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.

Ans:- test1 = 'This is a test of the emergency text system,'

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

file.write(test1)

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

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

**file.write(test1)**

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

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

**test2 = file.read()**

**# Check if there is a difference between test1 and test2**

**if test1 == test2:**

**print("There is no difference between test1 and test2.")**

**else:**

**print("There is a difference between test1 and test2.")**

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

**Ans:- import 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']**

**]**

**filename = 'books.csv'**

**with open(filename, 'w', newline='') as file:**

**writer = csv.writer(file)**

**writer.writerows(data)**

**print(f"The file '{filename}' has been created successfully.")**

1. 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).

**Ans:- import sqlite3**

**# Create a connection to the database**

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

**# Create a cursor object to execute SQL commands**

**cursor = conn.cursor()**

**# Execute SQL command to create the 'books' table**

**cursor.execute('''CREATE TABLE books**

**(title TEXT, author TEXT, year INTEGER)''')**

**# Commit the changes to the database**

**conn.commit()**

**# Close the connection to the database**

**conn.close()**

**print("The SQLite database 'books.db' and the 'books' table have been created successfully.")**

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

**Ans:- import pandas as pd**

**import sqlite3**

**# Read the CSV file**

**data = pd.read\_csv('books.csv')**

**# Connect to the database**

**conn = sqlite3.connect('your\_database.db') # Replace 'your\_database.db' with your actual database file**

**# Insert the data into the table**

**data.to\_sql('book', conn, if\_exists='replace', index=False)**

**# Close the database connection**

**conn.close()**

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

**Ans:- SELECT title FROM book ORDER BY title ASC;**

**import sqlite3**

**# Connect to the database**

**conn = sqlite3.connect('your\_database.db') # Replace 'your\_database.db' with your actual database file**

**cursor = conn.cursor()**

**# Execute the SQL query**

**cursor.execute("SELECT title FROM book ORDER BY title ASC")**

**# Fetch all the results**

**results = cursor.fetchall()**

**# Print the title column**

**for row in results:**

**print(row[0])**

**# Close the database connection**

**conn.close()**

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

**Ans:- SELECT \* FROM book ORDER BY year ASC;**

**import sqlite3**

**# Connect to the database**

**conn = sqlite3.connect('your\_database.db') # Replace 'your\_database.db' with your actual database file**

**cursor = conn.cursor()**

**# Execute the SQL query**

**cursor.execute("SELECT \* FROM book ORDER BY year ASC")**

**# Fetch all the results**

**results = cursor.fetchall()**

**# Print all columns**

**for row in results:**

**print(row)**

**# Close the database connection**

**conn.close()**

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

**Ans:- import sqlalchemy**

**# Establish a connection to the database**

**database\_file = 'books.db' # Replace with the actual path to your database file**

**engine = sqlalchemy.create\_engine(f'sqlite:///{database\_file}')**

**# Test the connection by executing a query**

**with engine.connect() as connection:**

**result = connection.execute("SELECT 1")**

**print(result.fetchone()[0]) # Output: 1**

**# Close the connection**

**engine.dispose()**

1. 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.

**Ans:- import redis**

**# Connect to the Redis server**

**r = redis.Redis()**

**# Create the Redis hash**

**r.hset('test', 'count', 1)**

**r.hset('test', 'name', 'Fester Bestertester')**

**# Print all the fields for 'test'**

**fields = r.hgetall('test')**

**for field, value in fields.items():**

**print(field.decode(), value.decode())**

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

**Ans:- import redis**

**# Connect to the Redis server**

**r = redis.Redis()**

**# Increment the "count" field of "test" by 1**

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

**# Get the updated value of "count" and print it**

**count = r.hget('test', 'count')**

**print("Updated count:", count.decode())**