

Basic Python

1. Split this string

```
In [2]: s = "Hi there Sam!"

In [8]: s.split()

Out[8]: ['Hi', 'there', 'Sam!']
```

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

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

```
In [9]: planet = "Earth"
        diameter = 12742

In [16]: text="The diameter of {} is {} kilometers".format(planet,diameter)
         print(text)

The diameter of Earth is 12742 kilometers
```

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

```
In [18]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]]]}

In [20]: d.target.index(3)

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AttributeError                                Traceback (most recent call last)
C:\Users\JAGADE~1\AppData\Local\Temp\ipykernel_10372\2978707764.py in <module>
----> 1 d.target.index(3)

AttributeError: 'dict' object has no attribute 'target'
```

Numpy

```
In [21]: import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [28]: array=np.zeros(10)
        array

Out[28]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

In [31]: array=np.ones(10)*5
        array

Out[31]: 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 [34]: even=np.arange(20,35,2)
        even

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

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

```
In [42]: matrix=np.arange(0, 9).reshape(3,3)
        matrix

Out[42]: array([[0, 1, 2],
               [3, 4, 5],
               [6, 7, 8]])
```

7. Concatinate a and b

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

```
In [47]: a = np.array([1, 2, 3])
        b = np.array([4, 5, 6])
        np.concatenate((a, b))

Out[47]: array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columnns

```
In [48]: import pandas as pd

In [49]: data = [['tom', 10], ['nick', 15], ['juli', 14]]
        df = pd.DataFrame(data, columns=['Name', 'Age'])
        df

Out[49]:
```

	Name	Age
0	tom	10
1	nick	15
2	juli	14

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

```
In [59]: dates = pd.date_range('2023-01-1', '2023-02-10', freq='D')
        dates

Out[59]: 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', '2023-01-11', '2023-01-12',
                        '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
                        '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
                        '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
                        '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
                        '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',
                        '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
                        '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
                        '2023-02-10'],
                        dtype='datetime64[ns]', freq='D')
```

10. Create 2D list to DataFrame

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

```
In [50]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

In [57]: df = pd.DataFrame(lists)
        print(df )

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