

Python Variable

What is a Variable?

In Python, a variable is a symbolic identifier that acts as a reference to a value stored in memory, allowing you to store, modify, and retrieve data by associating that value with the variable's name; for example, in the statement `x = 10`, `x` is a variable that references the integer value 10, and you can use `x` in various operations and functions throughout your code to represent and work with that value.

How to Create a Variable

To create a variable in Python, simply assign a value to a name using the equals sign (`=`). Here's a small example:

```
x = "Apple"
y = 10
print(x)
print(y)

Apple
10
```

Rules for Naming Variables

- *Start with a Letter or Underscore:* Variable names must begin with a letter (a-z, A-Z) or an underscore (`_`). They cannot start with a digit.
- *Follow with Letters, Digits, or Underscores:* After the initial letter or underscore, variable names can include letters, digits (0-9), and underscores.
- *Case Sensitivity:* Variable names are case-sensitive, so `myVar`, `Myvar`, and `MYVAR` are considered different variables.
- *No Spaces or Special Characters:* Variable names cannot contain spaces or special characters like `@`, `#`, or `-`.
- *Avoid Reserved Words:* Variable names should not use Python reserved words or keywords (e.g., `if`, `for`, `while`, `class`) as they have special meanings in the language.

Valid Variable

- Starts with a letter or underscore.
- Contains only letters, digits, and underscores after the first character.

```
# Valid Variable
Fruit = "Apple"
_Quality = 10
print(Fruit)
print(_Quality)

Apple
10
```

Examples

- username,age,total_amount,is_valid,number_of_items,max_value,user_id,temp_data,score1,price_per_unit,userName,data_list,count_123,initial_value,average_score,last_updated,response_code,user_input,tempVar,finalResult

Invalid Variables

In Python, invalid variable names are those that do not adhere to the language's naming conventions. Invalid variable names include:

- *Starting with Digits:* Variable names must start with a letter or underscore, not a digit.
- *Containing Special Characters:* Variable names cannot include special characters such as @, #, \$, or -

```
# Invalid Variables
2nd_place = 'Ryuk'
first-name = 'Fan'
print(2nd_place)
print(first-name)

File "<ipython-input-3-36ee194896e3>", line 2
    2nd_place = 'Ryuk'
    ^
SyntaxError: invalid decimal literal
```

Examples

- 2nd_value (starts with a digit),my-variable (contains a hyphen),if (a reserved keyword),user name (contains a space),@price (contains a special character),total\$ (contains a dollar sign),while (a reserved keyword),data! (contains an exclamation mark),class (a reserved keyword),total amount (contains a space),3rdPlace (starts with a digit),price#tag (contains a hash symbol),return (a reserved keyword),def (a reserved keyword),my@value (contains a special character),new-value (contains a hyphen),from (a reserved keyword),for (a reserved keyword),print! (contains an exclamation mark),break (a reserved keyword)