

# *Introdução ao Processamento de Dados*

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

# Processamento de Dados



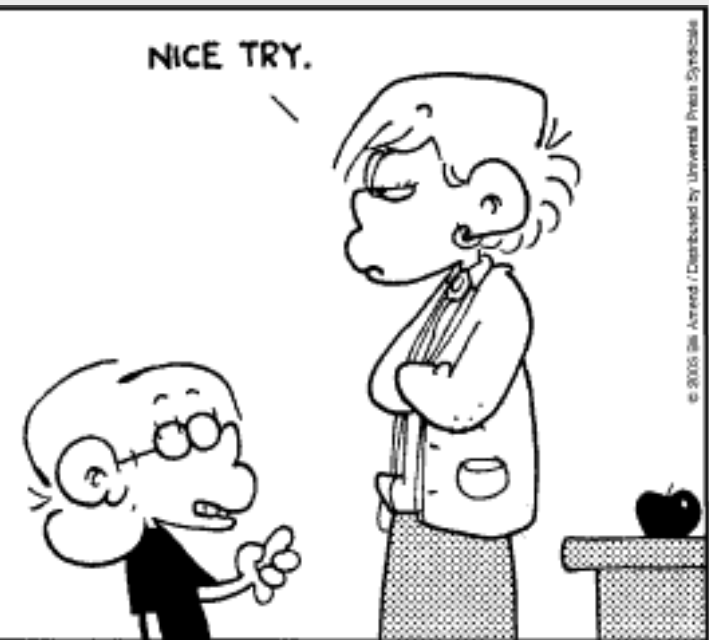
# "Hello world!"

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

```
#include <stdio.h>
int main(void)
{
    int count;

    for(count = 1; count <= 500; count++)
        printf("I will not throw paper airplanes in class.");
    return 0;
}
```

