

# Case Study 1 – Getting Started With Python

## Problem Statement:

Consider yourself to be Sam who is a data scientist. He has been invited as a guest lecturer at a college to take an introductory session on Python.

## Tasks To Be Performed:

1. Create a list containing squares of numbers from 1 to 10 (HINT: use List Comprehension).
2. Write a function to take an array and return another array that contains the members of the first array that are even.
3. Write a function that takes 2 arrays and prints the members of the first array that are present in the second array. (HINT: use Membership Comprehension)

In [13]:

```
#Create a list containing squares of numbers from 1 to 10 (HINT: use List Comprehension).
ls = [i*i for i in range(1,11)]
ls
```

Out[13]:

[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]

In [14]:

```
#Write a function to check if the year number is a leap year.
def year_check(year):
    ly = False
    if year%400==0:
        ly = True
    else:
        if year%4==0:
            ly=True

    if ly:
        print("Leap year")
    else:
        print("Not a leap year")
```

In [12]:

```
year_check(1900)
```

Leap year

In [15]:

```
#Write a function to take an array and return another array that contains the members of the first array that are even.
def even(a):
    a2 = [i for i in a if i%2==0]
    return(a2)
```

In [17]:

```
even([1,2,3,4,5,6,7,8,9,10])
```

Out[17]:

[2, 4, 6, 8, 10]

In [18]:

```
#Write a function that takes 2 arrays and prints the members of the first array that are present in the second array. (HINT: use Membership Comprehension)
def common(a,b):
    x = [i for i in a if i in b]
    return(x)
```

```
In [23]: a = [1,2,3,4,5]
         b = [1,2,10,15,5]
         common(a,b)
```

Out[23]: [1, 2, 5]