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Basic Python

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1. Split this string

```
[ ] s = "Hi there Sam!"
    s.split()

    ['Hi', 'there', 'Sam!']

[ ]
```

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

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

```
[ ] planet = "Earth"
    diameter = 12742
    print("The diameter of {} is {} kilometers".format(planet,diameter) )

    The diameter of Earth is 12742 kilometers
```

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

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

    'hello'
```

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Numpy

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
[ ] import numpy as np
    array = np.zeros(10)
    print(array)

    [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

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```
import numpy as np
array = np.ones(10)*5
print(array)
```

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

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

```
[ ] a = np.arange(20,36,2)
    a
```

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

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

```
[ ] s = np.arange(0,9).reshape(3,3)
    s
```

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

7. Concatenate a and b

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7. Concatenate a and b

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

```
[ ]  a = np.array([1,2,3])
     b = np.array([4,5,6])
     s = np.concatenate((a,b),axis =0)
     print(s)

     [1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
d = {"reg no":[1,2],
     "name":['santhosh','vignesh']}
df = pd.DataFrame(d)
df
```

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

```
[ ] s = pd.date_range(start='01-01-2023',end ='02-10-2023')
    s
```

```
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]]

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

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

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

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists)
df
```

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

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