Basic Python

1. Split this string

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

```
s="Hi there Sam!"
h= s.split()
print(h)
```

```
['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
```

```
h='The diameter of {} is {}'.format(planet,diameter)
h
```

```
'The diameter of Earth is 12742'
```

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'][3]['tricky'][3]['target'][3]
```

```
'hello'
```

```
!pip install numpy
```

```
import numpy as np
```

Numpy

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
import numpy as np
p=np.array(["0","0","0","0","0","0","0","0","0","0"])
p
```

```
array(['0', '0', '0', '0', '0', '0', '0', '0', '0', '0'], dtype='<U1')
```

```
import numpy as np
p=np.array(["5","5","5","5","5","5","5","5","5","5"])
p
```

```
array(['5', '5', '5', '5', '5', '5', '5', '5', '5', '5'], dtype='<U1')
```

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

```
import numpy as np
array=np.arange(20,35,2)
array
```

```
array([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)
x
```

```
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])

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

```
array([5, 7, 9])
```

Pandas

```
!pip install pandas
```

```
Collecting pandas
  Using cached pandas-1.4.4-cp310-cp310-win_amd64.whl (10.0 MB)
Collecting pytz>=2020.1
  Using cached pytz-2022.2.1-py2.py3-none-any.whl (500 kB)
Requirement already satisfied: python-dateutil>=2.8.1 in c:\users\raj\
appdata\local\programs\python\python310\lib\site-packages (from
pandas) (2.8.2)
Requirement already satisfied: numpy>=1.21.0 in c:\users\raj\appdata\
local\programs\python\python310\lib\site-packages (from pandas)
(1.23.3)
Requirement already satisfied: six>=1.5 in c:\users\raj\appdata\local\
programs\python\python310\lib\site-packages (from python-
dateutil>=2.8.1->pandas) (1.16.0)
Installing collected packages: pytz, pandas
Successfully installed pandas-1.4.4 pytz-2022.2.1

WARNING: You are using pip version 22.0.4; however, version 22.2.2 is
available.
You should consider upgrading via the 'C:\Users\Raj\AppData\Local\
```

```
Programs\Python\Python310\python.exe -m pip install --upgrade pip'
command.
```

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
import pandas as pd
data=[['raj',20],['dham',20],['nandha',20]]
df=pd.DataFrame(data,columns=['Name','Age'])
df
```

```
     Name  Age
0     raj   20
1    dham   20
2  nandha   20
```

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

```
series=pd.date_range(start='2023-01-01',end='2023-02-10')
series
```

```
DatetimeIndex(['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'],
              dtype='datetime64[ns]', freq='D')
```

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]]
```

```
p=pd.DataFrame(lists)
p
```

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