**Assignment -1**

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| Assignment Date | 25 September 2022 |
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| Student Roll Number | 811519104030 |
| Maximum Marks | 2 Marks |

# 1 Basic Python

## 1.1 1. Split this string

[3]:
```
s = "Hi there Sam!"
```

[5]:
```
ls=s.split(" ")
print(ls)
```

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

## 1.2 2. Use .format() to print the following string.

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

[6]:
```
planet = "Earth"
diameter = 12742
```

[8]:
```
print("The diameter of {} is {} kilometers.".format(planet,diameter))
```

```
The diameter of Earth is 12742 kilometers.
```

## 1.3 3. In this nest dictionary grab the word “hello”

[9]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':
  [1,2,3,'hello']}]}]}
```

[12]:
```
print(d['k1'][3]['tricky'][3]['target'][3])
```

```
hello
```

# 2 Numpy

[13]:
```
import numpy as np
```

## 2.1 4.1 Create an array of 10 zeros?

### 2.2 4.2 Create an array of 10 fives?

[16]:
```
arr1=np.full(10,0)
print(arr1)
```

```
[0 0 0 0 0 0 0 0 0 0]
```

[15]:
```
arr1=np.full(10,5)
print(arr1)
```

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

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

[19]:
```
arr3=np.arange(20,35,2)
print(arr3)
```

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

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

[22]:
```
arr4=np.arange(0,9).reshape(3,3)
print(arr4)
```

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

### 2.5 7. Concatinate a and b 2.6 a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

[25]:
```
a=np.array([1,2,3])
b=np.array([4,5,6])
c=np.concatenate((a,b),axis=None)
print(c)
```

```
[ 1 2 3 4 5 6 ]
```

# 3 Pandas

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

```
    1   2
1 NaN NaN
2 NaN NaN
3 NaN NaN
```

[30]:
```
import pandas as pd
```

[32]:
```
df=pd.DataFrame(index=[1,2,3],columns=[1,2])
print(df)
```

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

[34]:
```
d=pd.date_range(start='1-1-2023',end='2-10-2023')
print(d)
```

```
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')
```

### 3.3 10. Create 2D list to DataFrame

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

[35]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

[36]:
```
df1=pd.DataFrame(lists)
print(df1)
```

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