

## Basic Python

1. Split this strings = "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

3. In this nest dictionary grab the word "hello"  
d = {'k1':[1,2,3,{ 'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

## Numpy

import numpy as

np4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

7. Concatenate a and ba = np.array([1, 2, 3]), b = np.array([4, 5, 6])Pandas

8. Create a dataframe with 3 rows and 2 columnsimport pandas as pd

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

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]]

\* Split this string:

```
s = "Hi there Sam!"  
into a list.
```

```
In [4]:  
s = 'Hi there Sam!'  
In [3]:  
s.split()  
Out[3]:  
['Hi', 'there', 'dad!']
```

\* Given the variables:

```
planet = "Earth" diameter = 12742
Use .format() to print the following string:
```

The diameter of Earth is 12742 kilometers.

In [5]:

```
planet = "Earth"
diameter = 12742
```

In [6]:

```
print("The diameter of {} is {} kilometers.".format(planet,diameter))
The diameter of Earth is 12742 kilometers
```

\* Given this nested list, use indexing to grab the word "hello"

In [7]:

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

In [14]:

```
lst[3][1][2][0]
```

Out[14]:

```
'hello'
```

Given this nest dictionary grab the word "hello". Be prepared, this will be annoying/tricky

In [16]:

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

In [22]:

```
d['k1'][3]['tricky'][3]['target'][3]
```

Out[22]:

```
'hello'
```

\* import numpy as np

Create an array of 10 zeros

```
np.zeros(10)
```

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

\* Create an array of 10 fives

```
np.ones(10) * 5
```

```
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

\* Create an array of all the even integers from 10 to 50

```
print(np.arange(10,51,2))
```

```
[10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50]
```

```
x = np.arange(10,51)
```

```
y = (x%2 == 0)
```

```
z = x[y]
```

```
print(z)
```

```
[10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50]
```

\* Create a 3x3 matrix with values ranging from 0 to 8

```
np.arange(0,9).reshape((3,3))
```

```
array([[0, 1, 2],
```

```
       [3, 4, 5],
```

```
       [6, 7, 8]])
```

Create a 3x3 identity matrix

```
np.eye(3)
```

```
array([[1., 0., 0.],
```

```
       [0., 1., 0.],
```

```
       [0., 0., 1.]])
```

\* import numpy as np

```
a = np.array([1, 2, 3])
```

```
print(a)
```

```
b = np.array([4, 5, 6])
```

```
print(b)
```

```
print('\n---Result of a and b---')
```

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

```
[1 2 3]
```

```
[4 5 6]
```

```
---Result of a and b---
```

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

\* import pandas as pd

```
data = [['Alex', 10], ['Bob', 12], ['Clarke', 13]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
print df
Its output is as follows –
```

```
   Name  Age
0  Alex   10
1  Bob   12
2  Clarke 13
```

```
* import datetime

import pandas as pd

# initializing date

test_date = datetime.datetime.strptime("01-7-2022", "%d-%m-%Y")

# initializing K

K = 5

date_generated = pd.date_range(test_date, periods=K)

print(date_generated.strftime("%d-%m-%Y"))
Output:
Index(['01-07-2022', '02-07-2022', '03-07-2022', '04-07-2022', '05-07-2022'], dtype='object')
```

```
* import pandas as pd
a = [[1,2],[3,5,6]]
print(type(a))

for b in a:
    for j in b:
        print(j)

dt=zip(a)
df=pd.DataFrame(dt,columns=["d"])
```

```
print(type(df))
print(df)
Result
<class 'list'>
1
2
3
5
6
<class 'pandas.core.frame.DataFrame'>
d
0 [1, 2]
1 [3, 5, 6]
[Program finished]
```