ASSIGNMENT – 1

```
# Basic Python
## 1. Split this string
s = "Hi there Sam!"
s = "Hi there Sam!"
S = s.split()
print(S);
['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
planet = "Earth"
diameter = 12742
print('The diameter of {} is {} 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']}]}]}
 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?
import numpy as np
array = np.zeros(10)
print("An array of 10 zeros:")
print(array)
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
import numpy as np
array = np.ones(10)*5
print("An array of 10 fives:")
print(array)
An array of 10 fives:
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
import numpy as np
array = np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
Array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

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

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

```
print(x)
[[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])

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
import pandas as pd
array = [[1,2],[3,4],[5,6]]
df = pd.DataFrame(array)
print(df)
   0  1
0  1  2
1  3  4
2  5  6
```

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

```
import pandas as np
rng = pd.date_range(start='1st Jan,2023',end=' 10th Feb,2023',)
for value in rng:
    print(value)
2023-01-01 00:00:00
2023-01-02 00:00:00
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
```

```
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

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]]
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25],[3, 'ccc', 24]]
df = pd.DataFrame(lists,columns=['ONEs','LETTERs','TWOs'])
print(df)
   ONEs LETTERs  TWOs
0     1     aaa    22
1     2     bbb    25
2     3     ccc    24
```