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,'
        print(test1)
        with open('test.txt','w') as file:
            file.write(test1)
            file.close()
```

This is a test of the emergency text system,

```
In [2]: # read the contents of test.txt
        ! type test.txt
```

This is a test of the emergency text system,

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

```
In [3]: with open('test.txt','r') as file:
            test2 = file.read()

        print(test2)
        print(test1 == test2)
```

This is a test of the emergency text system,
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 [4]: data = '''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'''

        with open('books.csv','w') as file:
            file.write(data)
```

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 [5]: import sqlite3
        db = sqlite3.connect('books.db')
        cursor = db.cursor()
        cursor.execute("CREATE TABLE books (title text, author text, year int)")
        db.commit()
        db.close()
```

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

```
In [7]: import sqlite3
        import csv
        conn = sqlite3.connect("books.db")
        cursor = conn.cursor()
        with open("books.csv","r") as file:
            books = csv.DictReader(file)
            for book in books:
                cursor.execute("INSERT INTO books VALUES (?,?,?)",(book['title'],book['author'],book['year']))
        conn.commit()
        conn.close()
```

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

```
In [8]: import sqlite3
        conn = sqlite3.connect('books.db')
        cursor = conn.cursor()
        output = cursor.execute("SELECT title FROM books ORDER BY title ASC")
        for ele in output:
            print(ele[0])
        conn.commit()
        conn.close()
```

```
Perdido Street Station
Small Gods
The Spellman Files
The Weirdstone of Brisingamen
Thud!
```

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

```
In [9]: import sqlite3
        conn = sqlite3.connect('books.db')
        cursor = conn.cursor()
        ouput = cursor.execute("SELECT * FROM books ORDER BY year")
        for record in ouput:
            print(record)
```

```
('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 [10]: import sqlalchemy
         conn = sqlalchemy.create_engine('sqlite:///books.db')
         conn
```

```
Out[10]: Engine(sqlite:///books.db)
```

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 [8]: ! python -m pip install redis
```

```
Requirement already satisfied: redis in c:\users\dell\anaconda3\lib\site-packages (4.5.5)
Requirement already satisfied: async-timeout>=4.0.2 in c:\users\dell\anaconda3\lib\site-packages (from redis) (
4.0.2)
```

```
In [10]: import redis
         r = redis.Redis()

         r.hset("test", "count", 1)
         r.hset("test", "name", "Fester Bestertester")

         fields = r.hgetall("test")
         for field, value in fields.items():
             print(f"{field.decode()}: {value.decode()}")
```

```
count: 1
name: Fester Bestertester
```

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

```
In [12]: r.hincrby('test', 'count', 1)
         r.hget('test', 'count')
```

```
Out[12]: b'2'
```

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