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.

```
planet = "Earth"
diameter = 12742

print("The diameter of "+ planet +" is "+ str(diameter) +" kilometers")
```

```
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?

```
arr = np.zeros(10)
print(arr)
```

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

```
arr1 = np.ones(10)*5
print(arr1)
```

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

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

```
arr2 = np.arange(20,36,2)
print(arr2)
```

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

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

```
arr4 = np.arange(0,8+1)
arr4.resize(3,3)
print(arr4)
```

```
[[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])

c = np.concatenate((a,b))
print(c)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
data={'Name':['Dwaraknath K','Swathi K','Harini K'],'Age':['20','18','52']}
a=pd.DataFrame(data)
print(a)
```

```
              Name Age
0  Dwaraknath K  20
1       Swathi K  18
2       Harini K  52
```

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

```
import datetime
import pandas as pd
test = datetime.datetime.strptime("01/01/2023","%d/%m/%Y")
k=41
dg = pd.date_range(test,periods=k)
print(dg.strftime("%d/%m/%Y"))
```

```
Index(['01/01/2023', '02/01/2023', '03/01/2023', '04/01/2023', '05/01/2023',
       '06/01/2023', '07/01/2023', '08/01/2023', '09/01/2023', '10/01/2023',
       '11/01/2023', '12/01/2023', '13/01/2023', '14/01/2023', '15/01/2023',
       '16/01/2023', '17/01/2023', '18/01/2023', '19/01/2023', '20/01/2023',
       '21/01/2023', '22/01/2023', '23/01/2023', '24/01/2023', '25/01/2023',
       '26/01/2023', '27/01/2023', '28/01/2023', '29/01/2023', '30/01/2023',
       '31/01/2023', '01/02/2023', '02/02/2023', '03/02/2023', '04/02/2023',
       '05/02/2023', '06/02/2023', '07/02/2023', '08/02/2023', '09/02/2023',
       '10/02/2023'],
      dtype='object')
```

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]]
```

```
lists = [[1, 'aaa', 22],[2,'bbb', 25],[3,'ccc', 24]]
a = pd.DataFrame(lists,columns=['No','Letter','Numbers'])
print(a)
```

	No	Letter	Numbers
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24