

# Assignment -1

Basic Python

Assignment Date	12 September 2022
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Maximum Marks	2 Marks

## 1. Split this string

**s = "Hi there Sam!"**

**Solution:**

`s.split(" ")`

```
In [5]: s.split(" ")
```

```
Out[5]: ['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**

**Solution:**

```
txt = "The diameter of {planet} is {diameter} kilometers."
txt = txt.format(planet = planet, diameter = diameter)
txt
```

```
In [9]: txt = "The diameter of {planet} is {diameter} kilometers."
txt = txt.format(planet = planet, diameter = diameter)
txt
```

```
Out[9]: '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']}]}]}
```

Solution:

```
print(d["k1"][3]["tricky"][3]["target"][3])
```

```
In [2]: print(d["k1"][3]["tricky"][3]["target"][3])  
hello
```

### Import Numpy

Solution:

```
import numpy as np
```

### 4.1 Create an array of 10 zeros?

Solution:

```
array=np.zeros(10)array
```

```
In [15]: array=np.zeros(10)  
array
```

```
Out[15]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

## 4.2 Create an array of 10 fives?

**Solution:**

```
array2 = np.ones(10)*5
```

```
In [16]: array2 = np.ones(10)*5  
array2
```

```
Out[16]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

**Solution:**

```
even_nos = []  
for i in range(20, 36):  
    if(i % 2 == 0):  
        even_nos.append(i)
```

```
array3 = np.array(even_nos)
```

```
In [19]: even_nos = []  
for i in range(20, 36):  
    if(i % 2 == 0):  
        even_nos.append(i)  
  
array3 = np.array(even_nos)  
array3
```

```
Out[19]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

Solution:

```
x = np.arange(0, 9).reshape(3, 3)
```

X

```
In [20]: x = np.arange(0,9).reshape(3,3)
x
```

```
Out[20]: array([[0, 1, 2],
               [3, 4, 5],
               [6, 7, 8]])
```

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

Solution:

```
x = np.arange(0, 9).reshape(3, 3)
```

X

```
In [20]: x = np.arange(0,9).reshape(3,3)
x
```

```
Out[20]: array([[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])**

**Solution:**

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

```
In [27]: a = np.array([1, 2, 3])
         b = np.array([4, 5, 6])

         c = np.concatenate((a, b))
         c
```

```
Out[27]: array([1, 2, 3, 4, 5, 6])
```

# Pandas

## 8. Create a dataframe with 3 rows and 2 columns

**Solution:**

```
import pandas as pd
data = [['Cr7', 7], ['Lm10', 10], ['Ney', 11]]
df = pd.DataFrame(data, columns=['footie', 'no'])
df
```

```
In [26]: data = [['Cr7', 7], ['Lm10', 10], ['Ney', 11]]

         # Create the pandas DataFrame
         df = pd.DataFrame(data, columns=['footie', 'no'])

         # print dataframe.
         df
```

```
Out[26]:
```

	footie	no
0	Cr7	7
1	Lm10	10
2	Ney	11

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

**Solution:**

```
base = datetime.datetime(2023, 1, 1)
date_list = [base + datetime.timedelta(days=x) for x in
range(41)]
series = pd.Series(date_list)
Series
```

```
In [35]: base = datetime.datetime(2023, 1, 1)
date_list = [base + datetime.timedelta(days=x) for x in range(41)]

series = pd.Series(date_list)
series
```

```
Out[35]: 0    2023-01-01
1    2023-01-02
2    2023-01-03
3    2023-01-04
4    2023-01-05
5    2023-01-06
6    2023-01-07
7    2023-01-08
8    2023-01-09
9    2023-01-10
10   2023-01-11
11   2023-01-12
12   2023-01-13
13   2023-01-14
14   2023-01-15
15   2023-01-16
16   2023-01-17
17   2023-01-18
18   2023-01-19
19   2023-01-20
20   2023-01-21
21   2023-01-22
22   2023-01-23
23   2023-01-24
24   2023-01-25
25   2023-01-26
26   2023-01-27
27   2023-01-28
28   2023-01-29
29   2023-01-30
30   2023-01-31
31   2023-02-01
32   2023-02-02
33   2023-02-03
34   2023-02-04
35   2023-02-05
36   2023-02-06
37   2023-02-07
38   2023-02-08
39   2023-02-09
40   2023-02-10
dtype: datetime64[ns]
```

## 10. Create 2D list to DataFrame

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

**Solution:**

```
df1 = pd.DataFrame(lists, columns = ["Col1", "Col2",  
"Col3"])  
df1
```

```
In [29]: df1 = pd.DataFrame(lists, columns = ["Col1", "Col2", "Col3"])  
df1
```

```
Out[29]:
```

	Col1	Col2	Col3
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24