

# Assignment 1

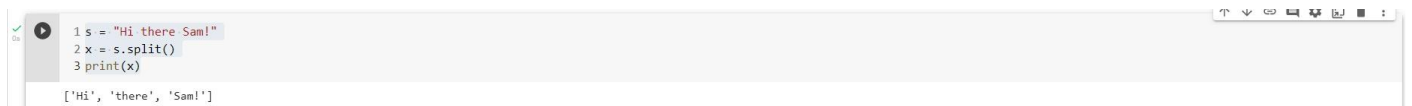
## Python Programming

Assignment Date	09-09-2022
Student Name	Sowmiya K
Register Number	921319104190
Maximum Marks	Each question carries 2 marks

### Question 1

Split this string `s = "Hi there Sam!"` **Solution**

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



```
1 s = "Hi there Sam!"
2 x = s.split()
3 print(x)

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

### Question 2

Use `.format()` to print the following string.  
Output should be: The diameter of Earth is 12742 kilometer.

#### Solution

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



```
1 planet = "Earth"
2 diameter = "12742"
3 print('The Diameter of {} is {} kilometres'.format(planet, diameter))

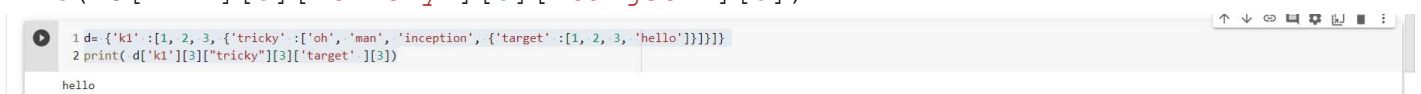
The Diameter of Earth is 12742 kilometres
```

### Question 3

In this nest dictionary grab the word "hello"

#### Solution

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



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

hello
```

### Question 4

Numpy

#### 4.1 Create an array of 10 zeros? **Solution**

```
import numpy as np arr =  
np.zeros(10) print("Array  
of 10 Zeros") print(arr)
```

```
[ ] 1 import numpy as np  
2 arr = np.zeros(10)  
3 print("Array of 10 Zeros")  
4 print(arr)  
  
Array of 10 Zeros  
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

#### 4.2 Create an array of 10 fives? **Solution**

```
import numpy as np arr =  
np.ones(10)*5 print("Array  
of 10 Fives") print(arr)
```

```
1 import numpy as np  
2 arr = np.ones(10)*5  
3 print("Array of 10 Fives")  
4 print(arr)  
  
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 36

#### **Solution**

```
import numpy as np arr=  
np.arange(20,36,2)  
print("Array of all Even Numbers from 20 to 36") print(arr)
```

```
1 import numpy as np  
2 arr= np.arange(20,36,2)  
3 print("Array of all Even Numbers from 20 to 36")  
4 print(arr)  
  
Array of all Even Numbers from 20 to 36  
[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)
```

```
1 import numpy as np
2 x = np.arange(0, 9).reshape(3, 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])
print(a)
b = np.array([4,5,6])
print(b)
print("Concatination of a and b")
print(np.concatenate((a, b)))
```

```
1 import numpy as np
2 a = np.array([1,2,3])
3 print(a)
4 b = np.array([4,5,6])
5 print(b)
6 print("Concatination of a and b")
7 print(np.concatenate((a, b)))

[1 2 3]
[4 5 6]
Concatination of a and b
[1 2 3 4 5 6]
```

## Question 8

Pandas : Create a dataframe with 3 rows and 2 columns

**Solution**

```
import pandas as pd
data = [['tom', 10],
        ['nick', 15],
        ['juli', 14]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
df
```

```
[7] 1 import pandas as pd
2 data = [['tom', 10], ['nick', 15], ['juli', 14]]
3 df = pd.DataFrame(data, columns=['Name', 'Age'])
4 df

   Name  Age
0  tom   10
1  nick   15
2  juli   14
```

## Question 9

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

```
import pandas from datetime import
datetime, timedelta
    startDate = datetime(2023, 1,
1) endDate = datetime(2023, 2,
10)

# Getting List of Days using pandas datesRange =
pandas.date_range(startDate,endDate-timedelta(days=1),freq='d')
print(datesRange);
```

```
1 import pandas
2 from datetime import datetime, timedelta
3
4 startDate = datetime(2023, 1, 1)
5 endDate = datetime(2023, 2, 10)
6
7 # Getting List of Days using pandas
8 datesRange = pandas.date_range(startDate,endDate-timedelta(days=1),freq='d')
9 print(datesRange);
```

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'],  
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    lst = [[1, 'aaa', 22], [2,  
'bbb', 25],[3, 'ccc', 24]]    df = pd.DataFrame(lst)  
print(df )
```

```
1 import pandas as pd
2 lst = [[1, 'aaa', 22], [2, 'bbb', 25],[3, 'ccc', 24]]
3 df = pd.DataFrame(lst)
4 print(df )
```

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

```
1 import pandas as pd
2 lst = [[1, 'aaa', 22], [2, 'bbb', 25],[3, 'ccc', 24]]
3 df = pd.DataFrame(lst)
4 print(df )
```

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

