

Basic domain types (commonly used subset)

- ▶ String
 - ▶ Char(n) – padded fixed length
 - ▶ Varchar(n) – variable length
- ▶ Number
 - ▶ Integer – 32bit
 - ▶ Decimal(5,2) – 999.99
 - ▶ Real, Double – 32bit, 64bit
- ▶ Datetime
 - ▶ Date – '2002-01-15'
 - ▶ Time – '13:50:00'
 - ▶ Timestamp – '2002-01-15 13:50:00'

Schema definition (table creation)

- ▶ Course(dept, cnum, sec, unit, instructor, title)
- ▶ CREATE TABLE Course (
 dept CHAR(2) NOT NULL,
 cnum INTEGER NOT NULL,
 sec INTEGER NOT NULL,
 unit INTEGER,
 instructor VARCHAR(30),
 title VARCHAR(30),
 PRIMARY KEY(dept, cnum, sec))

Schema definition (table creation)

- ▶ Course(dept, cnum, sec, unit, instructor, title)
Course(dept, cnum, sec, unit, instructor, title)
Course(dept, cnum, sec, unit, instructor, title)
- ▶ CREATE TABLE Course (
 dept CHAR(2) NOT NULL DEFAULT 'CS',
 cnum INTEGER NOT NULL,
 sec INTEGER NOT NULL,
 unit INTEGER,
 instructor VARCHAR(30),
 title VARCHAR(30) DEFAULT,
 PRIMARY KEY(dept, cnum, sec),
 UNIQUE(dept, cnum, instructor),
 UNIQUE(dept, sec, title))

Things to remember

- ▶ Data model
- ▶ Schema
- ▶ Instance
- ▶ Relational model
 - ▶ relation, attribute, tuple, domain
 - ▶ key
 - ▶ null value
 - ▶ set semantics
- ▶ Database construction steps
 1. Domain analysis
 2. Database design: E/R model, database design theory
 3. Table creation: DDL
 4. Load
 5. Query and update: DML