

Assignment -1
BASIC PYTHON

Assignment Date	18 September 2022
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Maximum Marks	2 Marks

Question-1:

Split the given string s="Hi there Sam!"

Solution:

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

```
▶ s="Hi there Sam!"  
  print(s.split())  
  
['Hi', 'there', 'Sam!']
```

Question-2:

Use .format() to print the string

planet="earth"

diameter=12742

Output should be: The diameter of the earth is 12742 kilometers.

Solution:

```
string= "The diameter of {planet} is {diameter} kilometres.".format(planet = "Earth", diameter =  
12742)  
string
```

```
▶ string= "The diameter of {planet} is {diameter} kilometres.".format(planet = "Earth", diameter = 12742)  
  string  
  
'The diameter of Earth is 12742 kilometres.'
```

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:

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

```
d['k1'][3]['tricky'][3]['target'][3]
```

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

Question-4:

4.1 Create an array of 10 zeros?

Solution:

```
import numpy as np
array=np.zeros(10,dtype='int')
print("An array of 10 zeros:",array)
```

4.2 Create an array of 10 fives?

Solution:

```
import numpy as np
array=np.ones(10,dtype='int')*5
print("An array of 10 fives:",array)
```

```
[ ] import numpy as np
    array=np.zeros(10,dtype='int')
    print("An array of 10 zeros:",array)

An array of 10 zeros: [0 0 0 0 0 0 0 0 0 0]

[ ] import numpy as np
    array=np.ones(10,dtype='int')*5
    print("An array of 10 fives:",array)

An array of 10 fives: [5 5 5 5 5 5 5 5 5 5]
```

Question-5:

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

Solution:

```
import numpy as np
arr=np.arange(20,35,2)
print(arr)
```

```
import numpy as np
arr=np.arange(20,35,2)
print(arr)

[20 22 24 26 28 30 32 34]
```

Question-6:

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

Solution:

```
import numpy as np
x=np.arange(0,9). reshape (3,3)
print(x)
```

```
[ ] import numpy as np
x =np.arange(0,9). reshape (3,3)
print(x)

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

Question-7:

Concatenate a and b

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

Solution:

```
import numpy as np
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
arr = np.concatenate((a,b))
print("before concatenation")
print("a \n",a)
print("b \n",b)
print("after concatenation \n",arr)
```

```
[ ] import numpy as np
    a = np.array([1, 2, 3])
    b = np.array([4, 5, 6])
    arr = np.concatenate((a,b))
    print("before concatenation")
    print("a \n",a)
    print("b \n",b)
    print("after concatenation \n",arr)
```

```
before concatenation
a
[1 2 3]
b
[4 5 6]
after concatenation
[1 2 3 4 5 6]
```

Question-8:

Create a data frame with 3 rows and 2 columns

Solution:

```
import pandas as pd
```

```
print("PROTEIN CONTENTS\n")
```

```
data = [['lentils', '9gm'], ['cashew nuts', '18gm'], ['egg whites', '11gm']]
```

```
df = pd.DataFrame(data, columns=['food items', 'protein content'])
```

```
print(df)
```

```
import pandas as pd
print("PROTEIN CONTENTS\n")
data = [['lentils', '9gm'], ['cashew nuts', '18gm'], ['egg whites', '11gm']]
df = pd.DataFrame(data, columns=['food items', 'protein content'])
print(df)
```

PROTEIN CONTENTS

	food items	protein content
0	lentils	9gm
1	cashew nuts	18gm
2	egg whites	11gm

Question-9:

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

Solution:

```
import pandas as pd
```

```
x=pd.date_range('1st Jan, 2023','10th Feb, 2023')
```

```
print("series of dates\n",x)
```

```
[ ] import pandas as pd
x=pd.date_range('1st Jan, 2023','10th Feb, 2023')
print("series of dates\n",x)

series of dates
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', '2023-01-11', '2023-01-12',
               '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
               '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
               '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
               '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
               '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',
               '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
               '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
               '2023-02-10'],
              dtype='datetime64[ns]', freq='D')
```

Question-10:

Create 2D list to DataFrame

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

Solution:

```
import pandas as pd
```

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

```
df = pd.DataFrame(lists, columns=['A', 'B','C'])
```

```
print(df)
```

```
[ ] import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists, columns=['A', 'B','C'])
print(df)

   A  B  C
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
```