

Basic Python

1. Split this string

```
In [3]: s = "Hi there Sam!"
```

```
In [4]: arr=s.split(" ")
for i in arr:
    print(i)
#print(arr)

Hi
there
Sam!
```

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

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

```
In [5]: planet = "Earth"
diameter = 12742
```

```
In [6]: print("The diameter of Earth is {} kilometers".format(diameter))
```

The diameter of Earth is 12742 kilometers

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

```
In [7]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

```
In [8]: d["k1"][3]["tricky"][3]["target"][3]
```

```
Out[8]: 'hello'
```

Numpy

```
In [10]: import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [11]: np.zeros(10)
```

```
Out[11]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

```
In [12]: np.ones(10)*5
```

```
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 [13]: np.ones(10)*5
```

```
Out[13]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

```
In [14]: np.arange(0,9).reshape(3,3)
```

```
Out[14]: 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 [15]: a = np.array([1, 2, 3])
         b = np.array([4, 5, 6])
         np.array([a,b]).reshape(1,-1),np.concatenate((a,b),axis=0)
```

```
Out[15]: (array([[1, 2, 3, 4, 5, 6]]), array([1, 2, 3, 4, 5, 6]))
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
In [16]: import pandas as pd
```

```
In [21]: pd.DataFrame(np.array([[1,2],[3,4],[5,6]]),columns=['a','b'])
```

```
Out[21]:   a  b
0  1  2
1  3  4
2  5  6
```

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

```
In [22]: pd.date_range(start="2023-01-01",end="2023-02-10")
```

```
Out[22]: 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 [23]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

```
In [24]: pd.DataFrame(lists)
```

```
Out[24]:   0  1  2
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
```

```
In [ ]:
```