

Basic Python

1. Split this string

In []:

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

In [1]:

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

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

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

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

In []:

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

In [2]:

```
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"

In []:

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

In [3]:

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
a=lst[3][1][2];
print(a)
```

```
['hello']
```

Numpy

In []:

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [4]:

```
import numpy as np
np.zeros(10)
```

Out[4]:

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

In [5]:

```
import numpy as np
np.ones(10) * 5
```

Out[5]:

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

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

In [6]:

```
import numpy as np
np.arange(20,35)
```

Out[6]:

```
array([20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34])
```

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

In [7]:

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

Out[7]:

```
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])

In [8]:

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

Out[8]:

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In []:

```
import pandas as pd
```

In [10]:

```
import pandas as pd
data = [['parkavi', 10], ['asha', 15], ['juli', 14]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
df
```

Out[10]:

	Name	Age
0	parkavi	10
1	asha	15
2	juli	14

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

In [11]:

```
import pandas as pd
perl = pd.date_range(start = '1-1-2023',
                     end = '02-10-2023', freq = '5H')
for val in perl:
    print(val)
```

```
2023-01-01 00:00:00
2023-01-01 05:00:00
2023-01-01 10:00:00
2023-01-01 15:00:00
2023-01-01 20:00:00
2023-01-02 01:00:00
2023-01-02 06:00:00
2023-01-02 11:00:00
2023-01-02 16:00:00
2023-01-02 21:00:00
2023-01-03 02:00:00
2023-01-03 07:00:00
2023-01-03 12:00:00
2023-01-03 17:00:00
2023-01-03 22:00:00
2023-01-04 03:00:00
2023-01-04 08:00:00
2023-01-04 13:00:00
2023-01-04 18:00:00
2023-01-04 23:00:00
2023-01-05 04:00:00
2023-01-05 09:00:00
2023-01-05 14:00:00
2023-01-05 19:00:00
2023-01-06 00:00:00
2023-01-06 05:00:00
2023-01-06 10:00:00
2023-01-06 15:00:00
2023-01-06 20:00:00
2023-01-07 01:00:00
2023-01-07 06:00:00
2023-01-07 11:00:00
2023-01-07 16:00:00
2023-01-07 21:00:00
2023-01-08 02:00:00
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2023-01-11 15:00:00
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2023-01-14 18:00:00
2023-01-14 23:00:00
2023-01-15 04:00:00
2023-01-15 09:00:00
2023-01-15 14:00:00
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2023-01-16 10:00:00
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2023-01-21 00:00:00
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2023-02-10 00:00:00
```

10. Create 2D list to DataFrame

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

```
In [ ]:
```

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

```
In [12]:
```

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df= pd.DataFrame (lists, columns = ['FNames', 'LName', 'Age'])
print(df)
```

	FNames	LName	Age
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24