Assignment -1

Python Programming

Assignment Date	08 September 2022
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Maximum Marks	

Basic Python

1. Split this string

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

In [ ]:
```
s = "Hi there Sam!"
print(s)
s1= s.split(" ",5)
print(s1)
```

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

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

Output should be:

The diameter of Earth is 12742 kilometers.

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

In [ ]:
```
planet = "Earth"
diameter = 12742
txt = "The diameter of {} is {} kilometers."
print(txt.format(planet,diameter))
```

```
The diameter of Earth is 12742 kilometers.
```

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

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

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

```
hello
```

Numpy

In [ ]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [ ]:
```
import numpy as np

a1 = np.zeros(10)
print("An Array of 10 Zeros:",a1)
```

```
An Array of 10 Zeros [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

In [ ]:
```
import numpy as np
array = np.ones(10)*5
print("An Array of 10 Fives:",array)
```

```
An Array of 10 Fives: [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

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

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

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

In [ ]:
```
import numpy as np
arr = np.arange(0,9).reshape(3,3)
print("A 3x3 matrix with values ranging from 0 to 8:\n",arr)
```

```
A 3x3 matrix with values ranging from 0 to 8:
 [[0 1 2]
 [3 4 5]
 [6 7 8]]
```

7. Concatinate a and b

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

In [ ]:
```
import numpy as np
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
print(a," ",b)
c = np.concatenate((a,b))
print("Concatenated Elements:",c)
```

```
[1 2 3]   [4 5 6]
Concatenated Elements: [1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [ ]:
```
import pandas as pd
n1 = {"A":1,"B":2,"C":3}
n2 = {"A":4,"B":5,"C":6}
n3 = {"A":7,"B":8,"C":9}
dictList = [n1,n2,n3]
Data = pd.DataFrame(dictList)
print(Data)
```

```
   A  B  C
0  1  2  3
1  4  5  6
2  7  8  9
```

In [ ]:

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

In [3]:
```
import pandas as pd
import datetime

start = datetime.datetime.strptime("01-01-2023", "%d-%m-%Y")
end = datetime.datetime.strptime("10-02-2023", "%d-%m-%Y")
date_generated = pd.date_range(start, end)
print(date_generated.strftime("%d-%m-%Y"))
```

```
Index(['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'],
      dtype='object')
```

10. Create 2D list to DataFrame

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

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

In [2]:
```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists, columns =['Roll Number', 'Name', 'Age'])
print(df )
```

```
   Roll Number Name Age
0            1  aaa   22
1            2  bbb   25
2            3  ccc   24
```

In [ ]:
```

```