Database Relations

- Relation schema
  - Defines a relation by a set of attributes (and their domain).
- Relational database schema
  - Set of relation schemas, each with a distinct name.
- General format:
  - Name(Attribute$_1$, Attribute$_2$, …, Attribute$_x$(fk), … , Attribute$_N$)
  - The attribute(s) with underline as key
  - The attribute(s) with (fk) as foreign key(s)

Relational Schema Examples

Stores

StoreID	Street	City	Zip
#1506	1200 W Dillon Rd	Louisville	80027
#1546	1600 29th Street	Boulder	80301
#1524	1271 Sheridan Blvd	Broomfield	80020
#1517	7125 W 88th Ave	Westminster	80021
#1548	16420 Washington Street	Thornton	80023
#1503	10003 Grant Street	Thornton	80229
#1502	5215 Wadsworth Blvd	Arvada	8002

- Stores(StoreID, Street, City, Zip)

Relational Schema Examples

Employees

EmpID	FirstName	LastName	DoB	Position	Departme	StoreID
#20399	John	Ford	1998/2/12	Manager	HR	#1506
#30123	Anne	Brand	2001/3/12	Intern	Marketing	#1546
#12524	David	Biden	2000/2/20	Assistant	Sales	#1524
#14517	William	Potter	2001/9/12	Senior Manager	HR	#1506
#15214	Mary	Alexander	2001/9/12	Assistant	IT	#1524
#11032	Rose	Smith	1999/1/21	Intern	IT	#1503
#02012	Julie	Smith	1977/12/1	Senior Manager	IT	#1503
#78123	Angela	White	1967/4/4	Senior Manager	HR	#1546
#21342	John	Ford	1983/11/11	Manager	IT	#1546

- Employees (EmpID, FirstName, LastName, DoB, Position, Department, StoreID(fk))

Properties of Relations

- Each tuple is distinct; there are no duplicate tuples.
- Order of attributes has no significance.
- Order of tuples has no significance, theoretically.
- Each cell of relation contains exactly one value.
- Each attribute has a distinct name.
- Values of an attribute are all from the same domain.
- Relation name is distinct from all other relation names in a Relational Model.

Practice

- Let's do more practice in Lab1.