Python Variables - Quick Guide

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1. What are Variables?

- Variables are containers for storing data values. In Python, a variable is created when you assign a value to it.

2. Rules for Naming Variables:

- Must start with a letter or an underscore (_).

- Cannot start with a number.

- Can only contain alphanumeric characters and underscores (A-Z, a-z, 0-9, and _).

- Case-sensitive: 'myVar' and 'myvar' are different.

3. Assigning Values to Variables:

- You do not need to declare the type of variable; Python automatically assigns the type based on the value.

Example:

```
x = 10       # Integer
name = "Alice" # String
price = 9.99   # Float
```

4. Multi-value Assignment:

- Assign multiple variables in a single line:

```
a, b, c = 1, 2, 3
```

- Assign the same value to multiple variables:

    x = y = z = 5

5. Variable Types:

- Integers: Whole numbers (e.g., 10, -5)

- Floats: Decimal numbers (e.g., 3.14, -0.99)

- Strings: Text enclosed in quotes (e.g., "Hello", 'World')

- Booleans: True or False values

6. Best Practices:

- Use meaningful names for variables to improve code readability.

- Follow snake_case convention (e.g., user_name, total_price).

7. Example Code:

```
# Simple Variable Usage

user_name = "John"

age = 25

height = 5.9

is_student = True


print(f"Name: {user_name}, Age: {age}, Height: {height}, Student: {is_student}")
```

That's a quick overview of Python variables!