

Python

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▼ Variables, expressions and statements

▼ Goals

By the end of this class, the student should be able to:

- Describe and distinguish the concepts of variable, location, value, type
- Identify the Python reserved words
- Describe the concepts of statement and expression
- Identify some of the Python operands and their precedence
- Use operators with suitable operands
- Describe the Python type conversion operations and use them
- Describe how to get input, at runtime, from an user of the program

A variable is a name that refers to a value

Bibliography

Lopes, João Correia. 2019. "Programming Fundamentals." 2019. <https://web.fe.up.pt/~jlopes/doku.php/teach/fpro/index>.

Severance, Charles R. 2018. "Python for Everybody (with Python 3)," 245. <https://books.trinket.io/pfe/index.html>.

▼ Variables

Adaptado de Severance 2018 e Lopes 2019

```
message = 'Hello, World!'
print(message)
type(message)
```

```
☐ Hello, World!
   str
```

```
n = 25
print(n)
type(n)
```

```
☐ 25
   int
```

```
pi = 3.14
print (pi)
type (pi)
```

```
☐ 3.14
   float
```

▼ Variable names and keywords

Variable names can contain both letters and numbers, but:

- They cannot start with a number
- It is legal to use uppercase letters, but it is a good idea to begin variable names with a lowercase letter
- The underscore character (_) can appear in a name. It is often used in names with multiple words, such as my_name or airspeed_of_unladen_swallow.
- Variable names can start with an underscore character, but we generally avoid doing this unless we are writing library code for others to use.
- Python reserved keywords cannot be used as variable names

Some Python reserves keywords:

and ; del ; from ; None ; True ; as ; elif ; global ; nonlocal ; try ; assert ; else ; if ; not ; while ; break ; except ; import ; or ; with ; class ; False ; in ; pass ; yield ; continue ; finally ; is ; raise ; def ; for ; lambda ; return

If you give a variable an illegal name, you get a syntax error:

▼ Valid names

```
name="Carlos"  
name_2 = "Maria"
```

▼ Invalid names

```
2_name="Carlos"
```

```
File "<ipython-input-8-27cd541b22ed>", line 1  
  2_name="Carlos"  
    ^  
SyntaxError: invalid token
```

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```
global = "Carlos"
```

```
File "<ipython-input-9-db895e41b5b6>", line 1  
  global = "Carlos"  
    ^  
SyntaxError: invalid syntax
```

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