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
"the diameter of {} is {} kilometres".format(planet, diameter)
```

```
{"type":"string"}
```

```
"the diameter of {} is {} kilometres".format("Earth",12742)
```

```
{"type":"string"}
```

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'][3]['tricky'][3]['target'][3]
```

```
{"type":"string"}
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
import numpy as np
Array = np.zeros(10)
Array
```

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

```
import numpy as np
Array = np.ones(10)*5
Array
```

```
array([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
Erray=np.arange(20,35,2)
Erray
```

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

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

```
import numpy as np
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])

```
import numpy as np

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

M = np.concatenate((a, b), axis = 0)
print (M)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
import pandas as pd
data = [['ravi', 10], ['ram', 15], ['sam',21] ]



df = pd.DataFrame(data, columns=['Name', 'Age'])

df
```

```
   Name  Age
0  ravi   10
1   ram   15
2   sam   21
```

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

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]]


import pandas as pd

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

d = pd.DataFrame(lists, columns =['num', 'Name', 'Age'],)
print(d)
```

```
   num Name  Age
0    1  aaa   22
1    2  bbb   25
2    3  ccc   24
```