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.

Answer:

Sure! Here are the steps to accomplish the tasks you've mentioned:

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`.

```python

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 the file `test.txt` into the variable `test2`. Is there a difference between `test1` and `test2`?

```python

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

test2 = file.read()

# Check if there's a difference

difference = test1 == test2

print(f"Difference between test1 and test2: {difference}")

```

3. Create a CSV file called `books.csv` using the provided lines:

```python

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]

]

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

writer = csv.writer(file)

writer.writerows(data)

```

4. Use the `sqlite3` module to create a SQLite database called `books.db` and a table called `books` with the fields: `title` (text), `author` (text), and `year` (integer).

```python

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()

```

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

```python

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 VALUES (?, ?, ?)', row)

conn.commit()

conn.close()

```

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

```python

import sqlite3

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

cursor = conn.cursor()

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

for row in cursor.fetchall():

print(row[0])

conn.close()

```

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

```python

import sqlite3

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

cursor = conn.cursor()

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

for row in cursor.fetchall():

print(row)

conn.close()

```

8. Use the `sqlalchemy` module to connect to the SQLite database `books.db` created in exercise 4.

```python

from sqlalchemy import create\_engine

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

connection = engine.connect()

```

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`.

```python

import redis

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

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

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

fields = r.hgetall('test')

for key, value in fields.items():

print(f"{key.decode()}: {value.decode()}")

```

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

```python

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

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

print(f"Updated count: {count.decode()}")

```

Make sure to have the required packages installed and set up the necessary dependencies like Redis server before running the code.