

Data Modeling

- Create a representation of tables
- Easily understood
- 3 different Stages:

1) Conceptual Model

- Abstract view
- Abstract relationships

2) Logical Model

- Includes attributes
- PK & FK
- Relationships

3) Physical Model

- Create database
- Assign data types

Entities

- Your tables
 - ↳ Strong Entity - has PK, doesn't rely on other entities
 - ↳ Weak Entity - has FK, does rely on other entities

Attributes

- Describe properties of an entity
- Columns

Candidate Keys

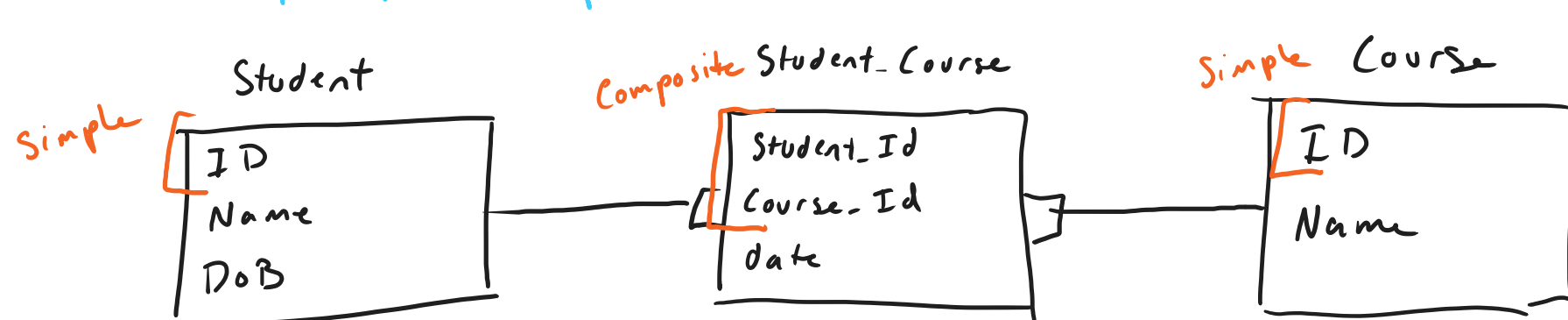
- ↳ Uniquely identify a row in your table
- ↳ Can be 1 or more columns

• Simple Candidate Key

- PK that is made up of a single column
- Ex. EmployeeId

• Composite Candidate Key

- PK made up of multiple columns



• Super Key

- Can either be a composite or simple
- A set of 1 or more columns that uniquely identify a row
- Not necessarily minimal

Surrogate Keys

- PK that uniquely identifies a row
- Auto-incremented key

Primary Key

- A candidate key that uniquely identifies a row
- Only 1 PK per table, but you can have multiple candidate keys

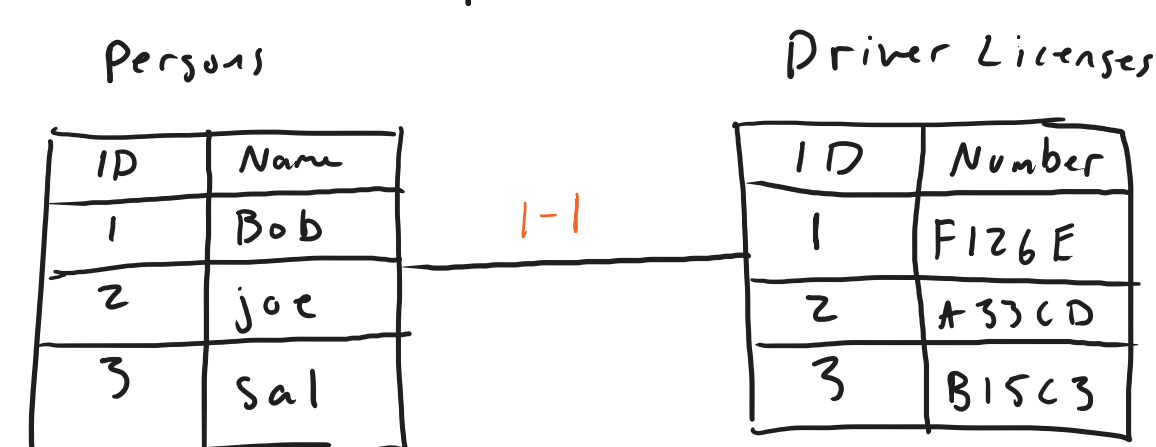
Foreign Key

- A column or group of columns used to link your tables together
- References a PK in another table

Relationships

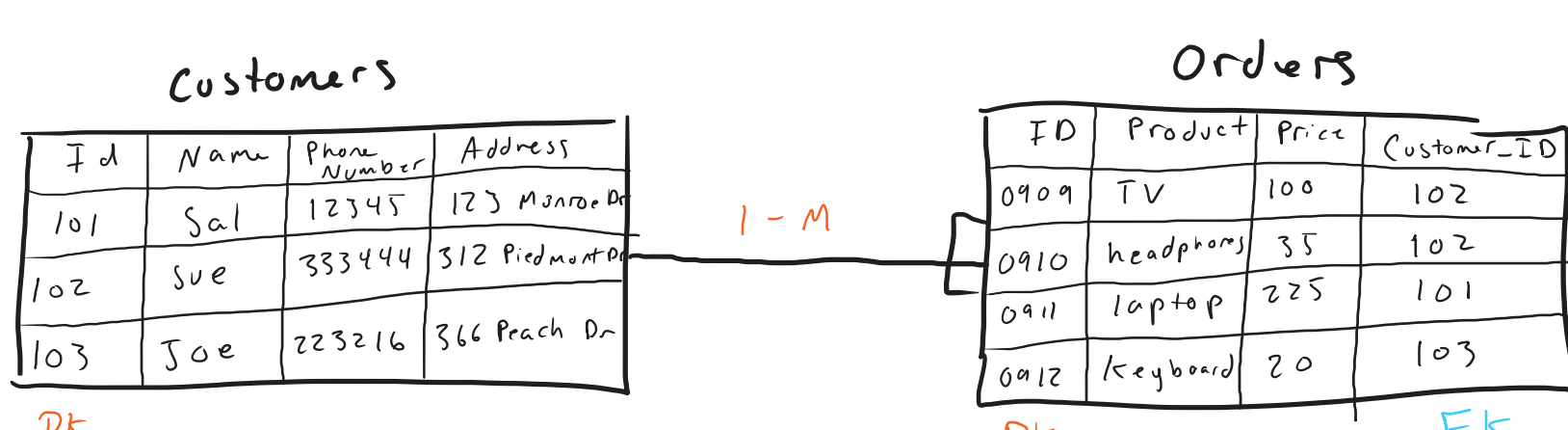
One to One

- A single record in table A is related to a single record in table B.
- Critical relationships



One to Many

- A ^(row) record in table A relates to one or more records in table B



Many to Many

- Exists when table A relates to 1 or more rows in table B + where table B relates to 1 or more rows in table A.

• Junction tables (Linking tables)

- Contains a group of PK columns of 2 tables that you want to relate

• Look up Table

- Typically contains a single column with the unique values

