

Basic Python

1. Split this string

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

In [4]: s="Hi there Sam!"
s.split()

Out[4]: ['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 [13]: 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 [84]: d = {'k1':[1,2,3,{'tricky':['oh', 'man', 'inception',{'target':[1,2,3,'hello']}]}]}
d["k1"][3]["tricky"][3]["target"][3]

Out[84]: 'hello'
```

Numpy

```
In [ ]: import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [95]: import numpy as np
arr=np.zeros(10)
arr

Out[95]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

In [107... import numpy as np
arr1=np.ones(10)*5
arr1

Out[107]: 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 [113... import numpy as np
array=np.arange(20,35,2)
array

Out[113]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

```
In [116... import numpy as np
array1=np.arange(0,9).reshape(3,3)
array1

Out[116]: 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 [125... import numpy as np
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
c=np.concatenate((a,b),axis=0)
c

Out[125]: array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
In [131... import pandas as pd

In [137... x=[1,2]
y=[4,5]
z=[6,7]
data=pd.DataFrame([x,y,z])
data

Out[137]:
```

	0	1
0	1	2
1	4	5
2	6	7

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

```
In [138... dates=pd.date_range(start='1/01/2023',end='10/02/2023')
dates

Out[138]: DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
                        '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
                        '2023-01-09', '2023-01-10',
                        ...,
                        '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
                        '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
                        '2023-10-01', '2023-10-02'],
                        dtype='datetime64[ns]', length=275, freq='D')
```

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 [140... lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
dataframe=pd.DataFrame(lists)
dataframe

Out[140]:
```

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

```
In [ ]:
```