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Variables

A variable is a name that refers to a value stored in the computer's memory. Unlike some programming languages, Python variables do not require explicit declaration of type the type is determined automatically when a value is assigned.

The label used to refer to the variable (e.g., age,name). The actual data stored in the variable (number, text, etc.). The category of the data (string, integer, float, Boolean, object, etc.). Where the variable is accessible in the program (local or global). How long does the variable exists in memory during program execution.

Uses of Variables:

- To store data for later use.
- To make programs flexible and reusable.
- To avoid repeating the same values multiple times.
- To make code easier to read and maintain.

Rules for Naming Variables

- It can contain letters, digits, and underscores.

- Cannot start with a digit.

- No space or special characters (except _).

- Case-sensitive in most languages (Name and name are different).

Types:

And futher many types they are
Python supports various data types for variables:

- **Numeric:** int, float, complex

- **Sequence:** str, list, tuple

- **Mapping:** dict

- **Set:** set, frozenset

- **Boolean:** bool

  None Type: None

  and variables are generally 2 types of scope
  they are : Global Variable
          Local variable

  Global Variable – Accessible from anywhere in the program.

  Local Variable – Accessible only inside a specific function or block.