9/10/18 Notes

<u>Terminology:</u>
- **Database / BigQuery Dataset** - a set of data, what
- **Relation / Entity Type / Table -** a set of columns that define a set of rows
- **Field / Attribute / Column -** a set of values that define rows in a relation
- **Row / Entity / Tuple / Record -** a group of values of attributes that describes one item in a relation
- **Cell / Value -** the contents of a given record for a given column
- **Data Type -** the type of a field (i.e INTEGER, STRING, etc.)
- **Constraint -** a rule a field must abide by (i.e the constraint NOT NULL on a column requires that records cannot contain a NULL field for that column)
- **Key -** a special column in a relation
  - **Primary Key -** a key that defines a particular row
  - **Foreign Key -** a key that connects one row in a relation to another row, either in the same relation or another

<u>Types of Relationships Between Relations:</u>
- **Many to One (m:1)** - A relationship between two relations that state that one or more rows in one relation can be associated with a single row in another relation.
  - *Example: A parent can have many children, but a child can only have one parent.*
- **One to One (1:1)** - A relationship between two relations that state that one row in a relation can only be associated with one row in another relation.
  - *Example: An employee in a company has a single ID, and each ID is tied to only one employee.*
- **Many to Many (m:m) -** A relationship between two relations that state that one or many rows in one relation can be associated with one or many rows in another relation.
  - *Example: A professor may hold lectures in multiple buildings, and a building may have multiple professors lecturing in it.*