ANEND 10-3

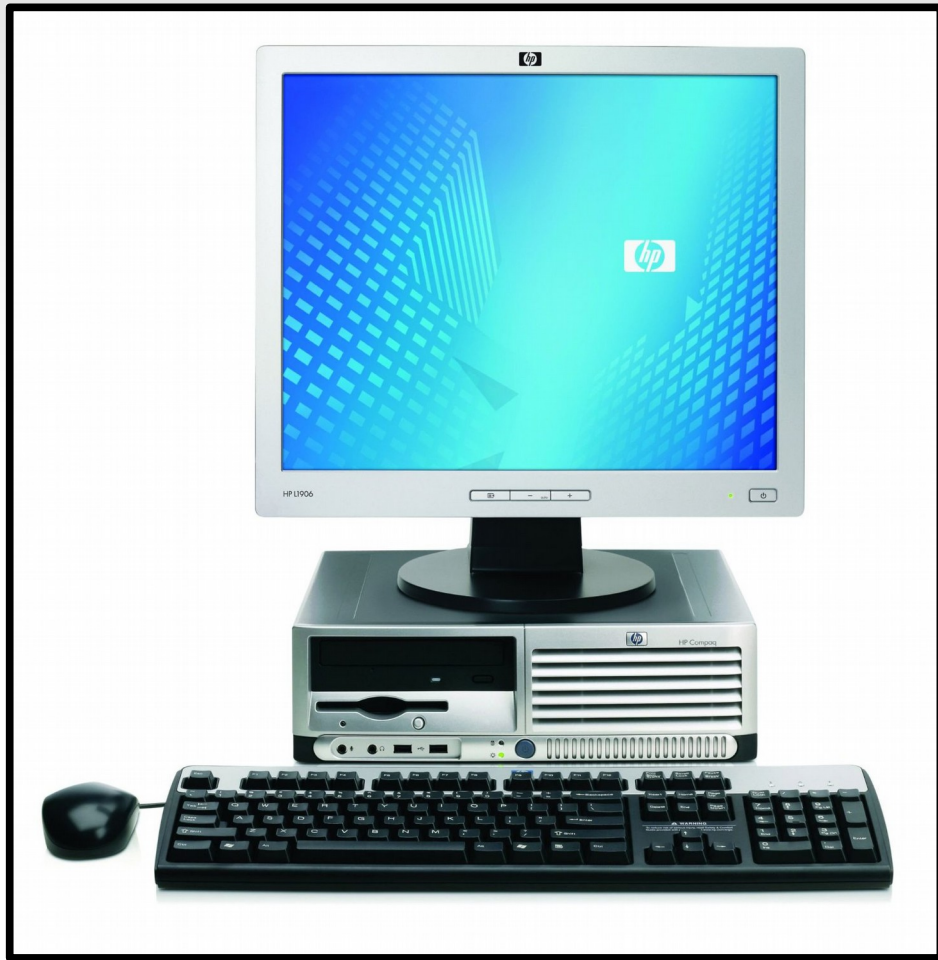


```
print("----")
```

Indentação

variação

# 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



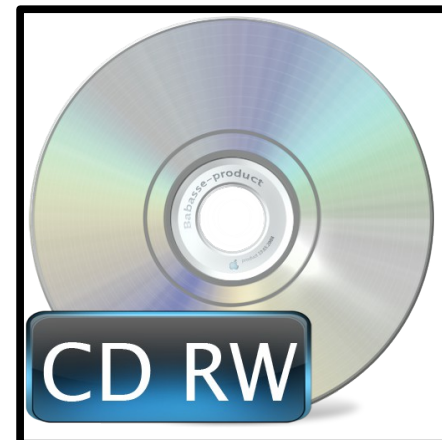
Impressora



Caixas de som

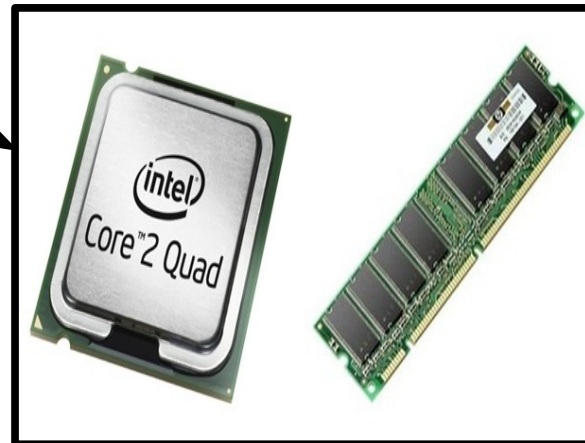
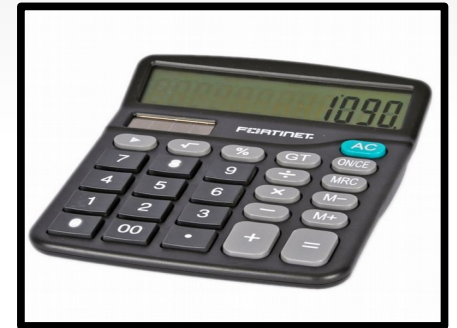


