

# *Introdução ao Processamento de Dados*

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**`http://github.com/fsantanna/IPD`**

# Processamento de Dados



# “Hello world!”

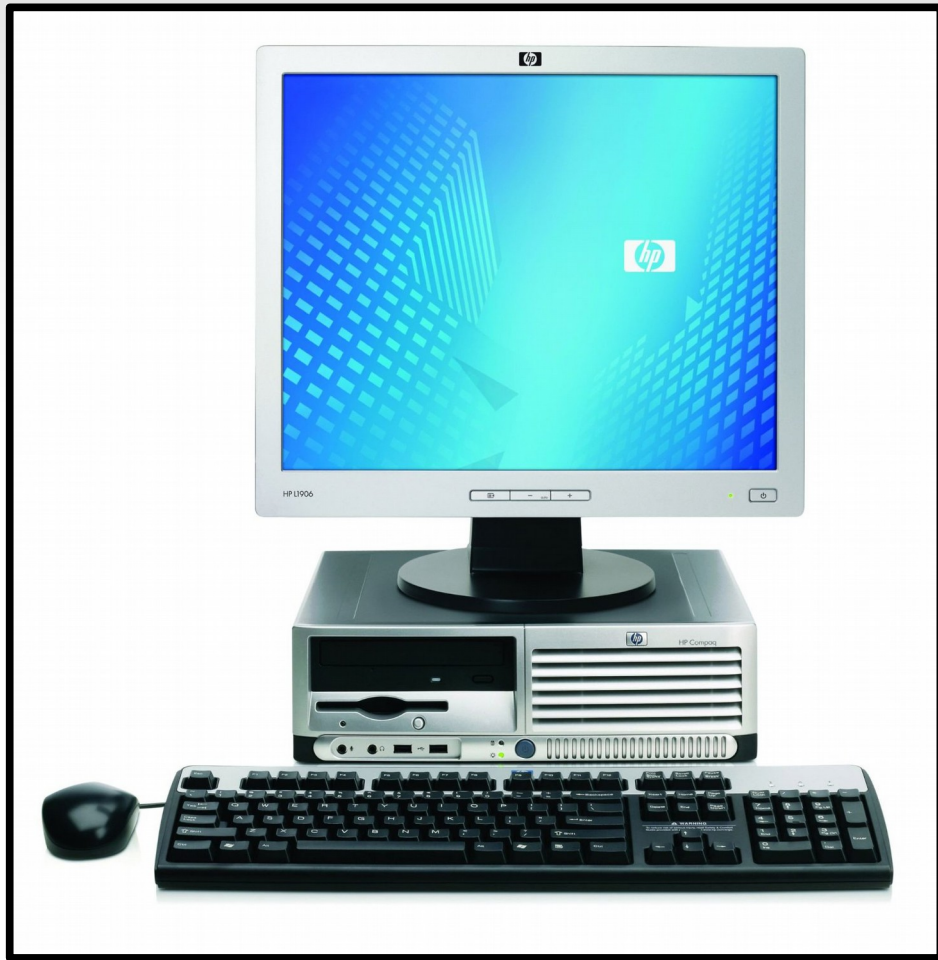
```
print("Oi Mundo!")
```

```
frase = raw_input()  
print("----")  
print(frase)
```

```
frase = raw_input()  
print("----")  
for i in range(1,5):  
    ← print(i, frase)  
print("----")
```

