Basic Python

1. Split this string

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

In [2]:
```
s.split()
```

Out[2]:
```
['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 [8]:
```
txt = "The diameter of {planet} is {diameter} kilometers"
print(txt.format(planet="Earth",diameter=12742))
```

```
The diameter of Earth is 12742 kilometers
```

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

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

In [11]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
print(d['k1'][3]["tricky"][3]['target'][3])
```

```
hello
```

Numpy

In [9]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [12]:
```
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.]
```

In [13]:
```
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

In [14]:
```
array=np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
```

```
Array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

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

In [21]:
```
x =  np.arange(2, 11).reshape(3,3)
print(x)
```

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

7. Concatenate a and b

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

In [29]:
```
import numpy as np
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

In [31]:
```
import pandas as pd
```

In [32]:
```
# initialize list of lists
data = [['tom', 10], ['nick', 15], ['juli', 14]]

# Create the pandas DataFrame
```

```
df = pd.DataFrame(data, columns=['Name', 'Age'])

# print dataframe.
df
```

Out[32]:

	Name	Age
0	tom	10
1	nick	15
2	juli	14

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

In [35]:

```
import datetime
import pandas as pd

# initializing date
test_date = datetime.datetime.strptime("01-01-2023", "%d-%m-%Y")

# initializing K
K = 41

date_generated = pd.date_range(test_date, periods=K)
print(date_generated.strftime("%d-%m-%Y"))
```

```
Index(['01-01-2023', '02-01-2023', '03-01-2023', '04-01-2023', '05-01-2023',
       '06-01-2023', '07-01-2023', '08-01-2023', '09-01-2023', '10-01-2023',
       '11-01-2023', '12-01-2023', '13-01-2023', '14-01-2023', '15-01-2023',
       '16-01-2023', '17-01-2023', '18-01-2023', '19-01-2023', '20-01-2023',
       '21-01-2023', '22-01-2023', '23-01-2023', '24-01-2023', '25-01-2023',
       '26-01-2023', '27-01-2023', '28-01-2023', '29-01-2023', '30-01-2023',
       '31-01-2023', '01-02-2023', '02-02-2023', '03-02-2023', '04-02-2023',
       '05-02-2023', '06-02-2023', '07-02-2023', '08-02-2023', '09-02-2023',
       '10-02-2023'],
      dtype='object')
```

10. Create 2D list to DataFrame

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

In [38]:

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

In [39]:

```
df = pd.DataFrame(lists, columns =['no.','Tag', 'number'])
print(df )
```

```
   no.  Tag  number
0    1  aaa      22
1    2  bbb      25
2    3  ccc      24
```

In [ ]: