

DHAANISH AHMED INSTITUTE OF TECHNOLOGY

NAME:	Darwaz Musharraf Ali. K
DEGREE:	Bachelor of Engineering
DEPARTMENT:	Electronics and communication Engineering
ASSIGNMENT:	1
PROJECT NAME:	Emerging Methods for Early Detection of Forest Fires

Basic Python

1. Split this string

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

```
s.split()
```

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

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 of Earth is 12742 kilometers.

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

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

```
d['k1'][3]['tricky'][3]['target'][3]
```

```
'hello'
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

a

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

```
b=np.ones(10)*5
```

b

```
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

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

a

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

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

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

array

```
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])
```

```
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
```

```
d={"names":["swetha","nasreen","anu"],"age":[20,19,20]}
```

```
df=pd.DataFrame(d)
```

```
df
```

```
names age
```

```
0      swetha 20
```

```
1      nasreen19
```

```
2        anu   20
```

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

```
p=pd.date_range(start='1-1-2023',end='10-2-2023')
```

```
for val in p:
```

```
    print(val);
```

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10. Create 2D list to DataFrame

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

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

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

df

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