Assignment_20

1. Set the variable test1 to the string 'This is a test of the emergency text system,' and save test1 to a file named test.txt.

In [1]:

```
test1 = 'This is a test of the emergency text system'
```

In [2]:

```
len(test1)
```

Out[2]:

```
43
```

In [3]:

```
outfile = open('test.txt', 'wt')
```

In [4]:

```
outfile.write(test1)
```

Out[4]:

```
43
```

In [5]:

```
outfile.close()
```

2. Read the contents of the file test.txt into the variable test2. Is there a difference between test 1 and test 2?

In [6]:

```
with open('test.txt', 'rt') as infile:
    test2 = infile.read()
```

In [7]:

```
len(test2)
```

Out[7]:

```
43
```

In [8]:

```
test1 == test2
```

Out[8]:

```
True
```

3. Create a CSV file called books.csv by using these lines:

```
title,author,year The Weirdstone of Brisingamen,Alan Garner,1960 Perdido Street Station,China Miéville,2000 Thud!,Terry Pratchett,2005 The Spellman Files,Lisa Lutz,2007 Small Gods,Terry Pratchett,1992
```

In [9]:

```
text='''title,author,year
The Weirdstone of Brisingamen,Alan Garner,1960
Perdido Street Station,China Miéville,2000
Thud!,Terry Pratchett,2005
The Spellman Files,Lisa Lutz,2007
Small Gods,Terry Pratchett,1992'''
```

In [10]:

```
with open('books.csv', 'wt') as outfile:
   outfile.write(text)
```

4. Use the sqlite3 module to create a SQLite database called books.db, and a table called books with these fields: title (text), author (text), and year (integer).

In [11]:

```
import sqlite3
```

In [12]:

```
db = sqlite3.connect('books.db')
```

In [13]:

```
curs = db.cursor()
```

In [14]:

```
curs.execute('''create table book (title text, author text, year int)''')
```

Out[14]:

```
<sqlite3.Cursor at 0x263b625a260>
```

In [15]:

```
db.commit()
```

5. Read books.csv and insert its data into the book table.

In [16]:

```
import csv
```

In [17]:

```
import sqlite3
```

In [18]:

```
ins_str = 'insert into book values(?, ?, ?)'
```

In [19]:

```
with open('books.csv', 'rt') as infile:
    books = csv.DictReader(infile)
    for book in books:
        curs.execute(ins_str, (book['title'], book['author'], book['year']))
```

In [20]:

```
db.commit()
```

6. Select and print the title column from the book table in alphabetical order.

In [21]:

```
sql = 'select title from book order by title asc'
```

In [22]:

```
for row in db.execute(sql):
    print(row)
('Perdido Street Station',)
('Small Gods',)
('The Spellman Files',)
('The Weirdstone of Brisingamen',)
('Thud!',)
```

In [23]:

```
for row in db.execute(sql):
```

```
    print(row[0])
```
```
Perdido Street Station
Small Gods
The Spellman Files
The Weirdstone of Brisingamen
Thud!
```

7. From the book table, select and print all columns in the order of publication.

In [24]:

```
for row in db.execute('select * from book order by year'):
    print(row)
```
```
('The Weirdstone of Brisingamen', 'Alan Garner', 1960)
('Small Gods', 'Terry Pratchett', 1992)
('Perdido Street Station', 'China Miéville', 2000)
('Thud!', 'Terry Pratchett', 2005)
('The Spellman Files', 'Lisa Lutz', 2007)
```

In [25]:

```
for row in db.execute('select * from book order by year'):
    print(*row, sep=', ')
```
```
The Weirdstone of Brisingamen, Alan Garner, 1960
Small Gods, Terry Pratchett, 1992
Perdido Street Station, China Miéville, 2000
Thud!, Terry Pratchett, 2005
The Spellman Files, Lisa Lutz, 2007
```

8. Use the sqlalchemy module to connect to the sqlite3 database books.db that you just made in exercise 6.

In [26]:

```
import sqlalchemy
```

In [27]:

```
conn = sqlalchemy.create_engine('sqlite:///books.db')
```

In [28]:

```
sql = 'select title from book order by title asc'
```

In [29]:

```
rows = conn.execute(sql)
```

In [30]:

```
for row in rows:
    print(row)
('Perdido Street Station',)
('Small Gods',)
('The Spellman Files',)
('The Weirdstone of Brisingamen',)
('Thud!',)
```

9. Install the Redis server and the Python redis library (pip install redis) on your computer. Create a Redis hash called test with the fields count (1) and name ('Fester Bestertester'). Print all the fields for test.

In [32]:

```
!pip install redis
Collecting redis
  Downloading redis-3.5.3-py2.py3-none-any.whl (72 kB)
Installing collected packages: redis
Successfully installed redis-3.5.3
import redis conn = redis.Redis() conn.delete('test') 1 conn.hmset('test', {'count': 1, 'name': 'Fester Bestertester'}) True conn.hgetall('test') {b'name': b'Fester Bestertester', b'count': b'1'}
```

10. Increment the count field of test and print it.

```
conn.hincrby('test', 'count', 3) 4 conn.hget('test', 'count') b'4'
```