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.

+ Code + Text

```
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']}]}]}

d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
d['k1'][-1]['tricky'][-1]['target'][-1]
```

```
'hello'
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
a=np.zeros(10)
a
```

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

```
b=np.ones(10)*5
b
```

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

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

```
c=np.arange(20,35,2)
c
```

```
array([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).reshape(3,3)
m
```

```
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])
c=np.concatenate((a,b),axis=0)
c
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
df=[['aaa','bbb'],['ccc','ddd'],['eee','fff']]
df=pd.DataFrame(df)
df
```

	0	1
0	aaa	bbb
1	ccc	ddd
2	eee	fff

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

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

```
dates=pd.date_range('01-01-2023','10-02-2023')
dates
```

```
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',
               ...
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, 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]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
l=pd.DataFrame(lists)
l
```

	0	1	2
0	1	aaa	22
1	2	bbb	25