

Basic Python

1. Split this string

```
s = "Hi there Sam!"  
# Splits at space  
  
s.split()  
  
['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  
  
# Reverse the index numbers with the  
# parameters of the placeholders  
'The diameter of {0} is {1} kilometer'.format(planet,diameter)  
  
'The diameter of Earth is 12742 kilometer'
```

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

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

```
#array of 10 zeros
array1=np.zeros(10)
print(array1)
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
# array of 10 fives
array2=np.ones(10)*5
print(array2)
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
#array of all the even integers from 20 to 35
array3=np.arange(20,36,2)
print(array3)
[20 22 24 26 28 30 32 34]
```

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

```
#3x3 matrix with values ranging from 0 to 8
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])
#Concatenate
np.concatenate((a,b),axis=None)
```

```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
1.Numpy arrays
```

```
A = np.random.randint(10, size=(3,2))
```

```
#dataframe
```

```
df = pd.DataFrame(A, columns=['cola', 'colb'])
```

```
df
```

	cola	colb
0	2	3
1	2	5
2	8	9