**Assignment-1**

Basic Python

| | |
|---|---|
| Assignment Date | 12-09-2022 |
| Student Name | UTHRA T K |
| Student Roll Number | 311519106104 |
| Maximum Marks | 2 |

## 1. Split this string

```
In [1]: s = "Hi there Sam!"

In [2]: s.split()
Out[2]: ['Hi', 'there', 'Sam!']
```

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

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

```
In [3]: planet = "Earth"
        diameter = 12742

In [4]: aa= "The diameter of {t1} is {t2} kilometers."
        aa.format(t1=planet , t2=diameter)
Out[4]: 'The diameter of Earth is 12742 kilometers.'
```

## 3. In this nest dictionary grab the word "hello"

```
In [5]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

In [6]: d['k1'][3]['tricky'][3]['target'][3]
Out[6]: 'hello'
```

# Numpy

In [7]:
```
import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

In [8]:
```
arr= np.zeros(10)
arr
```

Out[8]:
```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

In [9]:
```
ar= np.ones(10)*5
ar
```

Out[9]:
```
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

In [10]:
```
array= np.arange(20,35,2)
array
```

Out[10]:
```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

In [11]:
```
m= np.arange(0,9)
ma=m.reshape(3,3)
ma
```

Out[11]:
```
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])

In [12]:
```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
arr_concat= np.concatenate((a,b),axis=0)
arr_concat
```

Out[12]:
```
array([1, 2, 3, 4, 5, 6])
```

# Pandas

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

In [13]:
```
import pandas as pd
```

In [14]:
```
pd.DataFrame(np.random.randn(3,2))
```

Out[14]:

| | 0 | 1 |
|---|---|---|
| 0 | -0.595016 | 1.756324 |
| 1 | -0.751619 | 2.168856 |
| 2 | 0.924378 | -0.204244 |

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

In [15]:
```
dates = pd.date_range(start ='1-1-2023',
          end ='02-10-2023',freq ='24H')
for e in dates:
    print(e)
```

```
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]]

In [16]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [17]:
```
s=pd.DataFrame(lists)
s
```

Out[17]:

| | 0 | 1 | 2 |
|---|---|---|---|
| **0** | 1 | aaa | 22 |
| **1** | 2 | bbb | 25 |
| **2** | 3 | ccc | 24 |