Indentação

# Computador???



# Dispositivos de Entrada e Saída (I/O)

## PERIFÉRICOS DO COMPUTADOR

### 1 - DE ENTRADA (INPUT):



TECLADO



Mouse



Joystick



Webcam



microfone



Scanner



Mesa Digitalizadora

### 2 – DE SAÍDA (OUTPUT):

MONITOR

CRT



Cristal Líquido



LCD



Projektor Multimídia



Impressora



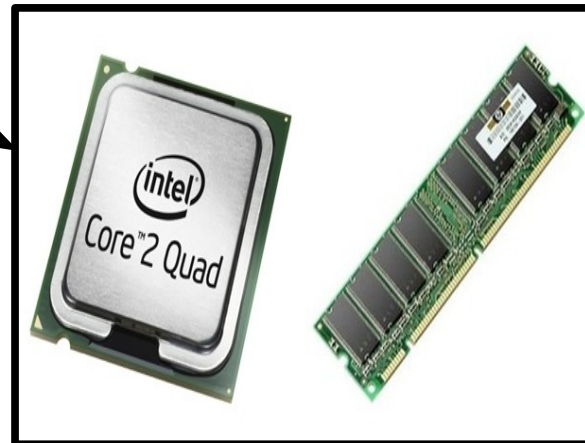
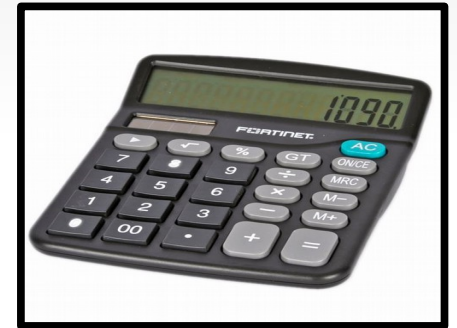
Caixas de som



# Dispositivos de Entrada e Saída (I/O)



# Computador???





# Computador é Programável

**Hardware + Software**



# Hardware vs Software

The main difference between hardware and software are as follows:

## Hardware

1. Physical parts of the computer are called hardware.
2. You can touch, see and feel hardware.
3. Hardware is constructed using physical materials or components.



