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 {0} is {1} 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']}]}]}


a = list(d.values())
b = list(a[-1][-1].values())
c = list(b[-1][-1].values())
print(c[-1][-1])
```

```
hello
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

```
print(np.full((1,10),5))
```

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

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

```
a = [i for i in range(20,35,2)]
print(a)
```

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

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

```
m = np.arange(0,9)
print(m.reshape(3,3))
```

```
[[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])

```
x = np.array([1,2,3])
y = np.array([4,5,6])
print(np.concatenate([x,y]))
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
dataframe = {'Name': ['SHARAN','SANKAR','SANTNER'],
             'Age': [20,22,16]}
print(pd.DataFrame(dataframe))
```

```
      Name  Age
0   SHARAN   20
1   SANKAR   22
2  SANTNER   16
```

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

```
print(pd.date_range(start="2023-01-01",end="2023-02-10"))
```

```
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]]
```

```
print(pd.DataFrame(lists))
```

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