

# SQL Data Definition Language (DDL)

# CREATE TABLE (1)

```
CREATE TABLE Product (  
    maker char(32),  
    model integer,  
    type varchar(32)  
)
```

- table/relation name
- attribute/column name and type
- Only creates the schema, without data

# CREATE TABLE (2)

- No details about the implementation
  - What data structure?
    - Vector
    - Linked list
    - Hash table
  - What file format?
    - CSV
    - Binary
- High level of abstraction

# SQLite CREATE TABLE (1)

- [https://sqlite.org/lang\\_createtable.html](https://sqlite.org/lang_createtable.html)
- Attribute/column data types
  - <https://sqlite.org/datatype3.html>
  - CHAR vs. VARCHAR
  - DECIMAL(tot\_digits, decimal\_digits)
  - DATE & DATETIME
    - [https://sqlite.org/lang\\_datefunc.html](https://sqlite.org/lang_datefunc.html)

# SQLite CREATE TABLE (2)

- DEFAULT
  - Default value of an attribute
- PRIMARY KEY
  - No duplicates are allowed for an attribute across all the tuples in the table
  - Only one per table
  - NULLs are allowed (because of a bug, not standard)
- UNIQUE
  - No duplicates are allowed for an attribute across all the tuples in the table
- NOT NULL
  - No empty values allowed

# SQLite CREATE TABLE (3)

- ROWID
  - Unique integer associated with every row in a table
  - Not necessarily based on the row order
  - Created automatically by the system
- INTEGER PRIMARY KEY
  - Becomes the equivalent of ROWID

# DROP TABLE

- CREATE TABLE
  - Register an empty table with the database
- DROP TABLE
  - Deletes the table from the database
  - **ALL DATA (TUPLES) are DELETED !!!**
- DROP TABLE **Product**

# ALTER TABLE

- Modify the schema of a table
- ADD COLUMN
  - Adds a new column, without any value for existing tuples
  - ALTER TABLE **Cal\_Cities\_Pop** ADD COLUMN **pop\_2020**
- DROP COLUMN
  - Removes a column, including all data across tuples
  - **NOT SUPPORTED IN SQLITE !!!**
- [https://sqlite.org/lang\\_altertable.html](https://sqlite.org/lang_altertable.html)



# Examples

- California\_Cities
- Computers
- TPCH