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* CHAPTER-2 : VARIABLES & DATATYPES

• A variable is the name given to a memory location in a program. for Example,

```
a = 30          → Variables = Containers to store
b = "Shayan"      a Value
c = 76.21       → Keywords = Reserved Words in Python
                → Identifiers = class/function/var. name
```

→ Data Types

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    = 51       ⇒ Class <int>
b    = 87.76    ⇒ Class <float>
name = "Shayan" ⇒ Class <str>
```

→ Rules for defining a variable name (ALL identifiers)

① A variable name can contain Alphabets, digits & underscores
② It can only start with an alphabet and underscore
③ A variable name can't start with a digit
④ NO whitespace is allowed to be used inside a variable name.

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→ Examples of a few variables names are :-
Shayan, seven, _five etc

→ Operators in Python
Following are some Common Operators in Python :-

1. Arithmetic => +, -, *, / etc.
2. Assignment => =, +=, -= etc.
3. Comparison => ==, >, >=, <, != etc.
4. Logical => and, Or, not etc.

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

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

b = "31"
type(b) => class <str>
```

• A number can be Converted into a string and vice 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 Conversion
float (32) => 32.0   : Integer to Float Conversion

--- and so on.
```

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

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→ input ().function

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

a = input ("enter name") ⇒ If a is "Shayan", the user entered Shayan.

It is imp to note that the output of input is always a string (even if the number is entered.)

⇒ If a is "15", user entered 15.