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Chapter 2
Variables and Datatypes

A variable is the name given to a memory location in a program. for e.g.

```
a = 72;
b = "Abhinay"
c = 99.99
```

→ Variables = Container to store a value.
→ Keywords = Reserved word in Python.
→ Identifiers = Class / function / variable name.

Datatypes

Primarily there are following data types in Python.

1. Integers
2. Floating point numbers
3. Strings
4. Booleans
5. None

Python is a fantastic language that automatically identifies the type of data for us:

```
a = 72          # Identifies a as class <int>
b = "Abhinay" # Identifies b as class < str>
c = "8.2        # Identifies c as class < float>
```

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Rules for defining a Variable name
Also applies to other Identifiers.

- A variable name can contain alphabets, digits and underscore.
- A variable name can only start with an alphabet and underscore.
- A variable name cannot start with a digit.
- No while space is allowed to be used inside a variable name.

Examples of a few variables names are:

abhinay, one9, Seven, _twinkle etc.

Operators in Python
following are same comman operators in Python.

1. Arithmetic operators => +, -, *, / etc.
2. Assignment operators => =, +=, -= etc.
3. Compasision operators => ==, >, >=, != etc.
4. Logical Operators => and, or, not

Type() function and Typecasting
Type function is used to find the data type of a given variable in Python.

```
a = 31
type(a)  =>  class<int>
```

```
b = "Manisha"
type(b)      => class<str>

_pratiksha = 99.92
type(_pratiksha)   => class<float>
```

A number can be converted into a string and via versa (If possible)
There are many functions to convert one data type into another.

```
str(31) => "31"   => Integer to String Conversion
int("32") => 32   => String to Integer
float(32) => 32.0 => Integer to float
        ... and so on.
```

Here "31" is a string literal and 31 a numeric literal.

Input() function

This function allows the user to take input from the keyboard as a string.

```
a = input("Enter name")
```

→ If a is "twinkle", the user entered twinkle

It is important to note that the output of input is always a string (even if the numbe is entered)

→ If a is "34" user entered 34

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Chapter 2
Practice Set

Q.1 Write a python program to add two numbers.

Q.2 Write a Python program to find remainder when a number is divided by 2.

Q.4 Check the type of the variable assigned using input() function.

Q.3 Use comparision operators to find out whether a given variable a is greater than 'b' or not take a = 34 and b = 80.

Q.5 Write a python program to find average of two numbers entered by the user.

Q.6 Write a Python program to calculate square of a number entered by the user.