# Dispositivos de Entrada e Saída (I/O)





# 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**

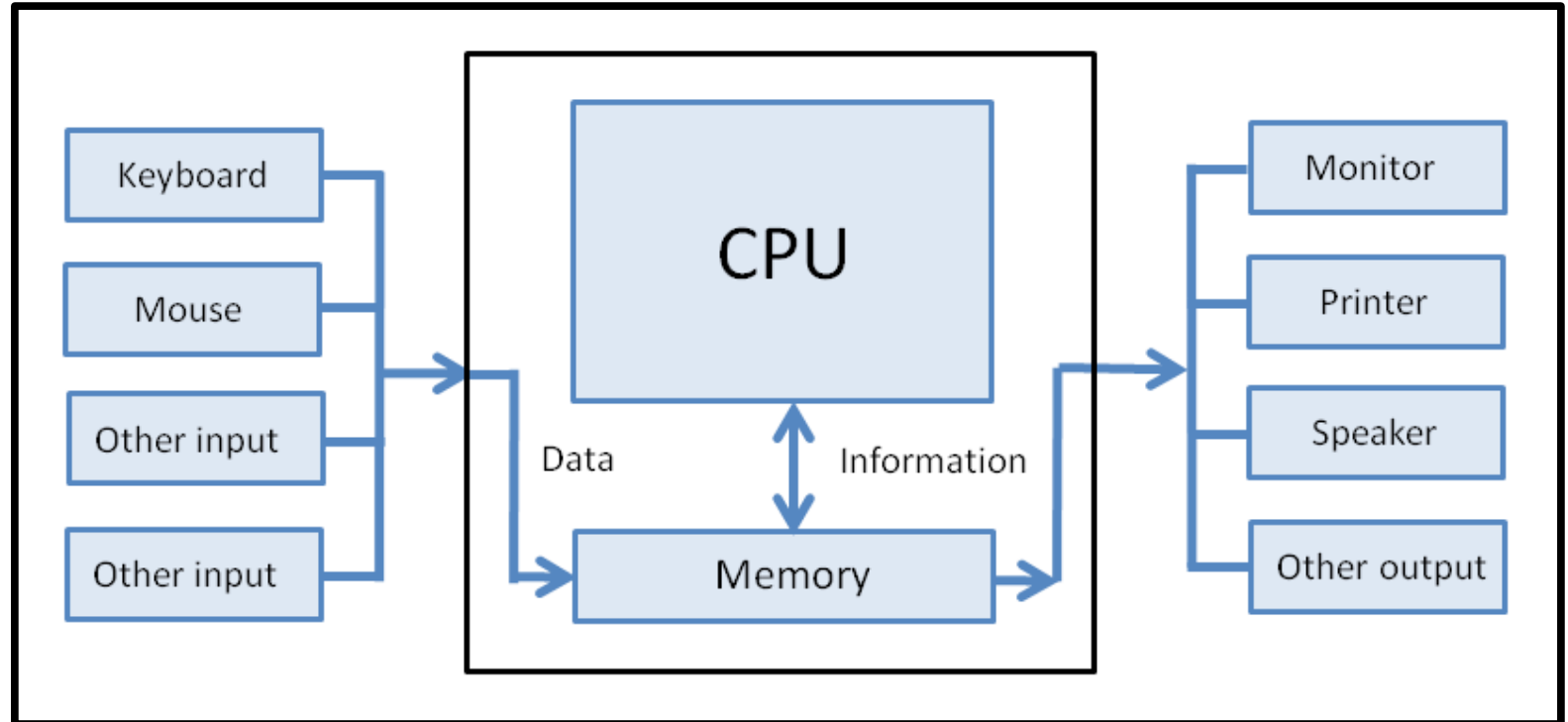
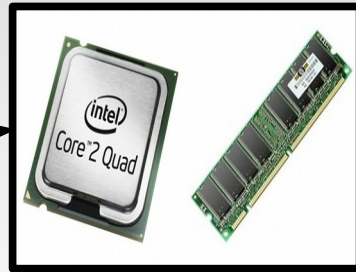
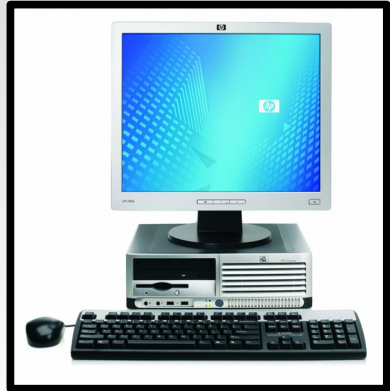
- 5.
- 6.
7. Hardware cannot be transferred from one place to another electronically through network.
8. User cannot make new duplicate copies of the hardware.

