Basic Python

1. Split this string

In [ ]:

```
s = "Hi there Sam!"
```

In [ ]:

```
string="Hi there Sam!"
words=string.split(' ')
print(words)
```

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

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

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

In [ ]:

```
planet = "Earth"
diameter = 12742
```

In [ ]:

```
planet = "Earth"
diameter = 12742
print("the diameter of {} is {}kilometers.".format(planet,diameter))
```

```
the diameter of Earth is 12742kilometers.
```

3. In this nest dictionary grab the word "hello"

In [ ]:

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

In [ ]:

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

```
hello
```

Numpy

In [ ]:

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [ ]:

```
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.]
```

In [ ]:

```
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

In [ ]:

```
import numpy as np
array=np.arange(20,35,2)
print("array of all the even integers from 20 to 36")
print(array)
```

```
array of all the even integers from 20 to 36
[20 22 24 26 28 30 32 34]
```

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

In [ ]:

```
np.arange(0,9).reshape((3,3))
```

Out[ ]:

```
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])

In [ ]:

```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
np.concatenate((a,b),axis=0)
```

Out[ ]:

```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [ ]:

```
import pandas as pd
d={"names":["Rashmi","abdul","rahim"],"age":[20,40,30]}
df=pd.DataFrame(d)
df
```

Out[ ]:

	names	age
0	Rashmi	20
1	abdul	40
2	rahim	30

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

In [ ]:

```
p=pd.date_range(start="1-1-2023",end="2-10-2023")
for i in p:
  print(i)
```

```
2023-01-01 00:00:00
2023-01-02 00:00:00
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

10. Create 2D list to DataFrame

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

In [ ]:

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
pd.DataFrame(lists)
```

Out[ ]:

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