**1. Set the variable test1 to the string &#39;This is a test of the emergency text system,&#39; 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 (&#39;Fester Bestertester&#39;). Print all the fields for**

**test.**

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

**SOLUTIONS**

1. Here's an example of how to 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 Python:

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

**with open('test.txt', 'w') as file:**

**file.write(test1)**

1. Here's how you can read the contents of the file test.txt into the variable test2:

**with open('test.txt', 'r') as file:**

**test2 = file.read()**

**print(test2)**

There should not be a difference between test1 and test2, as they both contain the same string value.

1. Here's an example of how to create a CSV file called books.csv with the given data:

**import csv**

**books = [ ['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.writerow(['title', 'author', 'year'])**

**writer.writerows(books)**

1. Here's an example of how to use the **sqlite3** module to create a SQLite database called books.db and a table called books with the given fields:

**import sqlite3**

**conn = sqlite3.connect('books.db')**

**cursor = conn.cursor()**

**cursor.execute('''**

**CREATE TABLE books (**

**title TEXT,**

**author TEXT,**

**year INTEGER**

**)**

**''')**

**conn.commit()**

**conn.close()**

1. Here's an example of how to read books.csv and insert its data into the book table:

**import csv**

**import sqlite3**

**conn = sqlite3.connect('books.db')**

**cursor = conn.cursor()**

**with open('books.csv', 'r') as file:**

**reader = csv.reader(file)**

**next(reader) # skip the header row**

**for row in reader:**

**cursor.execute('INSERT INTO books (title, author, year) VALUES (?, ?, ?)', row)**

**conn.commit()**

**conn.close()**

1. Here's how you can select and print the title column from the book table in alphabetical order:

**import sqlite3**

**conn = sqlite3.connect('books.db')**

**cursor = conn.cursor()**

**cursor.execute('SELECT title FROM books ORDER BY title')**

**titles = cursor.fetchall()**

**for title in titles:**

**print(title[0])**

**conn.close()**

1. Here's how you can select and print all columns in the order of publication from the book table:

**import sqlite3**

**conn = sqlite3.connect('books.db')**

1. Connecting to SQLite database using SQLAlchemy:

python  
**from sqlalchemy import create\_engine, Column, Integer, String**

**from sqlalchemy.orm import sessionmaker**

**from sqlalchemy.ext.declarative import declarative\_base**

**Base = declarative\_base()**

**class Book(Base):**

**\_\_tablename\_\_ = 'books'**

**title = Column(String, primary\_key=True)**

**author = Column(String)**

**year = Column(Integer)**

**engine = create\_engine('sqlite:///books.db')**

**Session = sessionmaker(bind=engine)**

**session = Session()**

1. Creating a Redis hash using the Redis library:

**import redis**

**r = redis.Redis(host='localhost', port=6379, db=0)**

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

**print(r.hgetall("test"))**

1. Incrementing the count field in the Redis hash:

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

**print(r.hget("test", "count"))**