1. **Split the string:**

S = “Hi there Sam!”

Program:

```
s=”Hi there Sam!”
s=s.split()
Print(s);
```

Output:

‘Hi’, ‘there’, ‘Sam!’

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

```
planet=”Earth”
diameter= 12742
```

Program:

```
planet= “Earth”
diameter= 12742
print(‘The diameter of {} is {} kilometres. ‘ . format (planet, diameter));
```

Output:

The diameter of Earth is 12742 kilometres.

3. **In this nest dictionary grab the word “hello”**

Program:

```
lst = [1,2, [3,4],[5,[100,200,[‘hello’]],23,11],1,7]
a=lst[3][1][2];
print (a)
```

Output:

[‘hello’]

4. **Numpy**

Import numpy as np

4.1 Create an array of 10 zeros?

Program:

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

Output:

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

4.2. Create an array of 10 fives?

Program:

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

Output:

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

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

Program:

```
import numpy as np
array=np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
```

Output:

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

6. Create an array of 3×3 matrix with values ranging from 0 to 8

Program:

```
import numpy as np
x =  np.arange(0, 9).reshape(3,3)
print(x)
```

Output:

```
[[ 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])

Program:

```
import numpy as np

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)))
```

Output:

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

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

8. Create a dataframe with 3 rows and 2 columns

Import pandas as pd

Program:

```
Data={'name':['aaa','bbb','ccc'],
    'mark':[88,77,99]}
Df=pd.DataFrame(data)
Print(df)
```

Output:

```
  Name  mark
0  aaa    88
1  bbb    77
2  ccc    99
```

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

Program:

```
dates=pd.date_range('2023-01-01',periods=40,freq='d')
s=pd.Series(dates)
s
```

Output:

```
0  2023-01-01
1  1    2023-01-02
2  2023-01-03
3  3    2023-01-04
4  2023-01-05
5  5    2023-01-06
6  2023-01-07
7  7    2023-01-08
8  2023-01-09
9  9    2023-01-10
10   2023-01-11
11   11   2023-01-12
```

12 2023-01-13
13 13 2023-01-14
14 2023-01-15
15 15 2023-01-16
16 2023-01-17
17 17 2023-01-18
18 2023-01-19
19 19 2023-01-20
20 2023-01-21
21 21 2023-01-22
22 2023-01-23
23 23 2023-01-24
24 2023-01-25
25 25 2023-01-26
26 2023-01-27
27 27 2023-01-28
28 2023-01-29
29 29 2023-01-30
30 2023-01-31
31 31 2023-02-01
32 2023-02-02
33 33 2023-02-03
34 2023-02-04
35 35 2023-02-05
36 2023-02-06
37 37 2023-02-07
38 2023-02-08
39 39 2023-02-09
Dtype: datetime64[ns]

10. Create 2D list to DataFrame

Program:

```
lists = [[1, ‘aaa’, 22], [2, ‘bbb’, 25], [3, ‘ccc’, 24]]

lists = [[1, ‘aaa’, 22], [2, ‘bbb’, 25], [3, ‘ccc’, 24]]
df=pd.DataFrame(lists)
print(df)
```

Output:

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