# Basic Python

## 1. Split this string

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

In [ ]:
```
print(s.split(' '))
```

## 2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

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

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

## 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 [ ]:
```
print(d['k1'][3]['tricky'][3]['target'][3])
```

# Numpy

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

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

In [ ]:
```
arr = np.zeros(10)
print(arr)
```

In [ ]:
```
arr = np.ones(10)*5
print(arr)
```

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

In [ ]:
```
arr = np.arange(20,35,2)
print(arr)
```

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

In [ ]:
```
arr = np.arange(0,9).reshape(3,3)
print(arr)
```

## 7. Concatenate a and b

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

In [ ]:
```
```

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

# Pandas

## 8. Create a dataframe with 3 rows and 2 columns

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

In [ ]:
```
records = {
    'Name' : ['user1', 'user2', 'user3'],
    'Age' : [18,19,20]
}

df = pd.DataFrame(records)
df
```

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

In [ ]:
```
dates = pd.date_range(start = '1-1-2023', end = '10-2-2023')
for date in dates:
    print(date)
```

## 10. Create 2D list to DataFrame

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

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

In [ ]:
```
df = pd.DataFrame(lists, columns = ['S.no', 'Name', 'Points'])
print(df)
```