## Software

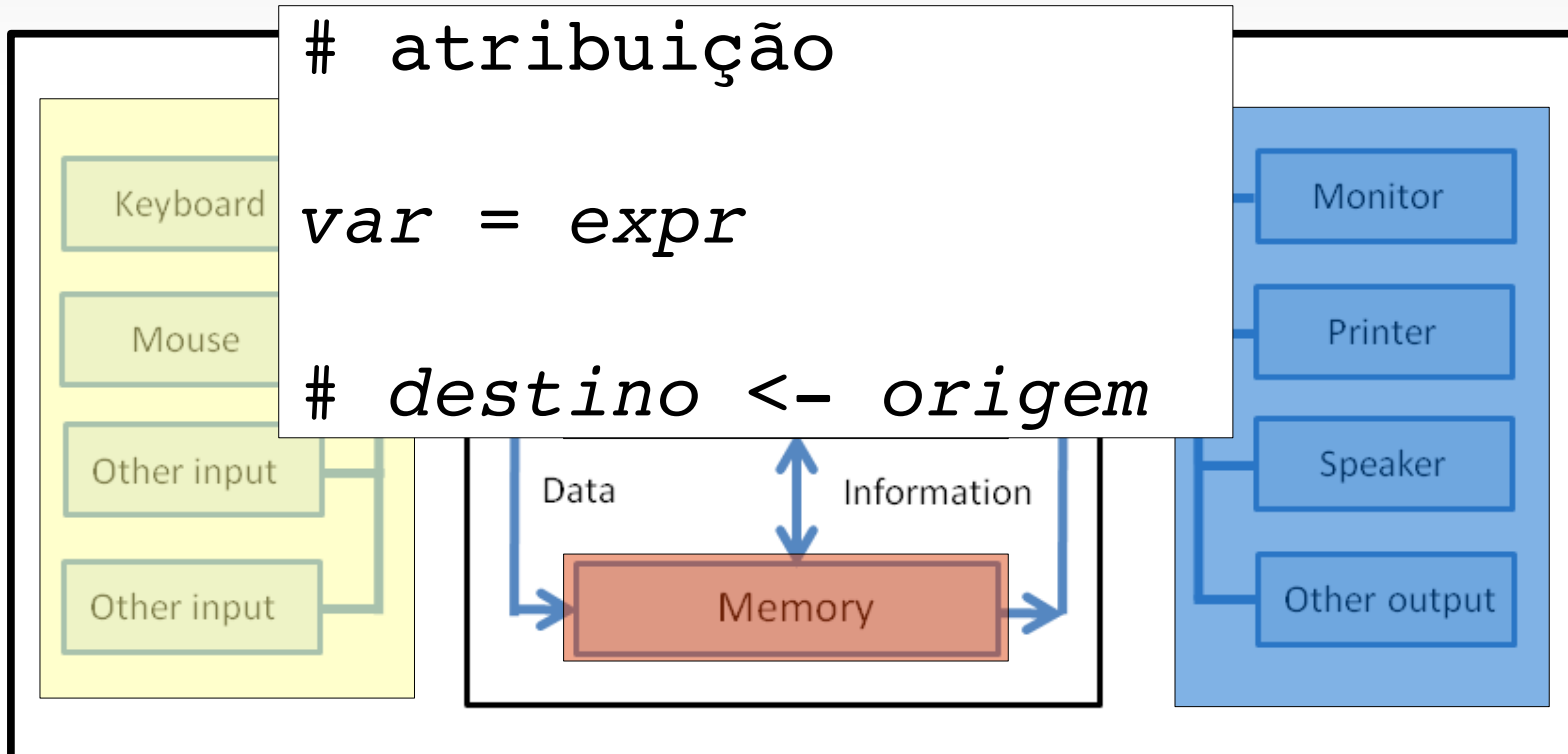
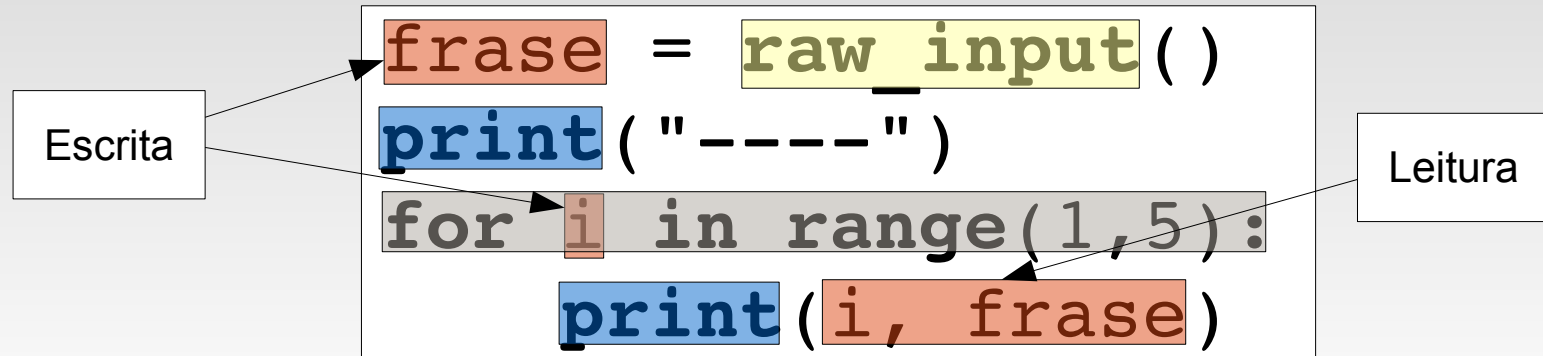
1. A set of instructions given to the computer is called software.
2. You cannot touch and feel software.
3. Software is developed by writing instructions in programming language.
4. The operations of computer are controlled through software.
5. If software is damaged or corrupted, its backup copy can 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!"



