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# PYTHON BASICS



LISBON  
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# Learning Objectives

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



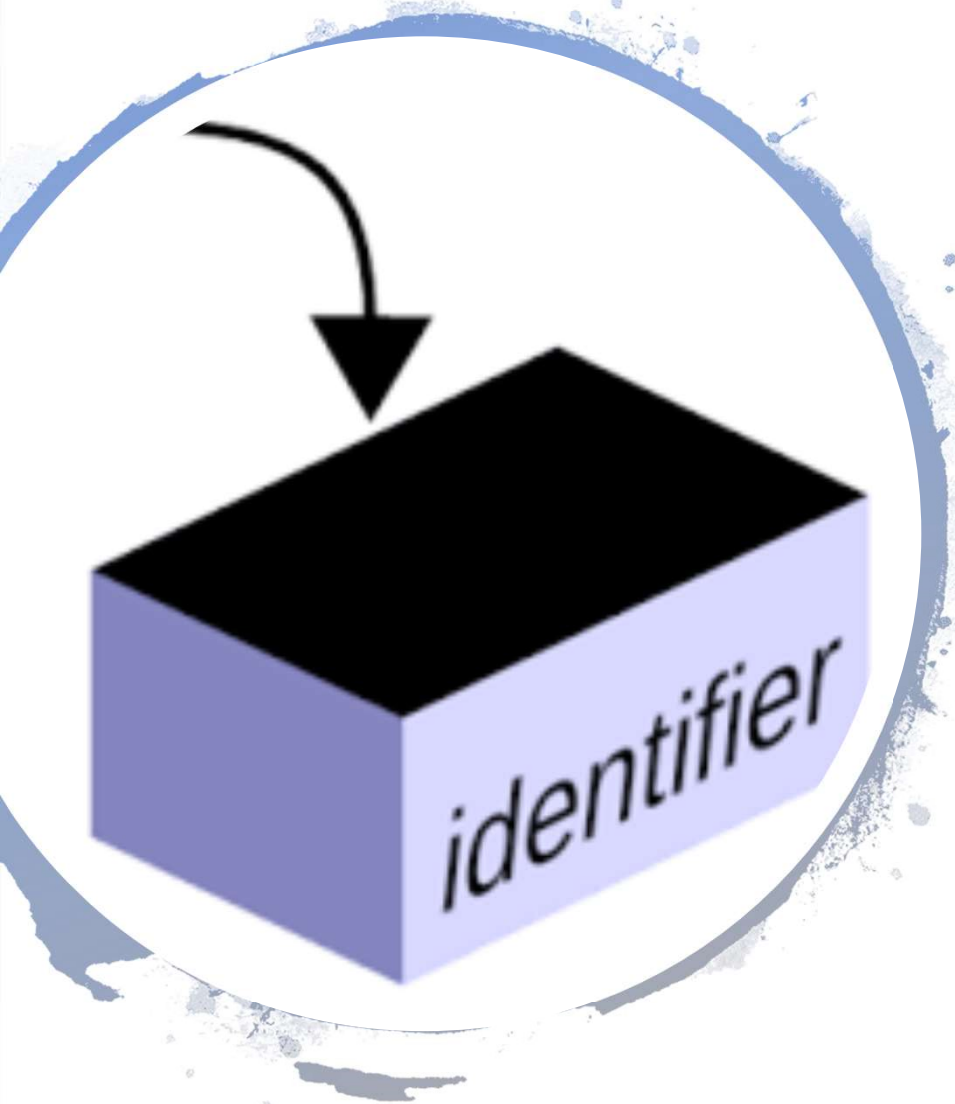
# A Simple Program

- Code:

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

- Result

```
Hello! I am here!
```



# 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

# Types

- **Integer**
- Float
- String
- Boolean





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# Statement

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

# Operator

Operators are special symbols that represent computations like addition and multiplication.

The values the operator uses are called operands.

