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.

test1 = "This is a test of the emergency text system"

file = open("test.txt", "w")

file.write(test1)

file.close()

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

reading = open('test', 'r')

test2 = reading.read()

reading.close()

print(test1 == test2)

>>> 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

import csv

books = [

    {'title': 'The Weirdstone of Brisingamen', 'author': 'Alan Garner', 'year': 1960},

    {'title': 'Perdido Street Station', 'author': 'China Miéville', 'year': 2000},

    {'title': 'Thud!', 'author': 'Terry Pratchett', 'year': 2005},

    {'title': 'The Spellman Files', 'author': 'Lisa Lutz', 'year': 2007},

    {'title': 'Small Gods', 'author': 'Terry Pratchett', 'year': 1992}

]

with open('books.csv', 'w', *newline*='') as file:

    book = csv.DictWriter(file, ['title', 'author', 'year'])

    book.writeheader()

    book.writerows(books)

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).

import sqlite3

conn = sqlite3.connect('books.db')

curs = conn.cursor()

curs.execute('''CREATE TABLE books (title VARCHAR(50), author VARCHAR(50), year INT)''')

**<sqlite3.Cursor object at 0x0000016E3C9C6F10>**

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

with open('books.csv', 'r') as file:

    reading = csv.reader(file)

    next(reading)

    books = [row for row in reading if len(row) > 0]

    for book in books:

        ins = "INSERT INTO books VALUES(?, ?, ?)"

        curs.execute(ins, book)

conn.commit()

conn.close()

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

conn = sqlite3.connect('books.db')

curs = conn.execute('''SELECT title from books

                        ORDER BY title''')

# returns list of tuples

fetched\_titles = curs.fetchall()

# unpack to one list

titles = [title for tpl in fetched\_titles for title in tpl]

print(titles)

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

conn = sqlite3.connect('books.db')

curs = conn.execute('''SELECT \* from books

                        ORDER BY year''')

# returns list of tuples

fetched\_rows = curs.fetchall()

rows = [row for row in fetched\_rows]

for r in rows:

    print(r)

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

import sqlalchemy

engine = sqlalchemy.create\_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.

import redis

redis\_host = 'localhost'

redis\_port = 6379

r = redis.StrictRedis(*host*=redis\_host, *port*=redis\_port, *decode\_responses*=True)

r.hmset("test", *mapping*={"count": 1, "name":  "Fester Bestertester"})

hsh = r.hgetall("test")

print(hsh)

{'count': '1', 'name': 'Fester Bestertester'}

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

r.hincrby("test", "count", *amount*=1)

hsh\_incr = r.hgetall("test")

print(hsh\_incr)

{'count': '1', 'name': 'Fester Bestertester'}

{'count': '2', 'name': 'Fester Bestertester'}