4. **Software é o que você xinga, hardware o que você chuta**

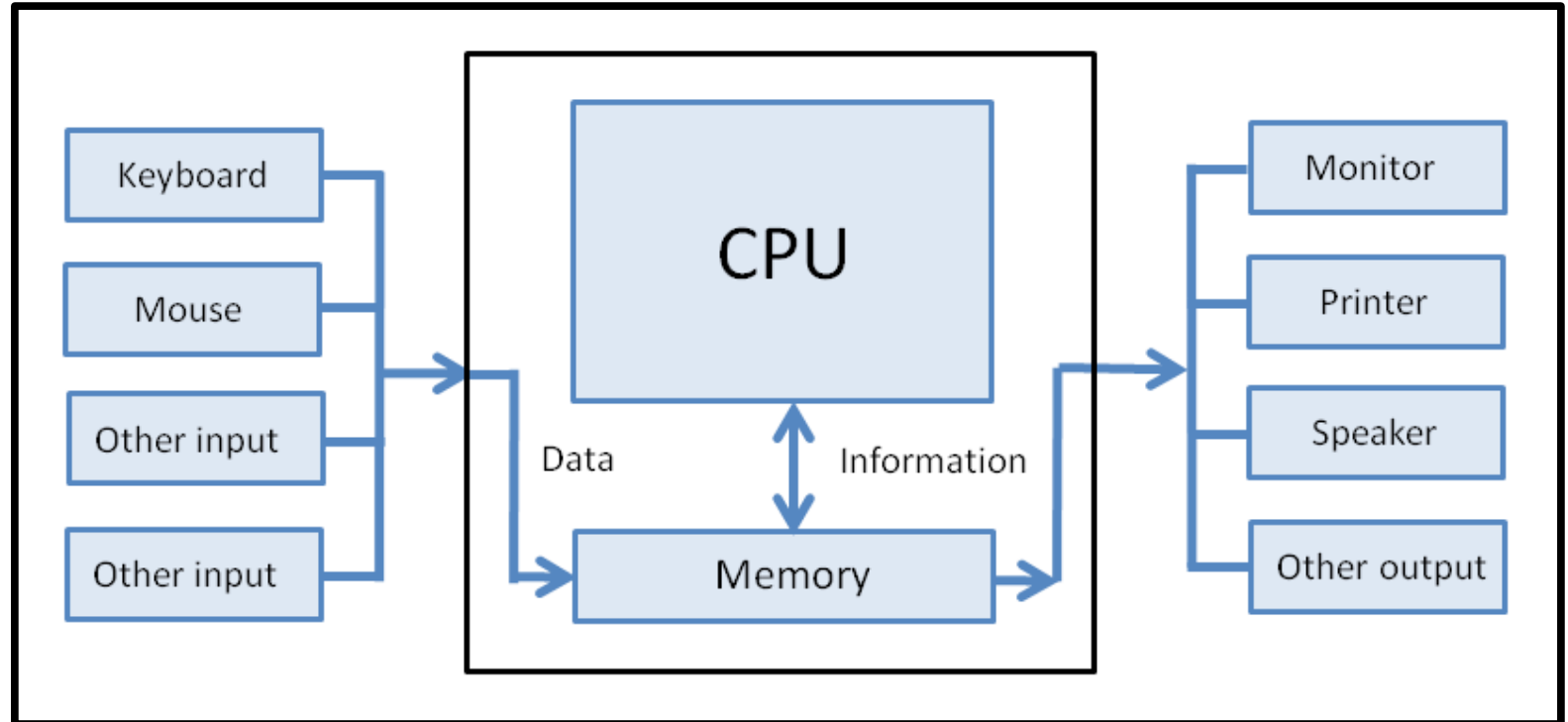
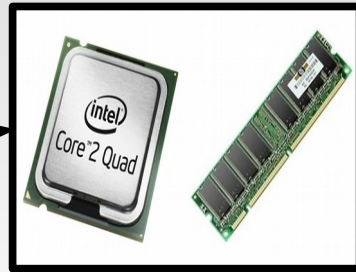
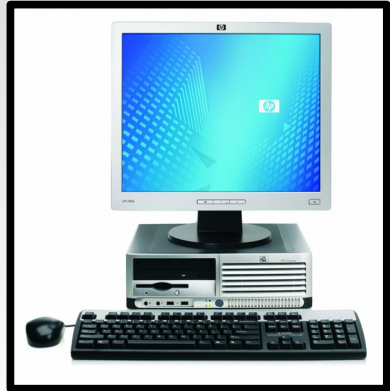
- 5.
- 6.
7. Hardware cannot be transferred from one place to another electronically through network.
8. User cannot make new duplicate copies of the hardware.

## Software

1. A set of instructions given to the computer is called software.
2. You cannot touch and feel software.
3. Software is developed by writing instructions in programming language.
4. The operations of computer are controlled through software.
5. If software is damaged or corrupted, its backup copy can be reinstalled.
6. Software is affected by computer viruses.
7. Software can be transferred from one place to another electronically through network.
8. User can make many new duplicate copies of the software.

