#TEAM ID: PNT2022TMID04039

Basic Python

1. Split this string

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

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
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.]
```

```
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

```
import numpy as np
array=np.arange(20,36,2)
print("Array of all the even integers from 30 to 70")
print(array)
```

```
Array of all the even integers from 30 to 70
[20 22 24 26 28 30 32 34]
```

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])

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

import numpy as np

exam_data  = {'name': ['Anastasia', 'Dima', 'Katherine', 'James',
'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],
        'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19]}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']

df = pd.DataFrame(exam_data , index=labels)
print("First three rows of the data frame:")
print(df.iloc[:3])
```

```
First three rows of the data frame:
        name  score
```

```
a  Anastasia   12.5
b       Dima    9.0
c  Katherine   16.5
```

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

```
from datetime import timedelta, date

def daterange(date1, date2):
    for n in range(int ((date2 - date1).days)+1):
        yield date1 + timedelta(n)

start_dt = date(2023, 1, 1)
end_dt = date(2023, 2, 10)
for dt in daterange(start_dt, end_dt):
    print(dt.strftime("%Y-%m-%d"))
```

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

```
2023-02-04
2023-02-05
2023-02-06
2023-02-07
2023-02-08
2023-02-09
2023-02-10
```

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]]

df = pd.DataFrame(lists, columns =['FName', 'LName', 'Age'])
print(df)
```

```
   FName LName  Age
0      1   aaa   22
1      2   bbb   25
2      3   ccc   24
```