

## Midterm 1 Review for CS385

### Terms and concepts you should know

- Relational database system and its advantages
- Different views of a database system
- Relational schema, relation, instance of relation or table
- ER diagram
- Keys, super keys, candidate keys, primary keys and foreign keys

### Relational algebra

- Basic operators: selection, projection, union, intersection, difference, Cartesian product
- Extended operators: natural join, outer joins, aggregate functions
- Be able to write relational algebra expression for a given problem
- Be able to describe relational expression in simple, and general terms
- Be able to write relational algebra expression given SQL query

### Set comparison operators and quantifiers

- Some, All, Not, Exits
- Be able to define a set using  $\{ \}$ ,  $|$ ,  $\emptyset$ ,  $=$ ,  $\neq$ ,  $\forall$ ,  $\exists$

### SQL queries

- Be able to write queries using Select ... From ... Where
- Renaming: as, Grouping: group by
- Joining and Cartesian product
- Predicates: and, or, between,  $>$ ,  $<$ ,  $=$ , not