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
```

```
op="The diameter of {} is {} kilometers"
print(op.format(planet,diameter))
```

```
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']}]}]}
```

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

```
hello
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

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

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

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

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

```
[20 22 24 26 28 30 32 34]
```

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

```
arr=np.arange(0,9).reshape(3,3)
print(arr)
```

```
[[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])

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

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

▾ Pandas

▾ 8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
ip=[['apple',20],['cherry',15],['mango',10]]
result=pd.DataFrame(ip,columns=['fruits name','no.of.fruits'])
print(result)
```

```
     fruits name  no.of.fruits
0          apple            20
1         cherry            15
2          mango            10
```

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

```
d=pd.date_range(start='01-01-2023',end='02-10-2023')
res=pd.Series(d)
print(res)
```

```
0     2023-01-01
1     2023-01-02
2     2023-01-03
3     2023-01-04
4     2023-01-05
5     2023-01-06
6     2023-01-07
7     2023-01-08
8     2023-01-09
9     2023-01-10
10    2023-01-11
11    2023-01-12
12    2023-01-13
13    2023-01-14
14    2023-01-15
15    2023-01-16
16    2023-01-17
17    2023-01-18
18    2023-01-19
19    2023-01-20
20    2023-01-21
21    2023-01-22
22    2023-01-23
23    2023-01-24
24    2023-01-25
```

```
25    2023-01-26
26    2023-01-27
27    2023-01-28
28    2023-01-29
29    2023-01-30
30    2023-01-31
31    2023-02-01
32    2023-02-02
33    2023-02-03
34    2023-02-04
35    2023-02-05
36    2023-02-06
37    2023-02-07
38    2023-02-08
39    2023-02-09
40    2023-02-10
dtype: datetime64[ns]
```

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]]


res=pd.DataFrame(lists)
print(res)

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

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