## Understanding Type Error, Type Checking and Type Conversion

Consider an example of a coffee machine (let's call it as a function in terms of programming) which takes coffee powder as an input parameter while result in coffee as an output parameter. The point is that if we are supplying the input parameter other than a coffee powder then the given function i.e. coffee machine in this case will result an error.

Coffee Powder   Coffee Machine   Coffee
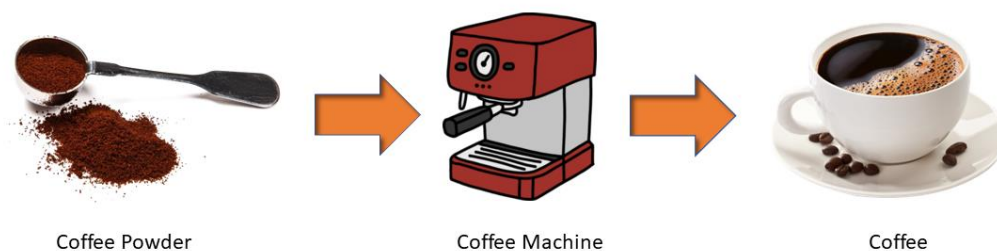
Now let's take an example in terms of Python programming. Suppose we want to find the length of the given number 346789, we will write the below Python Code:

print(len(346789))

After executing this line of code, we will get following error:

```
In [1]: print(len(346789))
Traceback (most recent call last):

  File "C:\Users\aksha\AppData\Local\Temp/ipykernel_14316/886196396.py", line 1, in <module>
    print(len(346789))

TypeError: object of type 'int' has no len()
```

So, this type of error is known as a Type Error. len function can only be executed if the input parameter is a string.

In order to check the type of input data to be executed is checked by a type function. For example, if we want to know the type of input which is "SHERLOCK" and also the type of 2. The python code used for this is:

```
print(type("SHERLOCK"))

print(type(2))
```

We obtain the following output:

```
In [4]: print(type("SHERLOCK"))
   ...:
   ...: print(type(2))
<class 'str'>
<class 'int'>
```

If you want to change one data type into other data type, then it is known as Type Casting or Type Conversion. To understand this let's do some coding. Suppose you have a number 1106, so to know its type we use below code:

```
number=1106

print(type(number))
```

We get the following output for the above code:

```
In [6]: number=1106
   ...: print(type(number))
<class 'int'>
```

Now, what is the output for below code?

```
number=str(1106)

print(type(number))
```

The output obtained is:

```
In [7]: number=str(1106)
   ...: print(type(number))
<class 'str'>
```

It is observed that the integer type is converted to string type.