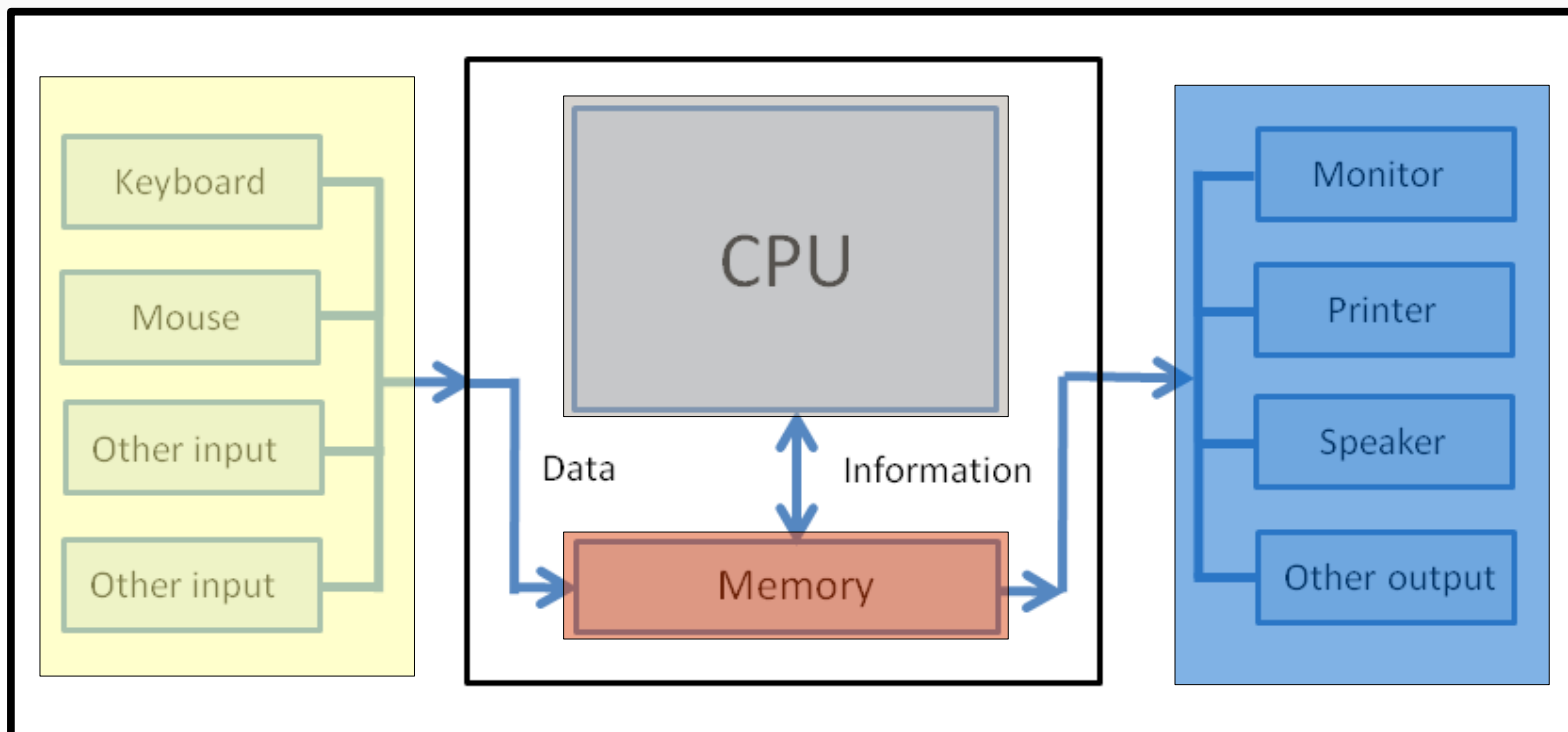


# Computador!



# “Hello world!”

```
frase = raw_input()  
print("----")  
for i in range(1,5):  
