

# Assignment-1

## PYTHON PROGRAMMING

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### Basic Python

#### 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]: 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 [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]: array=np.zeros(10)  
        print("an array of 10 zeros :")  
        print(array)  
  
an array of 10 zeros :  
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]  
  
In [9]: array=np.ones(10)*5  
        print("an array of 10 fives :")  
        print(array)  
  
an array of 10 fives :  
[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)
print("array of all the even integers from 20 to 35")
print(array)
```

```
array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

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

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

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

```
Out[25]: 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 [15]: list=[['alexa',20],['alice',21],['clara',22]]
df=pd.DataFrame(list,columns=['name','age'])
print(df)
```

```
   name  age
0 alexa   20
1  alice   21
2  clara   22
```

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

In [23]:

```
per1=pd.date_range(start='1-1-2023',end='2-10-2023')
for val in per1:
    print(val)
```

```
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 [20]:

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

In [22]:

```
df=pd.DataFrame(lists,columns=['Sno','name','age'])
print(df)
```

	Sno	name	age
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24