Assignment -1

Python Programming

Assignment Date	10 September 2022
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Maximum Marks	2 Marks

Basic Python

Question-1:

1. Split this string

s = "Hi there Sam!"

Solution:

```
# Split a string into a list using split() where each word is a list item
x = s.split()
print(x)
```

Basic Python

1. Split this string

```
[ ] s = "Hi there Sam!"
```

```
[ ] # Split a string into a list using split() where each word is a list item
    x = s.split()
    print(x)

    ['Hi', 'there', 'Sam!']
```

Question-2:

2. Use .format() to print the following string.
Output should be: The diameter of Earth is 12742 kilometers.

planet = "Earth"
diameter = 12742

Solution:

#The format() method formats the specified value(s) and inserts them inside the string's placeholder.

string = "The diameter of {} is {} kilometers.".format(planet, diameter)
print(string)

2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

```
[ ]  planet = "Earth"
     diameter = 12742
```

```
[ ]  #The format() method formats the specified value(s) and insert them inside the string's placeholder.
     string = "The diameter of {} is {} kilometers.".format(planet, diameter)
     print(string)

     The diameter of Earth is 12742 kilometers.
```

Question-3:

3. In this nest dictionary grab the word "hello"

d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

Solution:

# grap the word "hello" in nested dictionary
x = d['k1'][3]['tricky'][3]['target'][3]
print(x)

3. In this nest dictionary grab the word "hello"

```
[ ]  d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

```
[ ]  # grap the word "hello" in nested distionary
     x = d['k1'][3]['tricky'][3]['target'][3]
     print(x)

     hello
```

Numpy

Question-4:

4.1 Create an array of 10 zeros?

Solution:

```
import numpy as np

array=np.zeros(10)
print("An array of 10 zeros")
print(array)
```

4.2 Create an array of 10 fives?

Solution:

```
array=np.ones(10)*5
print("An array of 10 fives")
print(array)
```

Question-5:

5. Create an array of all the even integers from 20 to 35

Solution:

```
array=np.arange(20,35,2)
print("An array of all the even integers from 20 to 35")
print(array)
```

▾ 5. Create an array of all the even integers from 20 to 35

```
[ ]  array=np.arange(20,35,2)
     print("An array of all the even integers from 20 to 35")
     print(array)

     An array of all the even integers from 20 to 35
     [20 22 24 26 28 30 32 34]
```

Question-6:

6. Create a 3x3 matrix with values ranging from 0 to 8

Solution:

```
matrix =  np.arange(0, 9).reshape(3,3)
print("A 3X3 matrix with values ranging from 0 to 8\n")
print(matrix)
```

6. Create a 3x3 matrix with values ranging from 0 to 8

```
[ ]  matrix =  np.arange(0, 9).reshape(3,3)
     print("A 3X3 matrix with values ranging from 0 to 8\n")
     print(matrix)

     A 3X3 matrix with values ranging from 0 to 8

     [[0 1 2]
      [3 4 5]
      [6 7 8]]
```

Question-7:

7. Concatenate a and b

a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

Solution:

```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
cab=np.concatenate((a,b), axis=None)
print("Concatenation of a and b"
print(cab)
```

7. Concatenate a and b

a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
cab=np.concatenate((a,b), axis=None)
print("Concatenation of a and b")
print(cab)

Concatenation of a and b
[1 2 3 4 5 6]
```

Pandas

Question-8:

8. Create a dataframe with 3 rows and 2 columns

Solution:

```
import pandas as pd

data = {'student_name': ['muthamizhan', 'karthik', 'Ravi'],'cgpa_marks': [9.4, 8.9, 8.7]}

df = pd.DataFrame(data)
df=df.to_string(index=False)
print("A dataframe with 3 rows and 2 columns\n")
print (df)
```

8. Create a dataframe with 3 rows and 2 columns

```
[ ] import pandas as pd
```

```
data = {'student_name': ['muthamizhan', 'karthik', 'Ravi'],
        'cgpa_marks': [9.4, 8.9, 8.7]}

df = pd.DataFrame(data)
df=df.to_string(index=False)

print("A dataframe with 3 rows and 2 columns\n")
print (df)
```

```
A dataframe with 3 rows and 2 columns

student_name  cgpa_marks
 muthamizhan         9.4
     karthik         8.9
        Ravi         8.7
```

Question-9:

9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023

Solution:

```
date=pd.date_range(start='1/1/2023', end='2/10/2023').date  #getting dates from range 1st Jan, 2023 to 10th Feb, 2023

date = pd.to_datetime(pd.Series(date))
date = date.dt.strftime('%d-%m-%Y')
print("The series of dates from 1st Jan, 2023 to 10th Feb, 2023 \n\t(01-01-2023 to 10-02-2023)\n")

for s_date in date:
   print(s_date)
```

▾ 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023

```
date=pd.date_range(start='1/1/2023', end='2/10/2023').date #getting dates from range 1st Jan, 2023 to 10th Feb, 2023
date = pd.to_datetime(pd.Series(date))
date = date.dt.strftime('%d-%m-%Y')
print("The series of dates from 1st Jan, 2023 to 10th Feb, 2023 \n\t(01-01-2023 to 10-02-2023)\n")
for s_date in date:
    print(s_date)
```

```
The series of dates from 1st Jan, 2023 to 10th Feb, 2023
        (01-01-2023 to 10-02-2023)

01-01-2023
02-01-2023
03-01-2023
04-01-2023
05-01-2023
06-01-2023
07-01-2023
08-01-2023
09-01-2023
10-01-2023
11-01-2023
12-01-2023
13-01-2023
14-01-2023
15-01-2023
16-01-2023
17-01-2023
18-01-2023
19-01-2023
20-01-2023
21-01-2023
22-01-2023
23-01-2023
24-01-2023
25-01-2023
26-01-2023
27-01-2023
28-01-2023
29-01-2023
30-01-2023
31-01-2023
01-02-2023
02-02-2023
03-02-2023
04-02-2023
05-02-2023
06-02-2023
07-02-2023
08-02-2023
09-02-2023
10-02-2023
```

Question-10:

10. Create 2D list to DataFrame

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

Solution:

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

df = pd.DataFrame(lists, columns =['no', 'name', 'd_no'])
df=df.to_string(index=False)
print("Given 2D list")
print(lists)
print("\n2D list to dataframe")
print(df)
```