

# Assignment 1

## Real-Time Communication System Powered by AI for Specially Abled

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Maximum Marks	2 Marks

## Basics of Python:

1. Split this string
2. Output should be:The diameter of Earth is 12742 kilometers
3. In this nest dictionary grab the word “hello”

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▼ 1. Split this string

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

•

```
a = 'Hi there Sam!'
b = a.split()
print(b)
```

•

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

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

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

```
[ ] planet = "Earth"
diameter = 12742
print('The diameter of{} is {} kilometers.'.format(planet,diameter));
```

```
The diameter ofEarth is 12742 kilometers.
```

```
[ ]
```

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

## 4. Numpy

### 4.1 Create an array of 10 zeros?

### 4.2 Create an array of 10 fives?

```
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```

```
[ ] 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
```

```
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```

#### ▼ Numpy

```
[ ] import numpy as np
```

### ▼ 4.1 Create an array of 10 zeros?

### 4.2 Create an array of 10 fives?

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

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

```
[ ] arr1=np.ones(10)*5
```

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

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

```
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```

```
[ ] arr1=np.ones(10)*5
print(arr1)

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

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

```
even=np.arange(20,35,2)
print("Array of even integers from 25 to 35")
print(even)

Array of even integers from 25 to 35
[20 22 24 26 28 30 32 34]
```

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

```
[ ] x=np.arange(0,9).reshape((3,3))
print(x)

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

### ▼ 7. Concatenate a and b

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

## Pandas

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

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### 7. Concatenate a and b

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

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

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

### Pandas

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

```
[ ] import pandas as pd

[ ] df=pd.DataFrame()
    print(df)

Empty DataFrame
Columns: []
Index: []
```

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

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

```
import datetime

#initializing date
test_date=datetime.datetime.strptime("01-01-2023", "%d-%m-%Y")

#initializing K
K=datetime.datetime.strptime("10-2-2023", "%d-%m-%Y")

date_generated=pd.date_range(test_date,K)
print(date_generated.strftime("%d-%m-%Y"))

Index(['01-01-2023', '02-01-2023', '03-01-2023', '04-01-2023', '05-01-2023',
      '06-01-2023', '07-01-2023', '08-01-2023', '09-01-2023', '10-01-2023',
      '11-01-2023', '12-01-2023', '13-01-2023', '14-01-2023', '15-01-2023',
      '16-01-2023', '17-01-2023', '18-01-2023', '19-01-2023', '20-01-2023',
      '21-01-2023', '22-01-2023', '23-01-2023', '24-01-2023', '25-01-2023',
      '26-01-2023', '27-01-2023', '28-01-2023', '29-01-2023', '30-01-2023',
      '31-01-2023', '01-02-2023', '02-02-2023', '03-02-2023', '04-02-2023',
      '05-02-2023', '06-02-2023', '07-02-2023', '08-02-2023', '09-02-2023',
      '10-02-2023'],
      dtype='object')
```

### 10. Create 2D list to DataFrame

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

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```
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```

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```
[ ] lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
r= pd.DataFrame(lists,columns=['s.no','letter','number'])
print(r)
```

	s.no	letter	number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

```
[ ]
```