

# Analytics Jumpstart

## Working with sqlite

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Nashville Software School

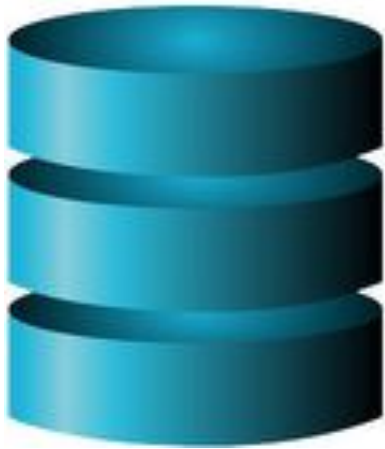


# For today

- **Using a SQLite database in python**
  - **create a connection**
  - **create a cursor**
  - **execute SQL statement**
  - **fetchall()**



**SQLite** is an embedded, file-based relational database management system (RDBMS).



The interactions with the database are done using a **query**, where you select data based on different criteria.

<b>SELECT name</b>	—> Which value you want returned
<b>FROM sqlite_master</b>	—> Where to look for it
<b>WHERE type='table'</b>	—> A criteria to filter the result
<b>ORDER BY name;</b>	—> How you want the result formatted

Many other keywords to help with creating the perfect query:

<https://www.codecademy.com/articles/sql-commands>

*# load the sqlite3 library*

```
import sqlite3 as sql
```

*# load the database*

```
db = "./data/weather.db"
```

*# create a connection, declare a cursor, and execute a select statement*

```
con = sql.connect(db)
```

```
mycursor = con.cursor()
```

```
mycursor.execute("SELECT name FROM sqlite_master WHERE type='table' ORDER BY  
name;")
```

*# retrieve the data stored in the cursor*

```
tables = mycursor.fetchall()
```



# You can write a function like this one to execute a query

```
def get_query(select, db=db):
```

```
    """Executes a query and returns results and column/field names."""
```

```
    with sql.connect(db) as conn:
```

```
        c = conn.cursor()
```

← declare a cursor

```
        c.execute(select)
```

← execute a query

```
        col_names = [str(name[0]).lower() for name in c.description]
```

```
    return c.fetchall(), col_names
```

← return the results of the query  
along with the column names

← grab column names

The results can be used to  
construct a df; `fetchall()` gets  
the `data` and `col_names` gets  
the `columns` for the df



But...pandas makes loading the results of a query to a DataFrame easier

```
df = pd.read_sql_query("SELECT * from my_table;", conn)
```

Loads data to a dataframe

Using the specified query

And the specified connection



# Questions?

