

## Assignment 1

Problem Statement:

**Real Time Communication System Powered By AI For Specially Abled**

Student Name	S.Akash
Student Roll Number	814719106007

Assignment 1: Basic Python

# Basic Python

## 1. Split this string

```
In [2]: s = "Hi there Sam!"

In [3]: print(s.split(' '))

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

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

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

```
In [4]: planet = "Earth"
         diameter = 12742

In [5]: 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 [6]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]]]}

In [7]: print(d['k1'][3]['tricky'][3]['target'][3])

hello
```

# Numpy

```
In [8]: import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

```
In [9]: arr = np.zeros(10)
         print(arr)

[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

In [10]: arr = np.ones(10)*5
         print(arr)

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

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

```
In [11]: arr = np.arange(20,35,2)
         print(arr)

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

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

```
In [12]: arr = np.arange(0,9).reshape(3,3)
         print(arr)

[[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 [13]: a = np.array([1,2,3])
         b = np.array([4,5,6])
         print(np.concatenate((a,b)))

[1 2 3 4 5 6]
```

# Pandas

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

```
In [14]: import pandas as pd

In [15]: records = {
            'Name' : ['user1', 'user2', 'user3'],
            'Age'  : [18,19,20]
          }

         df = pd.DataFrame(records)
         df

Out[15]:
```

	Name	Age
0	user1	18
1	user2	19
2	user3	20

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

```
In [17]: dates = pd.date_range(start = '1-1-2023', end = '10-2-2023')
         for date in dates:
             print(date)

2023-01-01 00:00:00
2023-01-02 00:00:00
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2023-01-15 00:00:00
2023-01-16 00:00:00
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2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
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```

## 10. Create 2D list to DataFrame

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

```
In [18]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

In [19]: df = pd.DataFrame(lists, columns = ['S.no', 'Name', 'Points'])
         print(df)

   S.no  Name  Points
0     1   aaa     22
1     2   bbb     25
2     3   ccc     24

In [ ]:
```