Basic Python

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));
```

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':[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?

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

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

```
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

```
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

```
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])

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

data = [['tom', 10], ['nick', 15], ['juli', 14]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
df
```

```
   Name  Age
0   tom   10
1  nick   15
2  juli   14
```

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

```
import datetime
test_date = datetime.datetime(2023, 1, 1)
print("The original date is : " + str(test_date))
K = 40
res = [test_date + datetime.timedelta(days=idx) for idx in range(K)]
print("Next K dates list : " + str(res))
```

```
The original date is : 2023-01-01 00:00:00
Next K dates list : [datetime.datetime(2023, 1, 1, 0, 0),
datetime.datetime(2023, 1, 2, 0, 0), datetime.datetime(2023, 1, 3, 0,
```

```
0), datetime.datetime(2023, 1, 4, 0, 0), datetime.datetime(2023, 1, 5,
0, 0), datetime.datetime(2023, 1, 6, 0, 0), datetime.datetime(2023, 1,
7, 0, 0), datetime.datetime(2023, 1, 8, 0, 0), datetime.datetime(2023,
1, 9, 0, 0), datetime.datetime(2023, 1, 10, 0, 0),
datetime.datetime(2023, 1, 11, 0, 0), datetime.datetime(2023, 1, 12,
0, 0), datetime.datetime(2023, 1, 13, 0, 0), datetime.datetime(2023,
1, 14, 0, 0), datetime.datetime(2023, 1, 15, 0, 0),
datetime.datetime(2023, 1, 16, 0, 0), datetime.datetime(2023, 1, 17,
0, 0), datetime.datetime(2023, 1, 18, 0, 0), datetime.datetime(2023,
1, 19, 0, 0), datetime.datetime(2023, 1, 20, 0, 0),
datetime.datetime(2023, 1, 21, 0, 0), datetime.datetime(2023, 1, 22,
0, 0), datetime.datetime(2023, 1, 23, 0, 0), datetime.datetime(2023,
1, 24, 0, 0), datetime.datetime(2023, 1, 25, 0, 0),
datetime.datetime(2023, 1, 26, 0, 0), datetime.datetime(2023, 1, 27,
0, 0), datetime.datetime(2023, 1, 28, 0, 0), datetime.datetime(2023,
1, 29, 0, 0), datetime.datetime(2023, 1, 30, 0, 0),
datetime.datetime(2023, 1, 31, 0, 0), datetime.datetime(2023, 2, 1, 0,
0), datetime.datetime(2023, 2, 2, 0, 0), datetime.datetime(2023, 2, 3,
0, 0), datetime.datetime(2023, 2, 4, 0, 0), datetime.datetime(2023, 2,
5, 0, 0), datetime.datetime(2023, 2, 6, 0, 0), datetime.datetime(2023,
2, 7, 0, 0), datetime.datetime(2023, 2, 8, 0, 0),
datetime.datetime(2023, 2, 9, 0, 0)]
```

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 =['s.no','name','rollno'])
print(df )
```

```
   s.no name  rollno
0     1  aaa      22
1     2  bbb      25
2     3  ccc      24
```