Assignment -1

Python Programming

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Question-1:

Split this string

Solution:

```
s = "Hi there Sam!"
print(s.split())
#                                   #
#                                   #
```

```
In [1]: s = "Hi there Sam!"

In [6]: print(s.split())
        ['Hi', 'there', 'Sam!']
```

Question-2:

Use .format() to print the following string.

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

Solution:

```
planet = "Earth"
diameter = 12742
txt="The diameter of {plt} is {dr} kilometers.".format(plt=planet,dr=diameter)
print(txt)
#                                   #
#                                   #
```

```
In [7]: planet = "Earth"
        diameter = 12742

In [8]: txt="The diameter of {plt} is {dr} kilometers.".format(plt=planet,dr=diameter)
        print(txt)

        The diameter of Earth is 12742 kilometers.
```

Question-3:

In this nest dictionary grab the word "hello"

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

Solution:

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

```
In [36]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

In [38]: d['k1'][3]['tricky'][3]['target'][3]

Out[38]: 'hello'
```

Question-4:

Numpy:

import numpy as np

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

Solution:

4.1 array=np.zeros(10)

print(array)

4.2 array=np.ones(10)*5

print(array)

```
In [10]: array=np.zeros(10)
         print(array)

         [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

In [11]: array=np.ones(10)*5
         print(array)

         [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

Question-5:

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

import numpy as np

Solution:

array=np.arange(20,35,4)

print(array)

```
In [19]: array=np.arange(20,35,4)
         print(array)

         [20 24 28 32]
```

Question-6:

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

import numpy as np

Solution:

array=np.arange(0,9).reshape(3,3)

print(array)

```
In [21]: arr=np.arange(0,9).reshape(3,3)
         print(arr)

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

Question-7:

Concatinate 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])

print(np.concatenate([a,b]))

```
In [22]: a=np.array([1,2,3])
         b=np.array([4,5,6])
         np.concatenate([a,b])

Out[22]: array([1, 2, 3, 4, 5, 6])
```

Question-8:

Create a dataframe with 3 rows and 2 columns

import pandas as pd

Solution:

import pandas as pd

import numpy as np

data=pd.DataFrame(index=np.arange(3), columns=np.arange(2))

print(data)

```
In [25]: import pandas as pd
```

```
In [27]: data=pd.DataFrame(index=np.arange(3), columns=np.arange(2))
         print(data)
```

```
     0    1
0  NaN  NaN
1  NaN  NaN
2  NaN  NaN
```

Question-9:

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

Solution:

data=pd.date_range(start="1/1/2023",end="10/2/2023")
print(data)

```
In [30]: data=pd.date_range(start="1/1/2023",end="10/2/2023")
         print(data)
```

```
DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
               '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
               '2023-01-09', '2023-01-10',
               ...
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

Question-10:

Create 2D list to DataFrame

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

Solution:

data=pd.DataFrame(lists,columns=["s.no","pattern","number"])

print(data)

In [25]:
```
import pandas as pd
```

In [27]:
```
data=pd.DataFrame(index=np.arange(3), columns=np.arange(2))
print(data)
```

```
     0    1
0  NaN  NaN
1  NaN  NaN
2  NaN  NaN
```