

Basic Python

1. Split this string

```
s = "Hi there Sam!"

s = "Hi there Sam!"
x=s.split()
print(x)

['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 {planet} is {diameter}
kilometers".format(planet="Earth", diameter= 12742) )
```

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']}]}]}
print(d.get('k1')[3].get('tricky')[3].get('target')[3])

hello
```

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)

import numpy as np
array2=np.ones(10)*5
```

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

```
import numpy as np
array=np.arange(20,35,2)
```

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])
np.concatenate((a, b), axis=None)

array([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
record = {
    "Name": ["Tom", "Jack", "Lucy"],
    "Marks": [9, 19, 20]
}
df = pd.DataFrame(record)
```

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

```
import datetime
import pandas as pd
test_date = datetime.datetime.strptime("01-01-2023", "%d-%m-%Y")
K = 41

date_generated = pd.date_range(test_date, periods=K)
print(date_generated.strftime("%d-%m-%Y"))

Index(['01-01-2023', '02-01-2023', '03-01-2023', '04-01-2023', '05-01-2023',
      '06-01-2023', '07-01-2023', '08-01-2023', '09-01-2023', '10-01-2023',
      '11-01-2023', '12-01-2023', '13-01-2023', '14-01-2023', '15-01-
```

```

2023',
    '16-01-2023', '17-01-2023', '18-01-2023', '19-01-2023', '20-01-
2023',
    '21-01-2023', '22-01-2023', '23-01-2023', '24-01-2023', '25-01-
2023',
    '26-01-2023', '27-01-2023', '28-01-2023', '29-01-2023', '30-01-
2023',
    '31-01-2023', '01-02-2023', '02-02-2023', '03-02-2023', '04-02-
2023',
    '05-02-2023', '06-02-2023', '07-02-2023', '08-02-2023', '09-02-
2023',
    '10-02-2023'],
    dtype='object')

```

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]]

```