



LISBON
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PYTHON BASICS

(ACADEMIC YEAR: 2019/2020)

- Learning Objectives
- First Program
- Types
- Expression and variables
- String Operations
- Exercises

Learning Objectives

- Understand how to interact with a program
- Know the main basic data types
- Know how to create and manipulate variables
- String Operations

First Program

- `Print("Hello! I am here!")`

Types

- Integer
- Float
- Complex
- String
- Boolean

Expression and variables

- One of the most powerful features of a programming language is the ability to manipulate **variables**.
- A variable is a name that refers to a value.
- Variable is a space memory used to store values

Expression and variables

- A **statement** is an instruction that the Python interpreter can execute.
- Example of statements: print and assignment

Expression and variables

- **Operators** are special symbols that represent computations like addition and multiplication.
- The values the operator uses are called **operands**.

Expression and variables

- 4 Basic Operations

+ - / *

- Remainder

%

- Power

**

- Other operations:

+=, -=, *=, /= %= %=, **=

Expression and variables

- Comparison operations

>

<

==

>=

<=

<>, !=

is

in

Expression and variables

- Logical operators:

And

Or

Not

- Setting operator:

=

Expression and variables

- There are two built-in functions in Python for getting keyboard input:

```
n = raw_input("Please enter your name: ")
```

```
print n
```

```
n = input("Enter a numerical expression: ")
```

```
print n
```

String Operations

- Substitution

%

Example:

```
print ("Hoje é %02d/%02d/%03d" % (26, 2, 2019))
```

- Concatenation

+

- Data type

Type(a)

String Operations

- length of a string in characters

```
len(a)
```

- Lower

```
a.lower()
```

- Upper

```
a.upper()
```

- Delete space

```
a.strip()
```

- Replace characters in a string

```
a.replace("M", "B")
```



Exercises

- Calculate the interest earned by an investor that invested a capital of 200 during 3 years with an interest rate of 3%. (simple interest)
- Capital that an investor obtained after investing a capital of 200 during 3 years with an interest rate of 3%. (Compound interest)
- Calculate your BMI (Body Mass Index)
- Calculate the Golden ratio