Basic Python

1. Split this string

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

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

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

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

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

```
The diameter of Earth is 12742 kilometers
```

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'
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

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

```
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

```
arr=list(range(20,35,2))
arr
```

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

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

```
import numpy as np
x =  np.arange(0,9).reshape(3,3)
x
```

```
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])

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

```
[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
data = [10,20,30]
df = pd.DataFrame(data, columns=['Marks'])
df
```

	Marks
0	10
1	20
2	30

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

```
import pandas as pd
per1 = pd.date_range(start ='01-01-2023',
         end ='02-10-2023', freq ='D')

for val in per1:
    print(val)
```

```
2023-01-01 00:00:00
2023-01-02 00:00:00
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

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]]
df = pd.DataFrame(lists, columns =['Sno','Name', 'Number'])
df
```

	Sno	Name	Number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24