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Domain : Artificial Intelligence (AI)
Topic : Fertilizers Recommendation System For Disease Prediction

Basic Python

1. Split this string

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

```
In [2]: str=s.split()
         print(str)

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

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

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

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

```
In [4]: print("The diameter of {0} is {1} kilometers.".format(planet,diameter))

The diameter of Earth is 12742 kilometers.
```

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

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

```
In [6]: d['k1'][3]['tricky'][3]['target'][3]
```

```
Out[6]: In [7]:
```

'hello'

Numpy

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
import numpy as np
```

In [8]:

```
array1=np.zeros(10)  
print(array1)
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
In [9]: array2=np.ones(10)*5
        print(array2)
```

```
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
In [10]: array3=np.arange(20,35,2)
         print(array3)
```

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

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

```
In [11]: matrix1=np.arange(0,9).reshape(3,3)
         print(matrix1)
```

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

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

Pandas

8. Create a data frame with 3 rows and 2 columns

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

```
In [14]: array_temp=np.random.randint(1, size=(3,2))
         df=pd.DataFrame(array_temp)
         print(df)
```

```
0 1
0 0
1 0
2 0
```

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

```
daterange=pd.date_range(start = '01-01-2023',end = '02-10-2023', freq = '24H')
```

In [15]:

```
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 Data Frame

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

In [16]:

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

In [17]:

```
df2d = pd.DataFrame(lists)
print(df2d)
```

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