SQL

* History
  + ANSI and ISO standard SQL
    - 86
    - 89
    - 92
    - 1999 (Y2K complaint)
    - 2003
    - …
    - 2016
    - Most if not all commercial systems use SQL-92
* SQL Parts
  + DML – (Temp, or rollback segment)
  + Integrity – DDL includes commands for specifying integrity constraints
  + View definition – DDL includes commands for defining views
  + Transaction control – includes commands for specifying the beginning and end of transactions
  + Embedded SQL and dynamic SQL
  + Authorization – includes commands for specifying access rights to relations and views
* Domain (Data) Types of SQL
  + Char(n) – fixed length character string
  + Varchar(n) – variable length character string
  + Int - integer
  + Smallint – small integer
  + Numeric(p,d) – fixed point number
  + Real, double precision – floating point and double-precision floating point numbers
  + Float(n) – floating point number
* Statement
  + Clauses
    - SELECT -List (What to display; list of columns in result)
      * Distinct (remove duplicates)
      * All/\* (includes duplicates)
      * ‘ ’ (attribute literal)
      * As “ “ (rename attribute)
    - FROM -List (List of relations, or where data comes from)
      * JOIN
    - WHERE -Exp (Filter/Join Predicate)
      * Allows logical connectives and comparison operators
      * Can use arithmetic expressions
    - Group By -List
    - Having -Exp
    - ORDER By -List (Sort)
  + Comments
    - -- (line/single comment)
    - /\* \*/ (multi line comment)
  + Example(s)
    - SELECT name, sql
      * FROM sqlite\_master
    - WHERE type=’table’;
    - …
    - SELECT distinct dept\_name (distinct checks and filters out duplicates)
      * FROM instructor;
    - …
    - SELECT \* (filters to see column, which is distinct)
      * FROM instructor;
    - …
    - SELECT ‘Inst’ as “Type”, ID as “Inst\_ID”, name
      * FROM instructor;