# Software

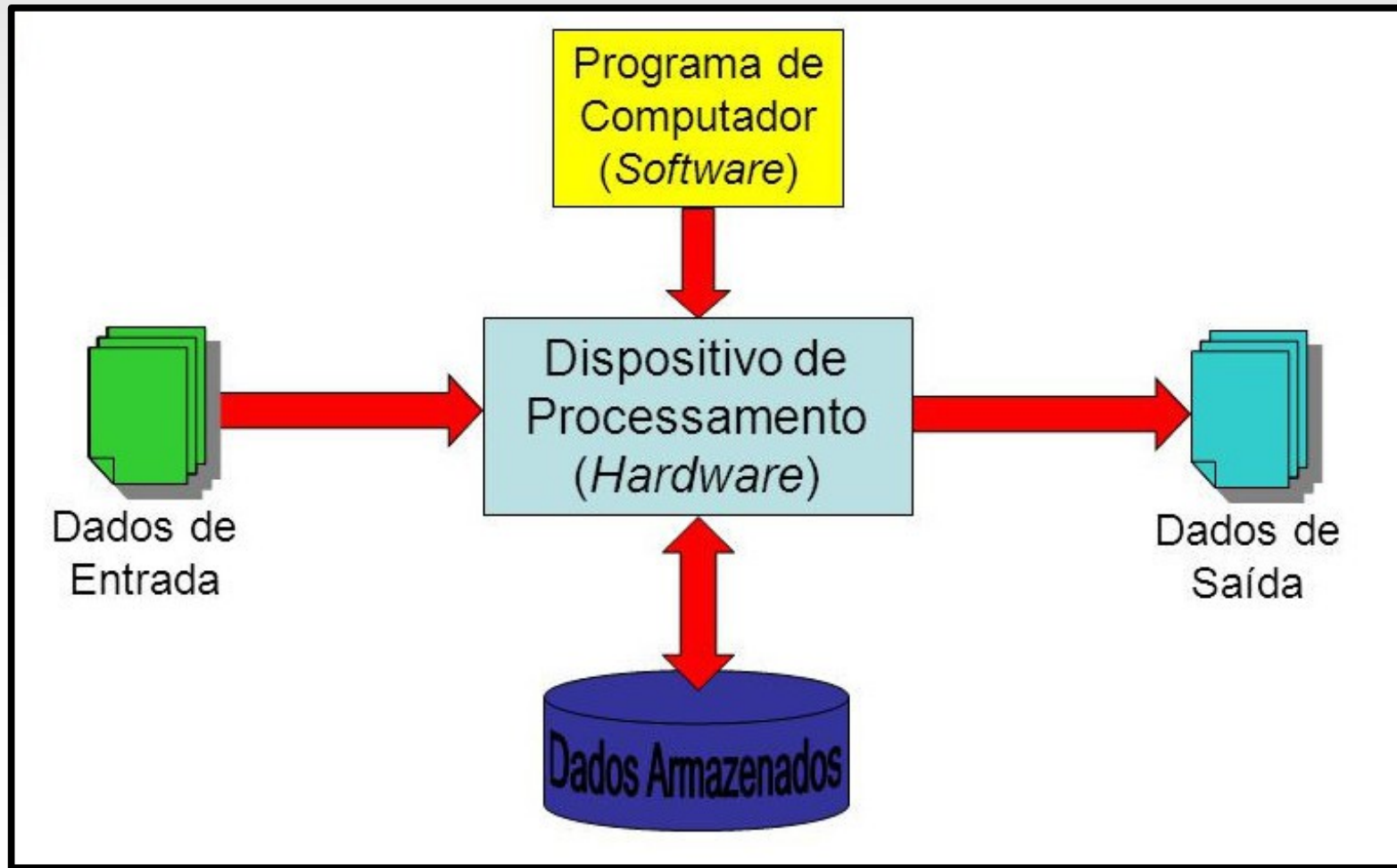
- Sistemas Operacional
- Linguagem de Programação
- Sistemas de Rede

**Software Básico**

- Photoshop
- Word, Excel
- Firefox
- Jogos

**Software Aplicativo**

# Processamento de Dados



# Linguagem de Programação

- De quem pra quem?
  - tradutor
- Um programa que *reconhece* e executa programas
  - (compilador ou interpretador da linguagem)
- *Sintaxe (forma)* e Semântica (significado)
  - (a linguagem)

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

con  
, Ja

```
// 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;
}
```

# Sintaxe vs Semântica

Are semantics and s... x +

← stackoverflow.com/questions/209979/are-semantics-anc ↻ g Google 🔍 ☆ 📁 ⬇ 🏠 ☰

▲  
65  
▼

✓


Syntax is the grammar. It describes the way to construct a correct sentence. For example, *this water is triangular* is syntactically correct.

Semantics relates to the meaning. *this water is triangular* does not mean anything, though the grammar is ok.

Talking about the [semantic web](#) has become trendy recently. The idea is to enhance the markup (structural with HTML) with additional data so computer could make sense of the web pages more easily.

share improve this answer

answered Oct 16 '08 at 19:57

 **Christian Lescuyer**  
11.3k ● 2 ● 33 ● 37



# *Sintaxe* vs Semântica

- *Sintaxe* diferente, Semântica igual

```
chico@note:~$ lua
Lua 5.1.5 Copyright (C) 1994-2012 Lua.org, PUC-Rio
> list = { 1, 2, 3 }
> print(#list)
3
>

chico@note:~$ python3
Python 3.4.3 (default, Oct 14 2015, 20:28:29)
[GCC 4.8.4] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> list = [ 1, 2, 3 ]
>>> print(len(list))
3
>>>
```

