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Full Stack Data Science- iNeuron 2021
Python Basic Assignment: Assignment 20

Question 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.

Answer 1:

```
test1 = 'This is a test of the emergency text system'
len(test1)
```
Output: 43

```
with open('test.txt', 'wt') as outfile:
   outfile.write(test1)
outfile.close()
```

Question 2.

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

Answer 2:

```
with open('test.txt', 'rt') as infile:
   test2 = infile.read()
len(test2)
```
Output: 43

```
test1 == test2
```
Output: True

Question 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
```

Answer 3:

```
text = '''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', 'wt') as outfile:
   outfile.write(text)
```

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Question 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).

Answer 4:

```
import sqlite3
db = sqlite3.connect('books.db')
curs = db.cursor()
curs.execute('''create table book (title text, author text, year int)''')

Output: <sqlite3.Cursor at 0x232a4da8030>
db.commit()
```

Question 5.

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

Answer 5:

```
import csv
import sqlite3
ins_str = 'insert into book values(?, ?, ?)'
with open('books.csv', 'rt') as infile:
   books = csv.DictReader(infile)
   for book in books:
      curs.execute(ins_str, (book['title'], book['author'], book['year']))
db.commit()
```

Question 6.

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

Answer 6:

```
sql = 'select title from book order by title asc'
for row in db.execute(sql):
   print(row)

Output: ('Perdido Street Station',)
('Small Gods',)
('The Spellman Files',)
('The Weirdstone of Brisingamen',)
('Thud!',)

#to print the title value without that tuple stuff (parentheses and comma):
for row in db.execute(sql):
   print(row[0])

Output:
Perdido Street Station
Small Gods
The Spellman Files
The Weirdstone of Brisingamen
Thud!
```

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Question 7.

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

Answer 7:

```
for row in db.execute('select * from book order by year'):
   print(row)
```

Output:
('The Weirdstone of Brisingamen', 'Alan Garner', 1960)
('Small Gods', 'Terry Pratchett', 1992)
('Perdido Street Station', 'China Miéville', 2000)
('Thud!', 'Terry Pratchett', 2005)
('The Spellman Files', 'Lisa Lutz', 2007)

```
#To print all the fields in each row, just separate with a comma and space:
for row in db.execute('select * from book order by year'):
   print(*row, sep=', ')
```

Output: The Weirdstone of Brisingamen, Alan Garner, 1960
Small Gods, Terry Pratchett, 1992
Perdido Street Station, China Miéville, 2000
Thud!, Terry Pratchett, 2005
The Spellman Files, Lisa Lutz, 2007

Question 8.

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

Answer 8:

```
import sqlalchemy
conn = sqlalchemy.create_engine('sqlite:///books.db')
sql = 'select title from book order by title asc'
rows = conn.execute(sql)
for row in rows:
   print(row)
```

Output:
('Perdido Street Station',)
('Small Gods',)
('The Spellman Files',)
('The Weirdstone of Brisingamen',)
('Thud!',)

Question 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.

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Answer 9:

```
import redis
conn = redis.Redis()
conn.delete('test')
```

```
0
```

```
conn.hmset('test', {'count': 1, 'name': 'Fester Bestertester'})
```

```
<ipython-input-11-b2322e814ff4>:1: DeprecationWarning: Redis.hmset() is deprecated. Use Redis.hset() instead.
  conn.hmset('test', {'count': 1, 'name': 'Fester Bestertester'})
```

```
True
```

```
conn.hgetall('test')
```

```
{b'count': b'1', b'name': b'Fester Bestertester'}
```

Question 10.

Increment the count field of test and print it.

Answer 10:

conn.hincrby('test', 'count', 3)
Output:4

conn.hget('test', 'count')
Output: b'4'