

Class of 01/28/2019

Terminology

- dataset - a collection of related data files
 - all files produced by the same source (e.g U.S Census)
 - in BigQuery, a container of tables (essentially a 1-1 relation with the above definition in our case)
- relation/entity type - analogous to "table"
- row/entity/tuple/record - analogous terms referring to an entry in a table
- field/attribute/column - analogous terms referring to properties of records in a table
- cell/value - analogous terms referring to a value of a field for one entity
- data type - the type of a certain field to be (e.g INTEGER, TIMESTAMP)
- constraint - a restraint given to a field that forces it to be certain values (e.g NOT NULL does not allow null values)
 - primary key - a constraint that forces all values in the field to be unique and not null
 - foreign key - a constraint that forces all values to exist as a value of another field in a table
 - serves as "referencing" one table from another, forming a relationship between two tables
 - parent table has primary key, child table references primary key of parent with a foreign key
- schema - the definition of the table (the layout of the table)
- database - a collection of tables that have related information

Relationships

- One to Many (1:m) one entity in a table can be referenced by multiple entities in another table
 - e.g A mother can have multiple children, but a child can only have one mother. Mother is said to have a "one to many" relationship with child.
- One to One (1:1) one entity in a table can be referenced by only one entity in another table
 - e.g A husband can only have one wife, and a wife can only have one husband. Husband and wife are said to have a "one to one" relationship.
 - In this table, a parent table should be chosen by the creator
- Many to Many (m:n) many entities in a table can be referenced by many entities in another table

- e.g A student can have many professors, and a professor can have many students
- junction table - a table representing a many-to-many relationship between two tables (since one field in a table cannot represent many values)
 - in a junction table, one field represents a foreign key to one table, and another field the other table. Both fields are primary keys *and* foreign keys.
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