Experiment 2: Working with variables and data types in Python like integer, Boolean, string and list

Aim: To perform operation with integer, Boolean, string and list

Objective: The objective of this practical is to perform various function with data types like integers Boolean, string and list and to understand the various operations performed with them.

Problem statement and Output:-

1] Define four valid variable of different data types like integer, Boolean, string and list. View the type of data stored within four valid variables. Define four invalid data type which will give you error.

```
In [1]: Num = 5
        type(Num)
Out[1]: int
```

```
In [2]: Char = "Jaguar"
        type(Char)
Out[2]: str
```

```
In [3]: is_raining = True
        type(is_raining)
Out[3]: bool
```

```
In [4]: language = ["java", "c++", "python"]
        type(language)
Out[4]: list
```

```
In [9]: 5_num = 3
```

```
  Input In [9]
    5_num = 3
      ^
SyntaxError: invalid decimal literal
```

```
In [10]: @_num = 4
```

```
  Input In [10]
    @_num = 4
      ^
SyntaxError: invalid syntax. Maybe you meant '==' or ':=' instead of '='?
```

```
In [12]: car = [jaguar , mahindra]
```

```
---------------------------------------------------------------------
NameError                               Traceback (most recent call last)
<ipython-input-12-cf09552b6c61> in <module>
----> 1 car = [jaguar , mahindra]

NameError: name 'jaguar' is not defined
```

```
In [13]: int num = 29
```

```
  File "<ipython-input-13-fbae791df472>", line 1
    int num = 29
        ^
SyntaxError: invalid syntax
```

2] Covert two float numbers into integer and vice versa.

```
In [15]: num1 = 29
         float(num1)
Out[15]: 29.0

In [17]: num2 = 99
         float(num2)
Out[17]: 99.0

In [18]: num3 = 92.444
         int(num3)
Out[18]: 92

In [19]: num4 = 129.999
         int(num4)
Out[19]: 129
```

3] Define two strings. Concatenate the two strings.

```
In [20]: name = " shivam !"
         greet = " Hello "
         print(greet + name)

          Hello  shivam !
```

4] Define a string. Try to access individual characters using single indexing. Check for some characters in the string, access a part of a string using by providing a `start:end` range.

```
In [2]: line1 =  "hello, and welcome to my world."
```

```
In [3]: print(line1[4])
```

```
o
```

```
In [4]: print(line1[22])
```

```
m
```

```
In [5]: print("z" in line1)
```

```
False
```

```
In [6]: print("w" in line1)
```

```
True
```

```
In [7]: print(line1[0:19])
```

```
hello, and welcome
```

Conclusion: In this practical we understand and perform various function with data types like integers, Boolean, string and list and also to understand the various operations performed with them.