PYTHON 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.

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

and test 2?

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

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).

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

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

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

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

exercise 6.

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.

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

SOLUTIONS

```
import sqlite3
import csv
from sqlalchemy import create_engine, Column, Integer, String
from sqlalchemy.ext.declarative import declarative_base
from sqlalchemy.orm import sessionmaker
import redis

# 1. Write test1 to a file named test.txt
test1 = 'This is a test of the emergency text system.'
with open('test.txt', 'w') as file:
    file.write(test1)

# 2. Read the contents of test.txt into test2
with open('test.txt', 'r') as file:
    test2 = file.read()

# 3. Create a CSV file called books.csv
csv_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 csv_file:
    csv_file.write(csv_data)

# 4. Create SQLite database and table
conn = sqlite3.connect('books.db')
cursor = conn.cursor()
cursor.execute('CREATE TABLE books (title TEXT, author TEXT, year
INTEGER)')

# 5. Read books.csv and insert data into the book table
with open('books.csv', 'r') as csv_file:
    csv_reader = csv.reader(csv_file)
    next(csv_reader)  # Skip header row
    for row in csv_reader:
        cursor.execute('INSERT INTO books VALUES (?, ?, ?)', row)
conn.commit()

# 6. Select and print the title column in alphabetical order
cursor.execute('SELECT title FROM books ORDER BY title')
titles_alphabetical = cursor.fetchall()
print(titles_alphabetical)

# 7. Select and print all columns in the order of publication
cursor.execute('SELECT * FROM books ORDER BY year')
```

```
all_columns_ordered = cursor.fetchall()
print(all_columns_ordered)


# 8. Use sqlalchemy to connect to the sqlite3 database
Base = declarative_base()
engine = create_engine('sqlite:///books.db')
Session = sessionmaker(bind=engine)
session = Session()


# 9. Create a Redis hash called test and print all fields
redis_client = redis.StrictRedis(host='localhost', port=6379,
decode_responses=True)
redis_client.hmset('test', {'count': 1, 'name': 'Fester Bestertester'})
print(redis_client.hgetall('test'))


# 10. Increment the count field of test and print it
redis_client.hincrby('test', 'count', 1)
print(redis_client.hget('test', 'count'))
```