

## Understanding Variables in Programming

Imagine this:

You're working at a desk and have sticky notes where you write down important information like your name, today's date, or your favorite number. You label each sticky note so you know what's written on it.

In programming, variables are just like those labeled sticky notes. They let you store information so you can use it later.

### What is a Variable?

A variable is a named storage location in your computer's memory where you can store a piece of data (like a number, text, or result of a calculation).

Think of a variable as a container with a name on it.

### How Do You Use a Variable?

Here's a very simple example in Python:

```
name = "Alice"  
age = 25  
is_student = True
```

- name is a variable that stores a string ("Alice")
- age stores a number (25)
- is\_student stores a Boolean value (True or False)

Now, you can use these variables anywhere in your program:

```
print("Hello, my name is", name)  
print("I am", age, "years old.")
```

### Why Use Variables?

Type	Example	Description
String	"hello"	Text
Integer	42	Whole numbers
Float	3.14	Numbers with decimals
Boolean	True/False	Yes/No or On/Off logic
List	[1, 2, 3]	A collection of values

Variables make your program flexible and easier to understand. Instead of hardcoding values everywhere, you just use the variable.

Without variable:

```
print("My salary is 100000")
```

```
With variable:  
salary = 100000  
print("My salary is", salary)
```

Now you can easily change the value of salary in one place.

## Types of Variables (Common Data Types)

### Step-by-Step Practice

Let's do a simple exercise in Python:

```
# Step 1: Create variables  
first_name = "Thumula"  
last_name = "Suraweera"  
age = 24  
  
# Step 2: Print them  
print("My name is", first_name, last_name)  
print("I am", age, "years old")
```

Try changing the age to 30 and see what happens.

That's the power of variables: you don't need to change every line—just the variable's value.

### Final Tips

- Choose meaningful names (e.g., user\_name instead of x)
- Variable names cannot start with numbers
- They're case-sensitive: Age and age are different
- Keep them consistent and readable

If you understand variables, you've unlocked the first building block of programming! Everything else (like loops, functions, and conditions) builds on this idea.