

Basic Python

1. Split this string

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

```
In [2]: s = "Hi there Sam!"  
x = s.split()  
x
```

```
Out[2]: ['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 [4]:

```
r="The diameter of {planar  
r
```

Out[4]:

```
'The diameter of Earth i  
s 12742 kilometers.'
```

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

In [44]:

```
d = {'k1':[1,2,3,{'trick
a=d['k1'][3]['tricky'][3]
a
```

Out[44]: 'hello'

In []:

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [11]:

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

Out[11]:

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

In [12]:

```
np.linspace(5,5,10)
```

Out[12]:

```
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 [16]:

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

4

Out[16]:

```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

In [19]:

```
z=np.arange(9)  
z.reshape(3,3)
```

Out[19]:

```
array([[0, 1, 2],  
       [3, 4, 5],  
       [6, 7, 8]])
```

1 2 3 4 5 6

7. Concatenate a and b

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

In [21]:

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

Out[21]:

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In []:

```
import pandas as pd
```

In [45]:

```
import pandas as pd
a= [0,1]
b=[2,3]
c=[4,5]
pd.DataFrame([a,b,c])
```

Out[45]:

| | 0 | 1 |
|---|---|---|
| 0 | 0 | 1 |
| 1 | 2 | 3 |
| 2 | 4 | 5 |

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

In [48]:

```
import pandas as pd
date=pd.to_datetime("1st
dateseries=date+pd.to_ti
data=pd.DataFrame(datese
data
```

Out[48]:

Dates

| | |
|----|------------|
| 0 | 2023-01-01 |
| 1 | 2023-01-02 |
| 2 | 2023-01-03 |
| 3 | 2023-01-04 |
| 4 | 2023-01-05 |
| 5 | 2023-01-06 |
| 6 | 2023-01-07 |
| 7 | 2023-01-08 |
| 8 | 2023-01-09 |
| 9 | 2023-01-10 |
| 10 | 2023-01-11 |
| 11 | 2023-01-12 |
| 12 | 2023-01-13 |
| 13 | 2023-01-14 |
| 14 | 2023-01-15 |

| | |
|-----------|------------|
| 15 | 2023-01-16 |
| 16 | 2023-01-17 |
| 17 | 2023-01-18 |
| 18 | 2023-01-19 |
| 19 | 2023-01-20 |
| 20 | 2023-01-21 |
| 21 | 2023-01-22 |
| 22 | 2023-01-23 |
| 23 | 2023-01-24 |
| 24 | 2023-01-25 |
| 25 | 2023-01-26 |
| 26 | 2023-01-27 |
| 27 | 2023-01-28 |
| 28 | 2023-01-29 |
| 29 | 2023-01-30 |
| 30 | 2023-01-31 |
| 31 | 2023-02-01 |

32 2023-02-02
33 2023-02-03
34 2023-02-04
35 2023-02-05
36 2023-02-06
37 2023-02-07
38 2023-02-08
39 2023-02-09
40 2023-02-10

10. Create 2D list to DataFrame

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

In [39]:

```
lists = [[1, 'aaa', 22],  
lst=pd.DataFrame(lists)  
lst
```

Out[39]:

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

In []:

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