Basic Python

1. Split this string

```
s = "Hi there Sam!"
```

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

```
['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
```

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

```
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']}]}]}
print(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)
print(array)
array=np.ones(10)*5
print(array)
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
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

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

```
[[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])

```
import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
np.vstack((a,b))
```

```
array([[1, 2, 3],
```

```
       [4, 5, 6]])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
data=[['Apple',5],['Grapes',6],['Mango',7]]
df=pd.DataFrame(data,columns=['fruits','price'])
df
```

	fruits	price
0	Apple	5
1	Grapes	6
2	Mango	7

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

```
import pandas as pd
data=pd.date_range(start='1-1-2023',end='10-2-2023')
for val in data:
  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
2023-02-11 00:00:00
2023-02-12 00:00:00
2023-02-13 00:00:00
2023-02-14 00:00:00
2023-02-15 00:00:00
2023-02-16 00:00:00
2023-02-17 00:00:00
2023-02-18 00:00:00
2023-02-19 00:00:00
2023-02-20 00:00:00
2023-02-21 00:00:00
2023-02-22 00:00:00
2023-02-23 00:00:00
2023-02-24 00:00:00
2023-02-25 00:00:00
2023-02-26 00:00:00
2023-02-27 00:00:00
2023-02-28 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]]
```

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

	sino	Name	Age
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24