

Create Database Tables

June 2, 2019

0.0.1 Import necessary libraries

```
[1]: import os
import sqlite3 as sq
```

0.0.2 Sqlite3 Shell Command

Create database:

```
sqlite3 MapData.db
```

0.0.3 Define file path

```
[2]: filepath = r'S:\Code\School\WGU_DataAnalyst_NanoDegree\02 - Data Wrangling with_
↳MongoDB'
```

0.0.4 Establish Connection to SQLite DB

```
[3]: connection = sq.connect(os.path.join(filepath, 'MapData.db'))
cursor = connection.cursor()
```

0.0.5 Create Queries to Create Each Table

```
[4]: node_query = '''CREATE TABLE nodes (
    id INTEGER PRIMARY KEY NOT NULL,
    lat REAL,
    lon REAL,
    user TEXT,
    uid INTEGER,
    version INTEGER,
    changeset INTEGER,
    timestamp TEXT
);'''

node_tags_query = '''CREATE TABLE nodes_tags (
    id INTEGER,
    key TEXT,
```

```

        value TEXT,
        type TEXT,
        FOREIGN KEY (id) REFERENCES nodes(id)
    );'''

ways_query = '''CREATE TABLE ways (
    id INTEGER PRIMARY KEY NOT NULL,
    user TEXT,
    uid INTEGER,
    version TEXT,
    changeset INTEGER,
    timestamp TEXT
);'''

ways_tags_query = '''CREATE TABLE ways_tags (
    id INTEGER NOT NULL,
    key TEXT NOT NULL,
    value TEXT NOT NULL,
    type TEXT,
    FOREIGN KEY (id) REFERENCES ways(id)
);'''

ways_nodes_query = '''CREATE TABLE ways_nodes (
    id INTEGER NOT NULL,
    node_id INTEGER NOT NULL,
    FOREIGN KEY (id) REFERENCES ways(id),
    FOREIGN KEY (node_id) REFERENCES nodes(id)
);'''

```

```
[5]: queries = [node_query, node_tags_query, ways_query, ways_tags_query,
    ↪ways_nodes_query]
```

0.0.6 Iterate Through Queries, Creating Individual Tables

```
[6]: for query in queries:
    cursor.execute(query)
```

0.0.7 Verifying Database/Tables Exist

SQLite3 Shell Commands:

```

sqlite3
.open MapData.db
.databases
.tables

```

0.0.8 Import Data from CSVs into Newly Created Tables

SQLite3 Shell Commands:

```
.mode csv
.import nodes.csv nodes
.import nodes_tags.csv nodes_tags
.import ways.csv ways
.import ways_tags.csv ways_tags
.import ways_nodes.csv ways_nodes
```