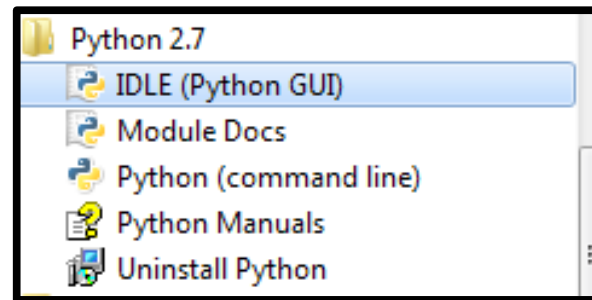
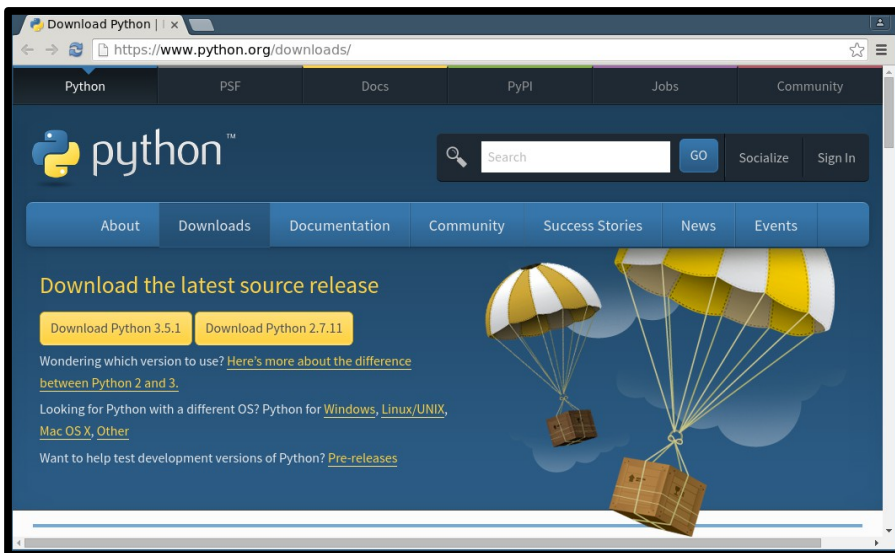
- *Sintaxe* igual, Semântica diferente

```
chico@note:~$ python2
Python 2.7.6 (default, Mar 22 2014, 22:59:56)
[GCC 4.8.2] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>> 1/2
0
>>>

chico@note:~$
chico@note:~$
chico@note:~$ python3
Python 3.4.3 (default, Oct 14 2015, 20:28:29)
[GCC 4.8.4] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> 1/2
0.5
>>>
```

# 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)

- (*Erro de Sintaxe*)
- Ex. Ler preços com “input”?