# Operators

## 4 Basic Operations

+ - / \*

## Remainder

%

## Power

\*\*

## Other operations:

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



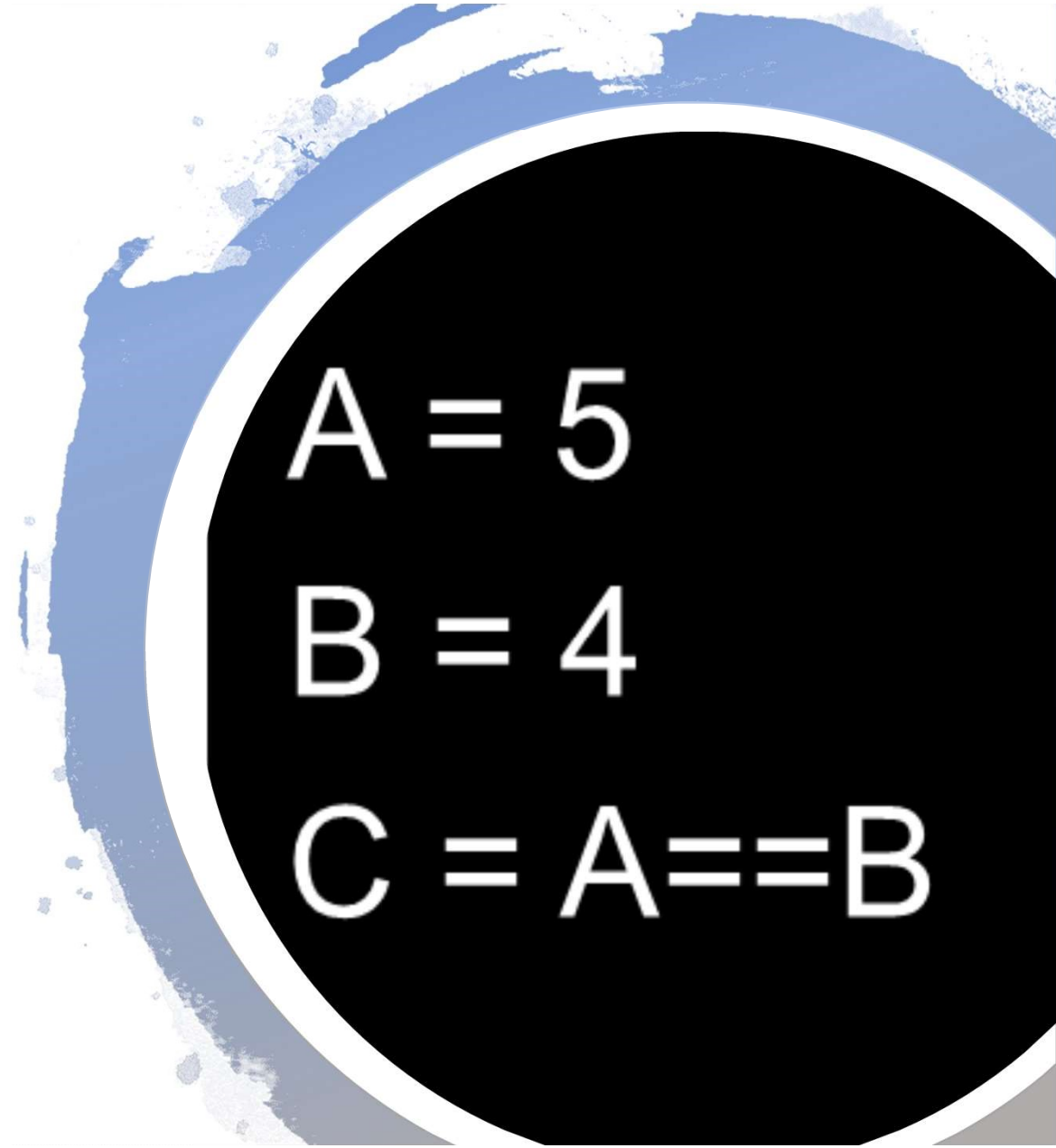


## Conditional expressions and Comparison operations

- Conditional Expression:  
 $4 > 2$
- Comparison operations
  - >
  - <
  - ==
  - <>, !=
  - >=
  - <=
  - is
  - in

# Logical and setting Operators

- Logical operators:
  - And
  - Or
  - Not
- Setting operator:
  - =



A = 5

B = 4

C = A == B

# Input and Output Functions

- 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 ("Today is %02d/%02d/%03d" % (26, 2, 2019))`
- Concatenation  
+
- Data type  
Type(variable)





# String Operations

- What is the type of n?