    print(i, frase)
```



# Software

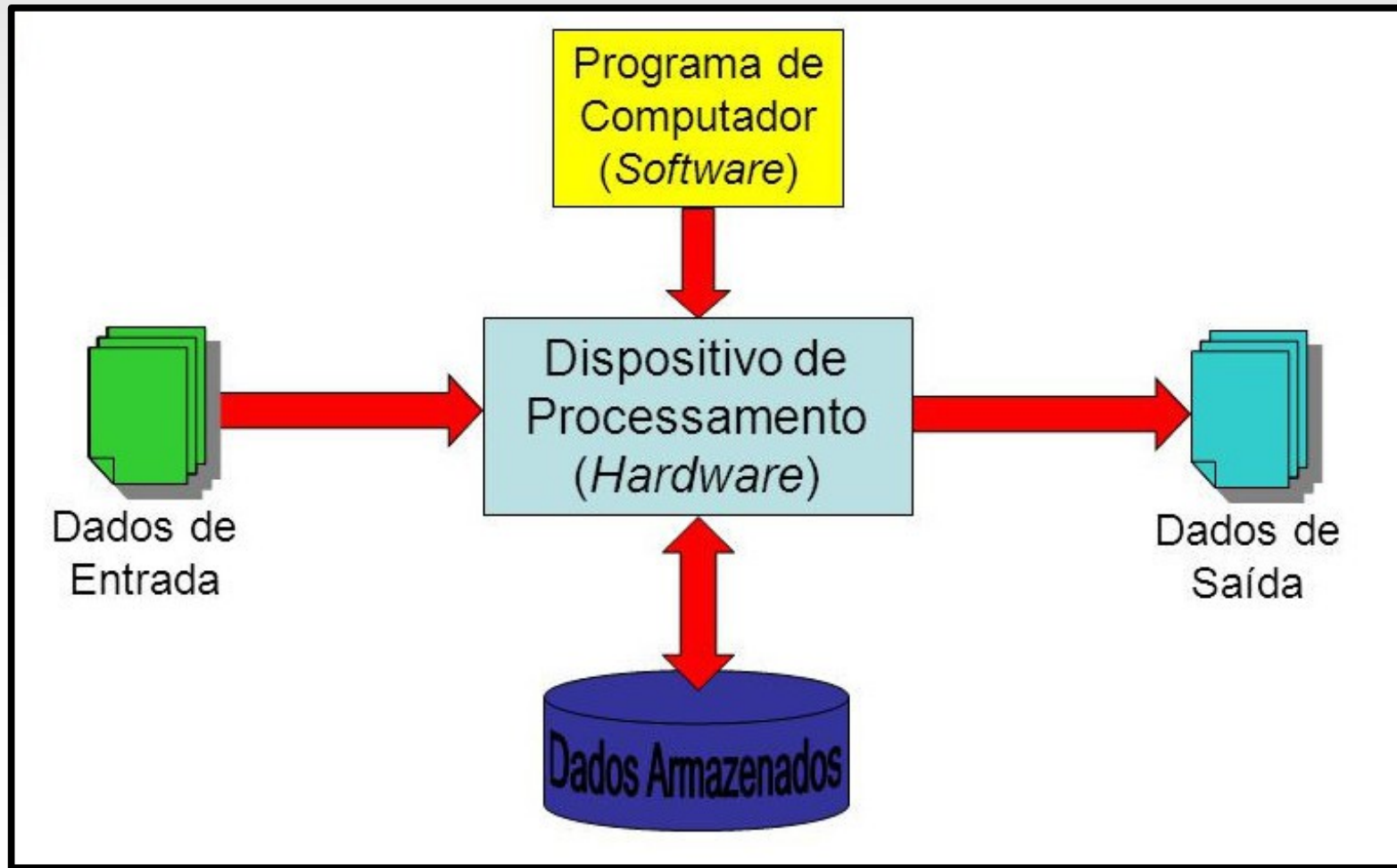
- Sistemas Operacional
- Linguagem de Programação
- Sistemas de Rede

