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))
```

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']}]}]}

display=d['k1'][3]['tricky'][3]['target'][3]
display
```

'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.]

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

print(arr)
```

[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(20,36,2)
print(array)
```

[20 22 24 26 28 30 32 34]

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

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

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

Pandas
8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

data = {"Name":['Ramchandar','Lakshmanan','Bharathram','Mathanraj'],"Age":[20,21,20,21]}
df=pd.DataFrame(data)
df
```

```
  Name  Age
0  Ramchandar  20
1  Lakshmanan  21
2  Bharathram  20
3  Mathanraj  21
```

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

```
import datetime
per1= pd.date_range(start='01-01-2023',end='02-10-2023')
for val in per1:
  print(str(val)[0:10])
```

```
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

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]]
```


```
l1=pd.DataFrame(lists)
l1
```

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