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.

Answer:

```
In [1]:
1 import os
2 test1='This is a test of the emergency text system '
3 t=open("test.txt","w")

In [2]:
1 t.write(test1)

Out[2]: 44
```

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

Answer:

```
In [4]:
1 with open('test.txt','rt') as file:
2     test2 = file.read()

In [5]:
1 len(test2)

Out[5]: 44

In [6]:
1 test1==test2

Out[6]: 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

Answer:

In [7]:
```
import csv
rows =[ ['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',newline='') as file:
    writer = csv.writer(file)
    writer.writerows(rows)
```

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).

Answer:

In [11]:
```
import sqlite3

# define connection and cursor
conn = sqlite3.connect('books.db')
cur = conn.cursor()

cur.execute("""CREATE TABLE books(
            title varchar,
            author varchar,
            year int
            )""")
conn.commit()

```

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

Answer:

In [12]:
```
import pandas as pd
read_books=pd.read_csv('books.csv',encoding='unicode_escape')
read_books.to_sql('books',conn,if_exists='append',index=False)
```

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

Answer:

```
In [14]:
1 cur.execute('select title from books order by title asc')
2 print(cur.fetchall())
```

```
[('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.

Answer:

```
In [16]:
1 cur.execute('select title, author, year from books order by year')
2
3 df=pd.DataFrame(cur.fetchall(), columns=['title','authore','year'])
4 df
```

Out[16]:

	title	authore	year
0	The Weirdstone of Brisingamen	Alan Garner	1960
1	Small Gods	Terry Pratchett	1992
2	Perdido Street Station	China Miéville	2000
3	Thud!	Terry Pratchett	2005
4	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.

Answer:

```
In [9]:
1 import sqlalchemy
2 conn=sqlalchemy.create_engine('sqlite:///books.db')
3 sql='select title from books '
4 rows=conn.execute(sql)
5 for row in rows:
6     print(row)
```

```
('The Weirdstone of Brisingamen',)
('Perdido Street Station',)
('Thud!',)
('The Spellman Files',)
('Small Gods',)
```

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.

Answer:

```
In [8]: 1 !pip install redis
```

```
Requirement already satisfied: redis in c:\users\avina\anaconda3\lib\site-packages (4.1.0)
Requirement already satisfied: packaging>=21.3 in c:\users\avina\anaconda3\lib\site-packages (from redis) (21.3)
Requirement already satisfied: deprecated>=1.2.3 in c:\users\avina\anaconda3\lib\site-packages (from redis) (1.2.13)
Requirement already satisfied: wrapt<2,>=1.10 in c:\users\avina\anaconda3\lib\site-packages (from deprecated>=1.2.3->redis) (1.12.1)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\users\avina\anaconda3\lib\site-packages (from packaging>=21.3->redis) (3.0.4)
```

```
In [2]: 1 import redis
        2 conn=redis.Redis(host='hostname',port=port,password='password')
        3 conn.delete('book')
        4 conn.hmset('book',{'count':1,'name':'Fester Besterteser'})
        5 conn.hgetall('book')
```

---

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

Answer:

```
In [9]: 1 conn.hincrby('test','count',3)
```