**Assignment -1**

Basic Python Questions

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| Assignment Date | 26 September 2022 |
| Student Name | Mr. Dhinagaran . S |
| Student Roll Number | 513419106008 |
| Maximum Marks | 2 Marks |

# Basic Python

## 1. Split this string

In [ ]:

```
s = "Hi there Sam!"
```

In [ ]:

```
s.split(' ')
```

Out[ ]:

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

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

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

In [ ]:

```
planet = "Earth"
diameter = 12742
```

In [ ]:

```
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"

In [ ]:

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

In [ ]:

```
for v in d['k1'][-1].values():
    for i in v[-1].values():
        print(i[-1])
```

```
hello
```

# Numpy

In [ ]:

In [ ]:

```
import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

In [ ]:

```
a = np.zeros(10)
a
```

Out[ ]:

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

In [ ]:

```
b = np.array([5 for i in range(10)])

b
```

Out[ ]:

```
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 [ ]:

```
even_integer = np.arange(20,35,2)
even_integer
```

Out[ ]:

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

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

In [ ]:

```
matrix_3x3 = np.arange(0,9).reshape(3,3)
matrix_3x3
```

Out[ ]:

```
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 [ ]:

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

Out[ ]:

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

# Pandas

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

In [ ]:

```
import pandas as pd
```

In [ ]:

```
data = {
  'Name':['Ramu', 'Raju', 'Siva'],
  'Mark':[60, 48, 90]
}
df = pd.DataFrame(data)
df
```

Out[ ]:

| | Name | Mark |
|---|---|---|
| 0 | Ramu | 60 |
| 1 | Raju | 48 |
| 2 | Siva | 90 |

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

In [ ]:

```
from datetime import date as dt

dates = pd.date_range(dt(2023,1,1),periods=41)
dates
```

Out[ ]:

```
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')
```

## 10. Create 2D list to DataFrame

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

In [ ]:

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

In [ ]:

```
df_2d = pd.DataFrame(lists)
df_2d
```

Out[ ]:

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