

Basic Python

1. Split this string

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

['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

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.]

```
import numpy as np
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 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

```
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])
c = np.concatenate((a,b))
print(c)

[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

# Import pandas library
import pandas as pd

# initialize list of lists
data = [[0,'aaa', 10], [1,'bbb', 15]]
```

```
# Create the pandas DataFrame
```

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

```
# print dataframe.
```

```
df
```

	Sno	Name	Age
0	0	aaa	10
1	1	bbb	15

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

```
import pandas as pd
```

```
from datetime import datetime
```

```
pd.date_range(start="2023-01-01",end="2023-02-10").to_pydatetime().tolist()
```

```
[datetime.datetime(2023, 1, 1, 0, 0),  
datetime.datetime(2023, 1, 2, 0, 0),  
datetime.datetime(2023, 1, 3, 0, 0),  
datetime.datetime(2023, 1, 4, 0, 0),  
datetime.datetime(2023, 1, 5, 0, 0),  
datetime.datetime(2023, 1, 6, 0, 0),  
datetime.datetime(2023, 1, 7, 0, 0),  
datetime.datetime(2023, 1, 8, 0, 0),  
datetime.datetime(2023, 1, 9, 0, 0),  
datetime.datetime(2023, 1, 10, 0, 0),  
datetime.datetime(2023, 1, 11, 0, 0),  
datetime.datetime(2023, 1, 12, 0, 0),  
datetime.datetime(2023, 1, 13, 0, 0),  
datetime.datetime(2023, 1, 14, 0, 0),  
datetime.datetime(2023, 1, 15, 0, 0),  
datetime.datetime(2023, 1, 16, 0, 0),  
datetime.datetime(2023, 1, 17, 0, 0),  
datetime.datetime(2023, 1, 18, 0, 0),  
datetime.datetime(2023, 1, 19, 0, 0),  
datetime.datetime(2023, 1, 20, 0, 0),  
datetime.datetime(2023, 1, 21, 0, 0),  
datetime.datetime(2023, 1, 22, 0, 0),  
datetime.datetime(2023, 1, 23, 0, 0),  
datetime.datetime(2023, 1, 24, 0, 0),  
datetime.datetime(2023, 1, 25, 0, 0),  
datetime.datetime(2023, 1, 26, 0, 0),  
datetime.datetime(2023, 1, 27, 0, 0),  
datetime.datetime(2023, 1, 28, 0, 0),  
datetime.datetime(2023, 1, 29, 0, 0),  
datetime.datetime(2023, 1, 30, 0, 0),  
datetime.datetime(2023, 1, 31, 0, 0),  
datetime.datetime(2023, 2, 1, 0, 0),  
datetime.datetime(2023, 2, 2, 0, 0),
```

```

datetime.datetime(2023, 2, 3, 0, 0),
datetime.datetime(2023, 2, 4, 0, 0),
datetime.datetime(2023, 2, 5, 0, 0),
datetime.datetime(2023, 2, 6, 0, 0),
datetime.datetime(2023, 2, 7, 0, 0),
datetime.datetime(2023, 2, 8, 0, 0),
datetime.datetime(2023, 2, 9, 0, 0),
datetime.datetime(2023, 2, 10, 0, 0)]

```

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]]

import pandas as pd

# List1
lst = [[1, 'aaa', 22], [2, 'bbb', 25],
        ['3', 'ccc', 24]]

df = pd.DataFrame(lst, columns=['Sno', 'Name', 'Age'],
                  dtype = float)

print(df)

```

	Sno	Name	Age
0	1.0	aaa	22.0
1	2.0	bbb	25.0
2	3.0	ccc	24.0

```

/usr/local/lib/python3.7/dist-packages/IPython/core/
interactiveshell.py:3326: FutureWarning: Could not cast to float64,
falling back to object. This behavior is deprecated. In a future
version, when a dtype is passed to 'DataFrame', either all columns
will be cast to that dtype, or a TypeError will be raised
    exec(code_obj, self.user_global_ns, self.user_ns)

```