# Linguagens para Aplicações

Column name    Lead value    Excel:   
 y    x    1    2    3    4    5    6

MatLAB803.vi Diagram

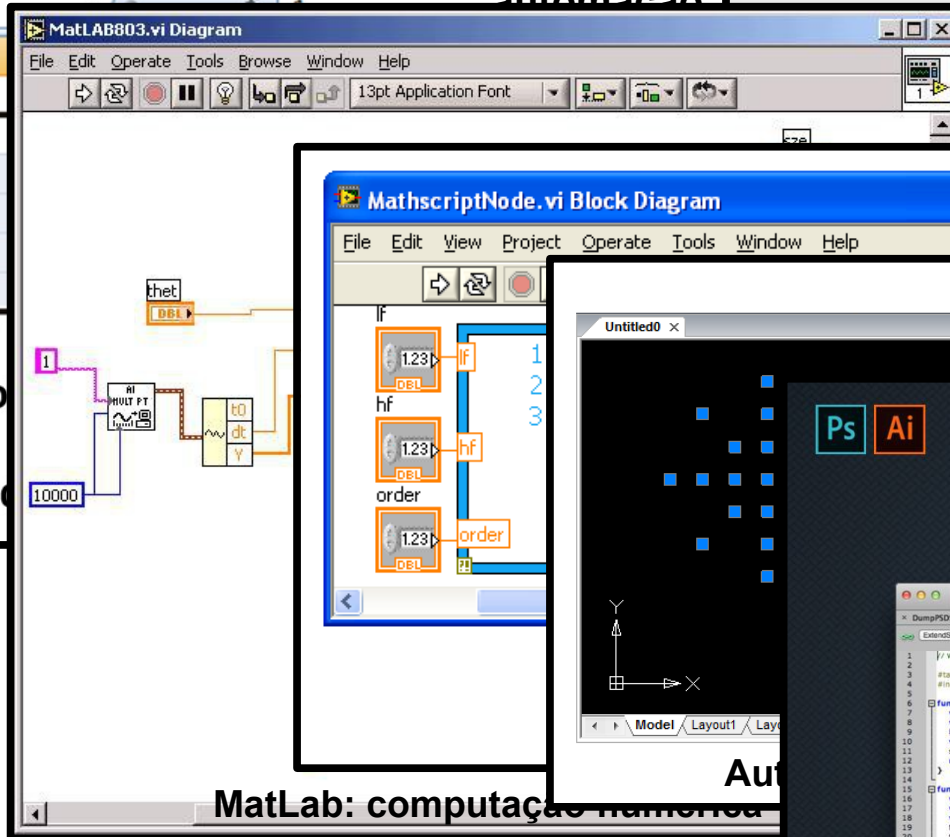
File Edit Operate Tools Browse Window Help

13pt Application Font

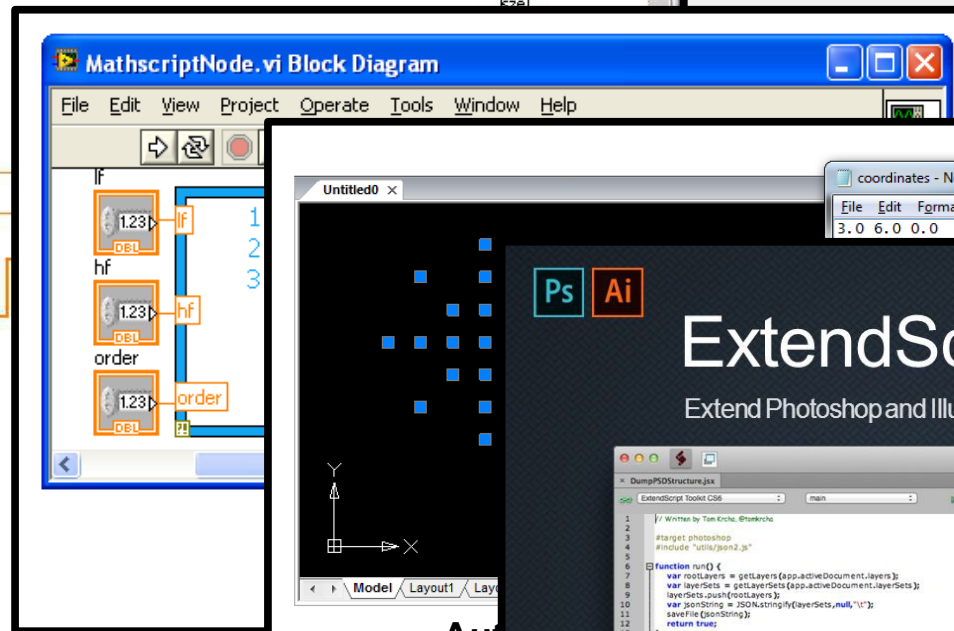
MathscriptNode.vi Block Diagram

File Edit View Project Operate Tools

Written co  
VBA Cod



## MatLab: computação numérica



Au

