Basic Python

1. Split this string

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

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

```
    ['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
```

```
planet = "Earth"
diameter = 12742
print( 'The diameter of {} is {} kilometers.' .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']}]}]}
```

```
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?

```
import numpy as np
x=np.arange(2,11).reshape(3,3)
print(x)
```

```
[[ 2  3  4]
 [ 5  6  7]
 [ 8  9 10]]
```

```
fivearray=np.ones(10)*5
print(fivearray)
```

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

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

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

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

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

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

```
[[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])
print(np.concatenate([a,b]))
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
a=[['0','1',]<['2','3'],['4','5']]
result=pd.DataFrame(a)
print(result)
```

```
            0
    0    True
    1  [4, 5]
```

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

```
import datetime
daydelta=datetime.timedelta(days=1)
startdate=datetime.date.today()
enddate=startdate+41*daydelta
for i in range((enddate-startdate).days):
  print(startdate+i*daydelta)
```

```
    2022-09-14
    2022-09-15
    2022-09-16
    2022-09-17
    2022-09-18
    2022-09-19
    2022-09-20
    2022-09-21
    2022-09-22
    2022-09-23
    2022-09-24
    2022-09-25
    2022-09-26
    2022-09-27
    2022-09-28
    2022-09-29
    2022-09-30
    2022-10-01
```

```
2022-10-02
2022-10-03
2022-10-04
2022-10-05
2022-10-06
2022-10-07
2022-10-08
2022-10-09
2022-10-10
2022-10-11
2022-10-12
2022-10-13
2022-10-14
2022-10-15
2022-10-16
2022-10-17
2022-10-18
2022-10-19
2022-10-20
2022-10-21
2022-10-22
2022-10-23
2022-10-24
```

```
from google.colab import drive
drive.mount('/content/drive')
```

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 pandas
lists=[[1,'aaa',22],[2,'bbb',25],[3,'ccc',24]]
df=pd.DataFrame(lists, columns=['Sl.No','Name','Number'])
print(df)
```

```
   Sl.No Name  Number
0      1  aaa      22
1      2  bbb      25
2      3  ccc      24
```

Colab paid products - Cancel contracts here