Assignment -1

Python Programming

Assignment Date	20 September 2022
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Maximum Marks	2 Marks

Basic Python

1. Split this string `s = "Hi there Sam!"`

```
s.split()
```

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

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

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

```
planet = "Earth" diameter
= 12742
```

```
"the diameter of {0} is {1} kilometers".format(planet,diameter)
```

```
'the diameter of Earth is 12742 kilometers'
```

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

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

```
print(d['k1'][3]['tricky'][3]['target'][3]) hello
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
np.zeros((10,),dtype=int)
```

```
Output:
```

```
array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0])
```

```
np.array([5]*10)
```

Output:

```
array([5, 5, 5, 5, 5, 5, 5, 5, 5, 5])
```

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

```
np.array([i for i in range(20,35,2)])
```

Output:

```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

```
np.matrix(np.arange(9).reshape((3,3)))
```

Output:

```
matrix([[0, 1, 2],
[3, 4, 5],        [6,
7, 8]])
```

7. Concatenate a and b

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

```
np.concatenate((np.array([1,2,3]),np.array([4,5,6])))
```

Output: `array([1, 2, 3, 4, 5, 6])`

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
d = {0:[1,2,3],1:[4,5,6]}
pd.DataFrame(data=d)
```

Output:

```
   0  1
0  1  4
1  2  5
2  3  6
```

9. **Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023** `pd.date_range(start="2023-01-01",end="2023-02-10").to_pydatetime().tolist()`

Output:

```
[datetime.datetime(2023, 1, 1, 0, 0),
datetime.datetime(2023, 1, 2, 0, 0),  datetime.datetime(2023,
1, 3, 0, 0),  datetime.datetime(2023, 1, 4, 0, 0),
datetime.datetime(2023, 1, 5, 0, 0),  datetime.datetime(2023,
1, 6, 0, 0),  datetime.datetime(2023, 1, 7, 0, 0),
datetime.datetime(2023, 1, 8, 0, 0),  datetime.datetime(2023,
1, 9, 0, 0),  datetime.datetime(2023, 1, 10, 0, 0),
datetime.datetime(2023, 1, 11, 0, 0),
datetime.datetime(2023, 1, 12, 0, 0),
datetime.datetime(2023, 1, 13, 0, 0),
datetime.datetime(2023, 1, 14, 0, 0),
datetime.datetime(2023, 1, 15, 0, 0),
datetime.datetime(2023, 1, 16, 0, 0),
datetime.datetime(2023, 1, 17, 0, 0),
datetime.datetime(2023, 1, 18, 0, 0),
datetime.datetime(2023, 1, 19, 0, 0),
datetime.datetime(2023, 1, 20, 0, 0),
datetime.datetime(2023, 1, 21, 0, 0),
datetime.datetime(2023, 1, 22, 0, 0),
datetime.datetime(2023, 1, 23, 0, 0),
datetime.datetime(2023, 1, 24, 0, 0),
datetime.datetime(2023, 1, 25, 0, 0),
datetime.datetime(2023, 1, 26, 0, 0),
datetime.datetime(2023, 1, 27, 0, 0),
datetime.datetime(2023, 1, 28, 0, 0),
datetime.datetime(2023, 1, 29, 0, 0),
datetime.datetime(2023, 1, 30, 0, 0),
datetime.datetime(2023, 1, 31, 0, 0),
datetime.datetime(2023, 2, 1, 0, 0),  datetime.datetime(2023,
2, 2, 0, 0),  datetime.datetime(2023, 2, 3, 0, 0),
datetime.datetime(2023, 2, 4, 0, 0),  datetime.datetime(2023,
2, 5, 0, 0),  datetime.datetime(2023, 2, 6, 0, 0),
datetime.datetime(2023, 2, 7, 0, 0),  datetime.datetime(2023,
2, 8, 0, 0),  datetime.datetime(2023, 2, 9, 0, 0),
datetime.datetime(2023, 2, 10, 0, 0)]
```

10. Create 2D list to DataFrame

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

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

pd.DataFrame(data=lists) Output:

```
   0    1   2
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
```