

untitled1

September 24, 2024

Python Variables:

Python Variable is containers that store values. Python is not “statically typed”. We do not need to declare variables before using them or declare their type. A variable is created the moment we first assign a value to it. A Python variable is a name given to a memory location. It is the basic unit of storage in a program. In this article, we will see how to define a variable in Python.

What is a variable in python?

variables are essential for holding onto and referencing values throughout our application. by storing a value into a variable, you can reuse it as many times and in whatever way you like throughout your project. In python, variables are created the moment you give or assign a value to them.

```
[ ]: fav_place = "PARIS"
      WHY = "INFRASTRUCTURE"
      year = 8500
      A = "AC"
      print("my fav place is", fav_place, "because of its", WHY, "and it was found_
      ↪in", year, A)
```

my fav place is PARIS because of its INFRASTRUCTURE and it was found in 8500 AC

my fav place is EDINBHERG because of its INFRASTRUCTURE and it was founded in 8500 BC
In this example, we’ve created four variables: fav_place, why, year, and A. we’ve assigned the string value “EDINBHERG” to the fav_place and another string value “INFRASTRUCTURE” to why and an integer value to the variable year and a another string value to the variable A. • Variables in python are case-sensitive. in another words, we have to be observent when we are creating the variables, because “fav_place” will be different variable than “FAV_PLACE” even though they include the same letters. • variables names that use multiple words in python should be separated with an underscore _ . for example, a variable named “site name” should be written as “sitename”._This convention is called snake case.

1 HOW SHOULD I NAME MY VARIABLE:

There are some rules to follow when naming python variables some of these are hard rules that must be followed, otherwise your program will not work, others are known as conventions. This means, they are more like suggestions

VARIABLE NAMING RULES

- variable names must start with a letter or an underscore_ character.
- variavle names can only contain letters, numbers, and underscores.

- variable names cannot contain spaces or special characters.

```
[ ]: my_age = 21 # valid
course = "DATA SCIENCE" # valid
TIME_PERIOD = "SIX MONTHS" # valid
print(my_age)
print(course)
print(TIME_PERIOD)
```

```
21
DATA SCIENCE
SIX MONTHS
```

VARIABLE NAMING CONVENTIONS

- variable names should be descriptive and not too short or too long.
- use lowercase letters and underscore to separate words in variables names (known as “snake_case”)

WHAT DATA TYPES CAN PYTHON VARIABLES HOLD?

One of the best features of python is its flexibility when it comes to handling various data types. Python variables can hold various data types, including integers, floats, strings, booleans, tuples and lists.

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WHAT OPERATIONS CAN BE DONE IN PYTHON USING THE VARIABLES MATHEMATICAL OPERATIONS

It's possible to perform basic mathematical operations with variables, such as addition, subtraction, multiplication, and division:

```
[ ]: # Arithmetic operations
a = 50
b = 60

sum = a + b
difference = a - b
product = a * b
quotient = a / b
print(sum,difference, product, quotient)
```

```
110 -10 3000 0.8333333333333334
```

VARIABLE SCOPE

The scope of a variable refers to the part of a program where the variable can be accessed and modified. In python, there are two main types of variable scope;

GLOBAL SCOPE

Variables defined outside of any function or class have a global scope. They can be accessed and modified throughout the program, including within functions and classes.

LOCAL SCOPE

Variables defined within a function or class have a local scope. They can only be accessed and modified within that function or class.

VALID VARIABLES

```
[1]: name = "karthik"  
     print(name)
```

karthik

```
[2]: age = 19  
     print(age)
```

19

```
[3]: fav_hobbie = "cricket"  
     print(fav_hobbie)
```

cricket

```
[4]: my_heigh_t = "5.9"  
     print(my_heigh_t)
```

5.9

```
[5]: name1 = "GOPI"  
     print(name1)
```

GOPI

```
[6]: How_are_you = "I am fine"  
     print(How_are_you)
```

I am fine

```
[8]: a = 10  
     b = 25  
     print(a + b)  
     print(a < b)  
     print(a > b)  
     print(a * b)  
     print(a - b)  
     print(a % b)  
     print(a == b)
```

```
35
True
False
250
-15
10
False
True
```

kolluri.karthik Chowdary

12157665459056928801000

100
100
100

```
('apple', 'banana', 'custard apple')
('apple', 'banana', 'custard apple')
('apple', 'banana', 'custard apple')
```

INVALID VARILABLES

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```
File "<ipython-input-19-371844cab3a4>", line 1
  3name = "karthik"
  ^
SyntaxError: invalid decimal literal
```

```
[20]: fav place = "gym"
      print(fav place)
```

```
File "<ipython-input-20-c1623b0d3790>", line 1
  fav place = "gym"
  ^
SyntaxError: invalid syntax
```

```
[21]: @my_id = "karthik@99"
      print(@my_id)
```

```
File "<ipython-input-21-cf45918d7c4c>", line 1
  @my_id = "karthik@99"
  ^
SyntaxError: invalid syntax. Maybe you meant '==' or ':=' instead of '='?
```

```
[22]: : if = "I AM LOOSER"
      print(if)
```

```
File "<ipython-input-22-347ca1b11b9b>", line 1
  : if = "I AM LOOSER"
  ^
SyntaxError: invalid syntax
```

```
[23]: def = "data science"
      print(def)
```

```
File "<ipython-input-23-f238841b4d3e>", line 1
  def = "data science"
  ^
SyntaxError: invalid syntax
```