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.**

=>

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 test 1 and test 2?**

=>

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

test2 = file.read()

# Comparing test1 and test2

if test1 == test2:

print("test1 and test2 are same.")

else:

print("test1 and test2 are different.")

Output: test1 and test2 are same

**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

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.")

**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')

cursor = conn.cursor()

create\_table\_query = '''

CREATE TABLE IF NOT EXISTS books (

title TEXT,

author TEXT,

year INTEGER

)

'''

cursor.execute(create\_table\_query)

conn.commit()

conn.close()

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

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

=>

import csv

import sqlite3

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

reader = csv.reader(file)

header = next(reader)

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

cursor = conn.cursor()

for row in reader:

title, author, year = row

insert\_query = "INSERT INTO books (title, author, year) VALUES (?, ?, ?)"

cursor.execute(insert\_query, (title, author, int(year)))

conn.commit()

conn.close()

print("Data from books.csv has been inserted into the books table successfully.")

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

=>

import sqlite3

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

cursor = conn.cursor()

select\_query = "SELECT title FROM books ORDER BY title ASC"

cursor.execute(select\_query)

rows = cursor.fetchall()

for row in rows:

print(row[0])

conn.close()

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

=>

import sqlite3

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

cursor = conn.cursor()

select\_query = "SELECT \* FROM books ORDER BY year ASC"

cursor.execute(select\_query)

rows = cursor.fetchall()

for row in rows:

print(row)

conn.close()

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

=>

from sqlalchemy import create\_engine

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

result = engine.execute("SELECT 'Connection successful'").scalar()

print(result)

**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

r = redis.Redis()

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

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

fields = r.hgetall("test")

for field, value in fields.items():

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

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

=>

import redis

r = redis.Redis()

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

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

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