Basic Python

1. Split this string

```
[1] s = "Hi there Sam!"
```

```
[2] s. split()
```

```
['Hi', 'there', 'Sam!']
```

2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

```
[3] planet = "Earth"
    diameter = 12742
```

```
[4] 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"

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

```
[6] print(d['k1'][3]["tricky"][3]['target'][3])
```

```
hello
```

Numpy

```
[7] import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
[8] import numpy as np
    array=np.zeros(10)
    print("An array of 10 zeros:")
    print(array)
```

```
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
[9] import numpy as np
    array=np.ones(10)*5
    print("An array of 10 fives:")
    print(array)
```

```
An array of 10 fives:
[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 of all the even integers from 20 to 35")
print(array)
```

```
Array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

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

```
[17] 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])

```
[15] a = np.array([1, 2, 3])
     print(a)

     b = np.array([4, 5, 6])
     print(b)

     print('\n---Result of a and b---')
     print(np.concatenate((a, b)))

     [1 2 3]
     [4 5 6]

     ---Result of a and b---
     [1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
[13] import pandas as pd
```

```
[14]
     data=[10,20,30]
     d=pd.DataFrame(data, columns=['Numbers'])
     print(d)

        Numbers
     0       10
     1       20
     2       30
```

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

```
[12] import pandas as pd
     from dateutil.parser import parse
     date_series=pd.Series(['Jan 2023' , 'Feb 2023'])
     print("Original Series:")
     print(date_series)

     Original Series:
     0    Jan 2023
     1    Feb 2023
     dtype: object
```

10. Create 2D list to DataFrame

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

```
[11] import pandas as pd
     lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
     df = pd.DataFrame(lists, columns =['Fnumber', 'name','Lnumber'])
     print(df )

        Fnumber name  Lnumber
     0        1  aaa       22
     1        2  bbb       25
     2        3  ccc       24
```