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

# String Operations

- What is the type of n?

```
n = input("Enter a numerical expression: ")  
print (n)  
floatNumber=float(n)  
intNumber=int(n)
```

# 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")`

# Comments

- Several lines

'''

Comment

'''

# comment

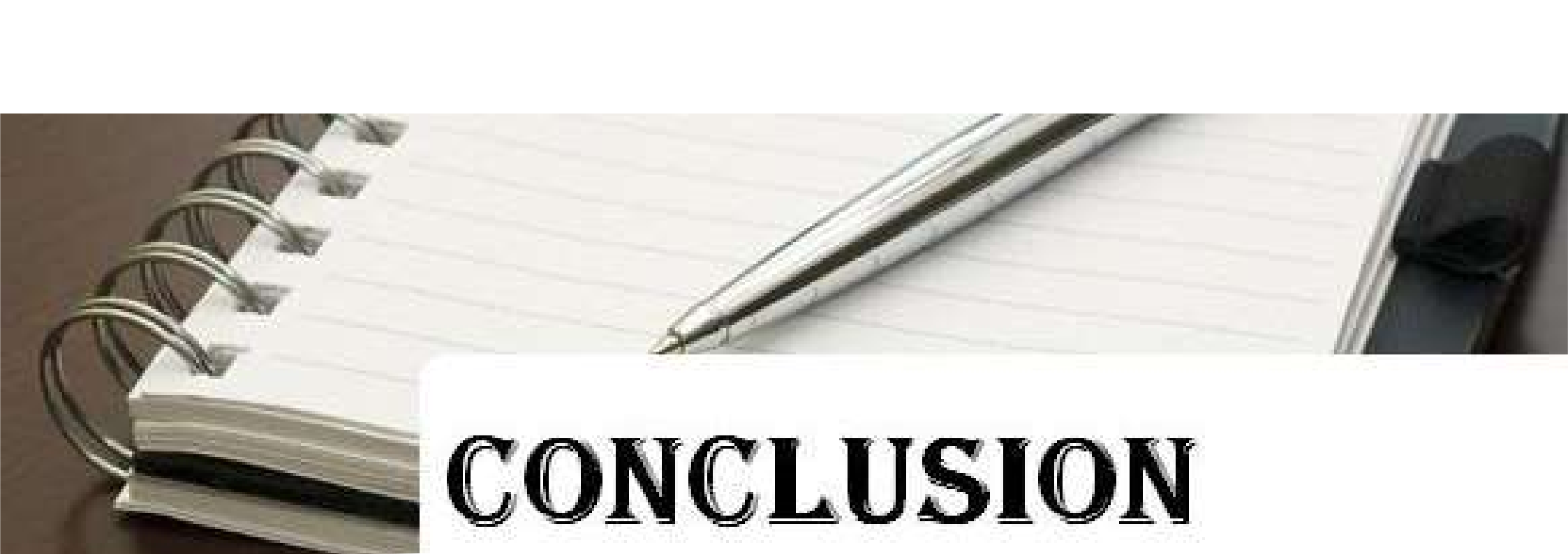


# Exercises

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- 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



A photograph of a spiral-bound notebook with a silver pen resting on it. The notebook is open, showing lined pages. The pen is a silver ballpoint pen, lying diagonally across the pages. The background is a dark, solid color.

# CONCLUSION

- First Program
- Types
- Expression and variables
- String Operations