

```

1 import csv, sqlite3
2
3 if __name__ == '__main__':
4     # open and read from the cleaned csv file
5     infile = open('cleaned_gwas_ancestry.csv', 'r')
6     data_reader = csv.reader(infile, delimiter=',')
7     # we move the reader to the line after the header (column names) since
8     # we are going to create the column names using the sql command below
9     _ = next(data_reader, None)
10
11     # connect to the sqlite database
12     conn = sqlite3.connect('gwas_associations.db')
13     # get the current cursor
14     cursor = conn.cursor()
15
16     # run an sql command to remove an already existing ancestry table
17     cursor.execute("""DROP TABLE IF EXISTS ancestry;""")
18
19     # create an sql command to create the ancestry table
20     create_table_sql_cmd = """
21     CREATE TABLE ancestry (
22         PUBMEDID INTEGER,
23         'FIRST AUTHOR' CHAR,
24         CATEGORY VARCHAR,
25         'COUNTRY OF ORIGIN' VARCHAR
26     );
27
28     """
29     # execute the above sql command to create an ancestry table
30     cursor.execute(create_table_sql_cmd)
31
32     # insert records into the ancestry table
33     insert_records_sql_cmd = """
34     INSERT INTO ancestry(
35         'PUBMEDID',
36         "FIRST AUTHOR",
37         CATEGORY,
38         "COUNTRY OF ORIGIN"
39     )
40     VALUES (?, ?, ?, ?)
41
42     """
43     cursor.executemany(insert_records_sql_cmd, data_reader)
44
45     # query for records as required by exercise 11.2
46     sql_query_cmd = """
47     SELECT *
48     FROM association
49     WHERE PUBMEDID IN
50     (SELECT PUBMEDID FROM ancestry
51     WHERE "COUNTRY OF ORIGIN" LIKE "Mexico%")
52     """
53     cursor.execute(sql_query_cmd)
54
55     # print some information about the results obtained for the previous query
56     col_names = [col[0] for col in cursor.description]
57     print(col_names)
58     records = cursor.fetchall()
59
60     # print the first 10 records (rows)
61     for record in records:
62         print(record)
63
64     print("number of rows: {}".format(len(records)))
65
66     # save all changes made to the database
67     conn.commit()

```

```
68     # close the database and disconnect
69     conn.close()
70
71     # close the csv file
72     infile.close()
```