

Assignment -1
Basic Python Programming in ipynb

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|-----------------|-------------------|
| Assignment Date | 13 September 2022 |
| Student Name | Priyadharshini M |
| Team ID | PNT2022TMID09749 |
| Maximum Marks | 2 Marks |

Basic Python

- **Split this string**

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

```
s="Hi there Sam!"  
print(s) x=s.split(''  
'') print(x)
```

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

- **Use .format() to print the following string.**

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

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

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

diameter of Earth is 12742 kilometers.

- **In this nest dictionary grab the word "hello"**

```
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
```

Numpy

```
import numpy as np
```

- **Create an array of 10 zeros?**
- **Create an array of 10 fives?**

```
import numpy as np
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.]

```
import numpy as nparray=np.ones(10)
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.]

- **Create an array of all the even integers from 20 to 35**

```
import numpy as np
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]

- **Create a 3x3 matrix with values ranging from 0 to 8**

```
import numpy as np
x=np.arange(0,9).reshape(3,3)
print(x)
```

| | | |
|----|---|-----|
| [0 | 1 | 2] |
| [3 | 4 | 5] |
| [6 | 7 | 8]] |

- **Concatenate a and b**

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

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

[1 2 3 4 5 6]

Pandas

- **Create a dataframe with 3 rows and 2 columns**

```
import pandas as pd
```

```
data=[[ 'ammu',40],[ 'ravi',53],[ 'sankar',70]]
df=pd.DataFrame(data,columns=[ 'Name', 'Age' ]) df
```

- Name Age
- ammu 40
- ravi 53
- sankar 70

- **Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023**

```
import pandas as pd
from datetime import datetime
pd.date_range(start="2023-01-01",end="2023-02-01").to_pydatetime().tolist(
)
```

| |
|---------------------------------------|
| [datetime.datetime(2023, 1, 1, 0, 0), |
| datetime.datetime(2023, 1, 2, 0, 0), |
| datetime.datetime(2023, 1, 3, 0, 0), |
| datetime.datetime(2023, 1, 4, 0, 0), |
| datetime.datetime(2023, 1, 5, 0, 0), |
| datetime.datetime(2023, 1, 6, 0, 0), |
| datetime.datetime(2023, 1, 7, 0, 0), |
| datetime.datetime(2023, 1, 8, 0, 0), |
| datetime.datetime(2023, 1, 9, 0, 0), |
| datetime.datetime(2023, 1, 10, 0, 0), |
| datetime.datetime(2023, 1, 11, 0, 0), |
| datetime.datetime(2023, 1, 12, 0, 0), |
| datetime.datetime(2023, 1, 13, 0, 0), |
| datetime.datetime(2023, 1, 14, 0, 0), |
| datetime.datetime(2023, 1, 15, 0, 0), |
| datetime.datetime(2023, 1, 16, 0, 0), |
| datetime.datetime(2023, 1, 17, 0, 0), |
| datetime.datetime(2023, 1, 18, 0, 0), |
| datetime.datetime(2023, 1, 19, 0, 0), |
| datetime.datetime(2023, 1, 20, 0, 0), |
| datetime.datetime(2023, 1, 21, 0, 0), |
| datetime.datetime(2023, 1, 22, 0, 0), |
| datetime.datetime(2023, 1, 23, 0, 0), |
| datetime.datetime(2023, 1, 24, 0, 0), |
| datetime.datetime(2023, 1, 25, 0, 0), |
| datetime.datetime(2023, 1, 26, 0, 0), |
| datetime.datetime(2023, 1, 27, 0, 0), |
| datetime.datetime(2023, 1, 28, 0, 0), |
| datetime.datetime(2023, 1, 29, 0, 0), |
| datetime.datetime(2023, 1, 30, 0, 0), |
| datetime.datetime(2023, 1, 31, 0, 0), |
| datetime.datetime(2023, 2, 1, 0, 0)] |

- **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]]
```

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

| | s.no | alphabet | number |
|---|------|----------|--------|
| | 1 | aaa | 22 |
| 1 | 2 | bbb | 25 |
| 2 | 3 | ccc | 24 |