**Software Básico**

- Photoshop
- Word, Excel
- Firefox
- Jogos

**Software Aplicativo**

# Processamento de Dados



# Linguagem de Programação

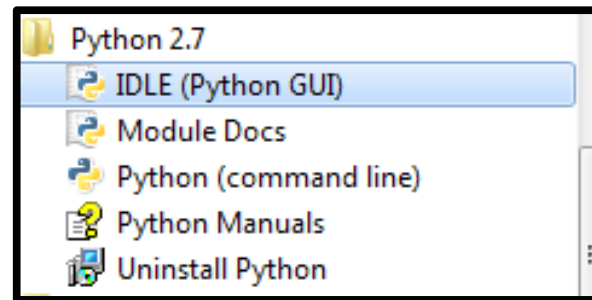
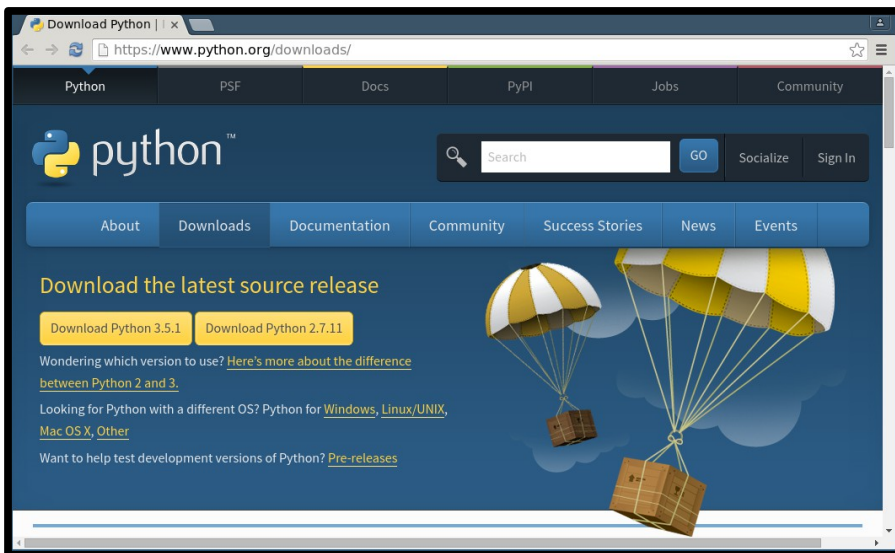
- Um programa que *reconhece* e executa programas
  - (compilador ou interpretador da linguagem)
- *Sintaxe (forma)* e Semântica (significado)
  - (a linguagem)
- Abstração sobre o computador
- C, C++, Java, PHP, JavaScript, **Python**

```
# Python
frase = raw_input()
print("----")
for i in range(1,5):
    print(i, frase)
print("----")
```

```
// C
#include <stdio.h>
int main (void) {
    char frase[255];
    scanf("%s", frase);
    printf("----\n");
    int i;
    for (i=1; i<5; i++) {
        printf("%d %s\n", i, frase);
    }
    printf("----\n");
    return 0;
}
```

# Python

- Download 2.7.\*
  - [www.python.org/downloads](http://www.python.org/downloads)
- Instalar o arquivo baixado
  - <https://www.python.org/ftp/python/2.7.11/python-2.7.11.msi>
- Executar o “IDLE”



anim.gif



# Exemplo Real

- Lista com preços de ingressos
- Quero calcular o custo total
- Quero calcular a média

B	C
60	
35	
130	
50	
15	
290	58
SUM(B2:B6)	AVERAGE(B2:B6)

Column name    Lead value

↙                      ↘

	A	B	C	D
1	x	y		
2	1	1		
3	2	4		
4	3	9		
5	4	16		
6	5	25		

↗                      ↖

Written column

VBA Code ↗

```
Option Explicit
Sub sq()
    Dim n As Integer
    Dim j As Integer
    Dim z As Variant
    'Count size of array
    n = Range("x").Count
    'Do loop
    For j = 1 To n
        z = Range("x").Cells(j).Value
        Range("y").Cells(j).Value = z * z
    Next j
End Sub
```

- Ler preços com “input”?

# Linguagens para Aplicações

Column name    Lead value

Excel: finanças,

	A	B
1	x	y
2		1
3		2
4		3
5		4
6		5

Written column

VBA Code

MatLAB803.vi Diagram

File Edit Operate Tools Browse Window Help

13pt Application Font

MatLab: comput

MathscriptNode.vi Block Diagram

File Edit View Project Operate Tools Window Help

13pt Application Font

Untitled0

Model Layout Layout

AutoCAD: ar

Ps Ai

## ExtendScript Toolkit

Extend Photoshop and Illustrator with custom commands

JavaScript Console

ExtendScript Toolkit CS6

Photoshop: processamento de imagens