GUI app builders
  - Oracle Developer
  - Visual Basic