

Basic Python

1. Split this string

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

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

['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 [5]: planet = "Earth"
diameter = 12742
print("The diameter of {0} is {1} 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 [6]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]]]}
```

```
print(d['k1'][3]['tricky'][3]['target'][3])

hello
```

Numpy

```
In [9]: import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

```
In [13]: import numpy as np
array=np.ones(10)*5
print(array)

[5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
In [25]: import numpy as np
array = np.arange(20,35,2)
print(array)

[20 22 24 26 28 30 32 34]
```

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

```
In [18]: array = np.arange(0,9).reshape(3,3)
print(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 [19]: a=np.array([1,2,3])
b=np.array([4,5,6])
np.concatenate((a,b),axis=0)

Out[19]: array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
In [ ]: import pandas as pd

In [21]: import pandas as pd
m=[1,2,3]
n=pd.DataFrame(m,columns=["Numbers"])
print(n)

   Numbers
0         1
1         2
2         3
```

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

```
In [ ]: p=pd.date_range(start='1-01-2023',end='2-10-2023')
print(p)
```

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 [23]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
g=pd.DataFrame(lists,columns=["sNumber", "letter","dno"])
print(g)

   sNumber letter  dno
0         1   aaa   22
1         2   bbb   25
2         3   ccc   24
```