Attributes

* Domain – set of allowed values for each attribute
* Normally atomic; indivisible
* Null is a member of every domain

\*Relations are unordered

Database Schema

* The logical structure of the database
* Instance – snapshot of the data in the database at a given instant in time

Keys

* K is a subset R
* K is a superkey of R if values for K are sufficient to identify a unique tuple of each possible relation r(R)
* Superkey K is a candidate key if K is minimal
* Primary key - a DDL constraint added on to a relation
* Foreign key constraint – value in one relation must appear in another
  + Referencing relation
  + Referenced relation
  + EX: FK->Referencing->Referenced (Primary Key)

Relational Algebra

* Procedural language
* Six basic operators

SELECT Operation

* Notation: SELECT WHERE (RELATION)
* Notation:
* Comparisons (=, >, <, etc.)
* AND (^), OR, NOT

PROJECT Operation

* Notation:
* EX: PROJECT name (SELECT dept\_name = “Physics”(Instructor))

CARTESIAN-PRODUCT Operation

* Notation:

JOIN Operation

* Notation:
* Depends how its used, it can be an inner join or outer join

UNION Operator

* Notation: r U s