Basic Python

1. Split this string

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

In [2]:
```
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.

In [7]:
```
planet = "Earth"
diameter = 12742
```

In [9]:
```
txt = "The diameter of {planet} is {diameter} kilometers.".format(planet = "Earth", diameter = 12742)
print(txt)
```

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

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

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

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

In [17]:
```
d['k1'][3]['tricky'][3]['target'][3]
```

Out[17]:
```
'hello'
```

Numpy

In [19]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [20]:
```
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 [21]:
```
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 [23]:
```
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 [25]:
```
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])

In [32]:
```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])

x = np.concatenate((a, b), axis = 0)

print (x)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [12]:
```
import pandas as pd
data = {
   'col_a':[1,2,3],
   'col_b': [2,5,6],

}
df = pd.DataFrame(data)
```

In [13]:
```
df
```

Out[13]:

	col_a	col_b
0	1	2
1	2	5
2	3	6

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

In [22]:
```
import datetime

start = datetime.date(2023,1,1)

# initializing K
k = 41

res = []

for day in range(k):
    date = (start + datetime.timedelta(days = day)).isoformat()
    res.append(date)

# printing result
print("Next Dates list: " + str(res))
```

```
Next Dates list: ['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04', '2023-01-05', '2023-01-06', '2023-01-07', '20
23-01-08', '2023-01-09', '2023-01-10', '2023-01-11', '2023-01-12', '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-1
6', '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20', '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24', '20
23-01-25', '2023-01-26', '2023-01-27', '2023-01-28', '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01', '2023-02-0
2', '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]]

In [23]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [26]:
```
df = pd.DataFrame(lists,columns =['SNo', 'Name', 'Age'])
print(df)
```

```
   SNo Name  Age
0    1  aaa   22
1    2  bbb   25
2    3  ccc   24
```

In [ ]: