

Introdução ao Processamento de Dados

Francisco Sant'Anna

`francisco.santanna@gmail.com`

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

Processamento de Dados



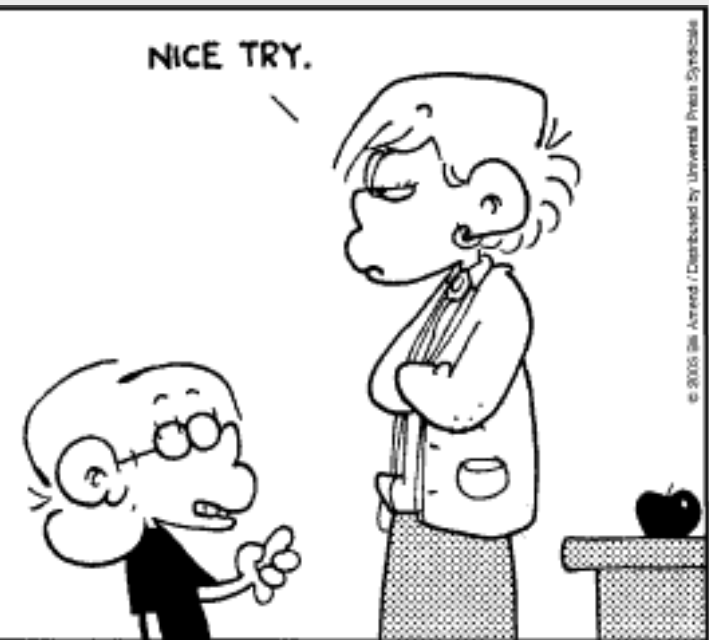
“Hello world!”

```
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

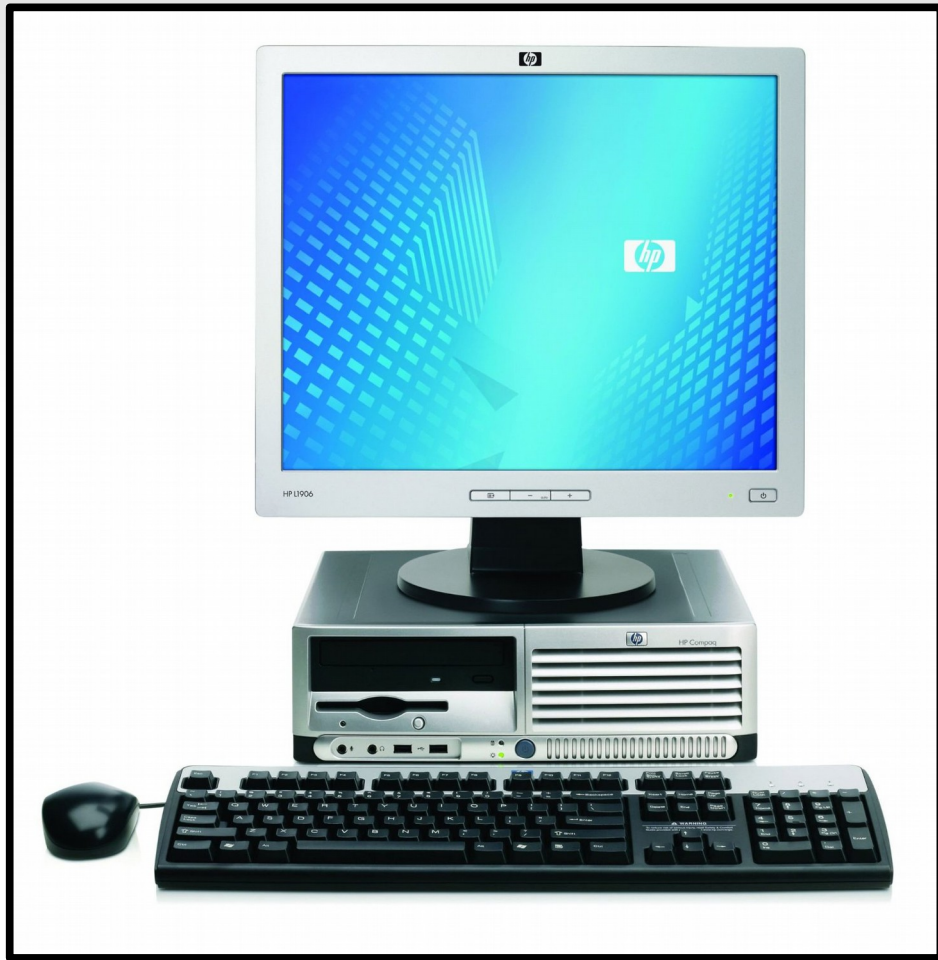


```
print("----")
```

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



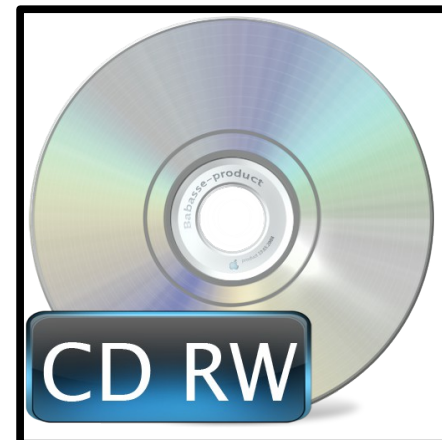
Impressora



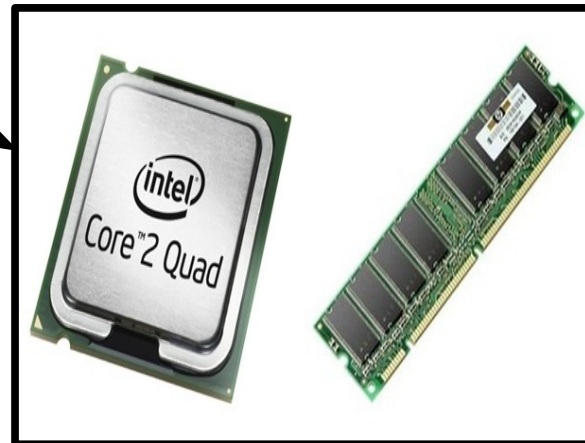
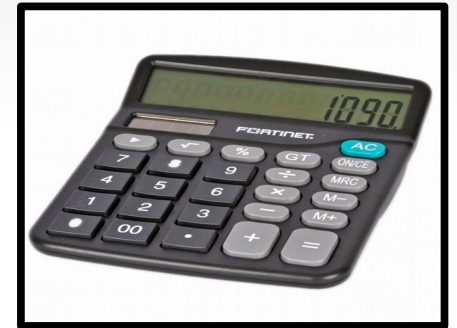
Caixas de som



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.



Software é o que você xinga, hardware o que você chuta

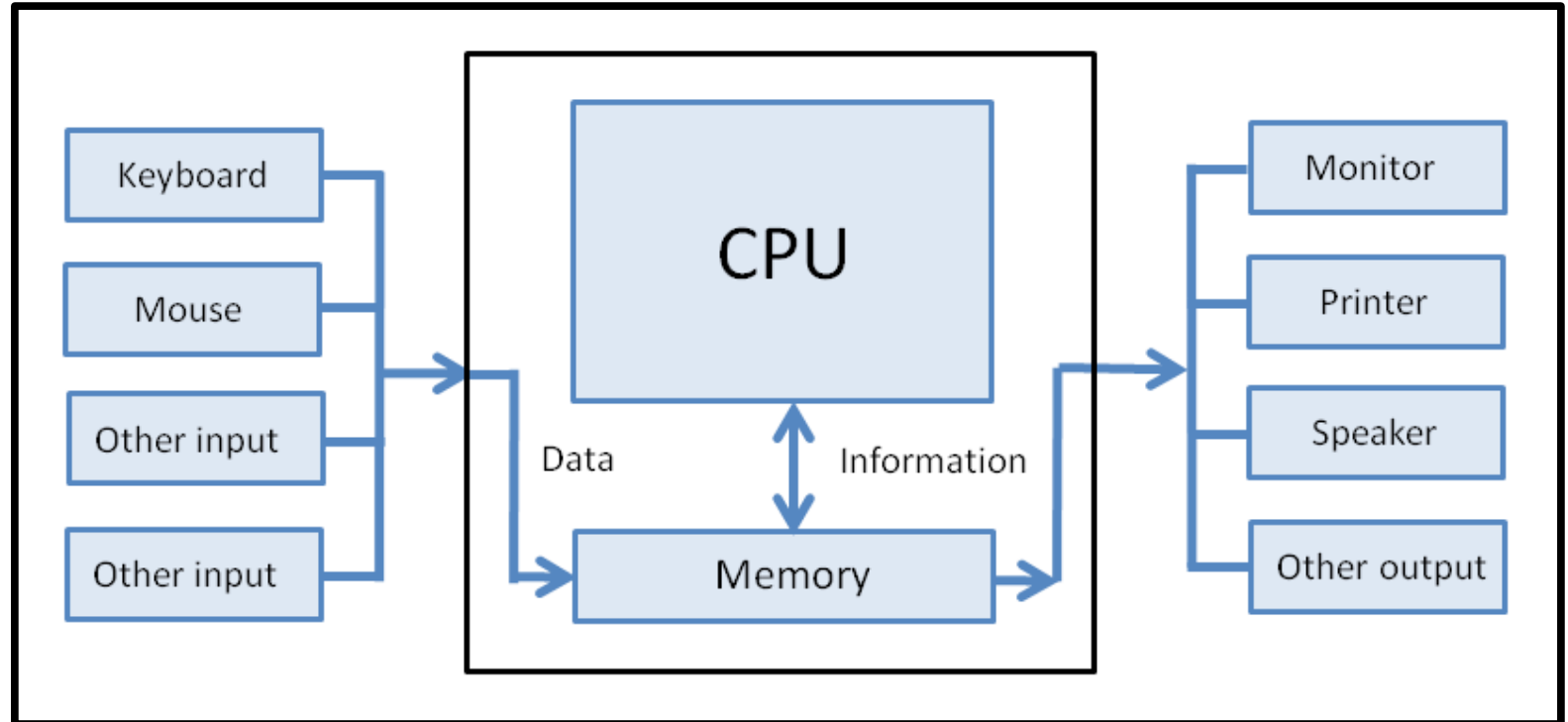
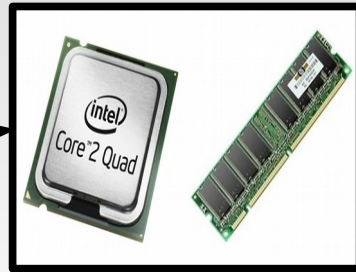
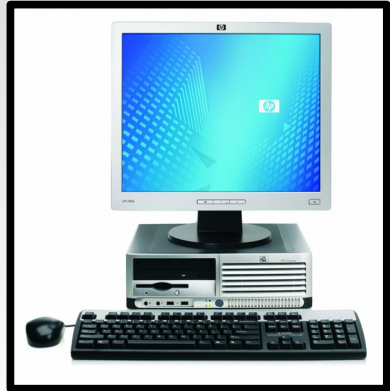
- 4.
- 5.
- 6.
7. Hardware cannot be transferred from one place to another electronically through network.
8. User cannot make new duplicate copies of the hardware.

Software

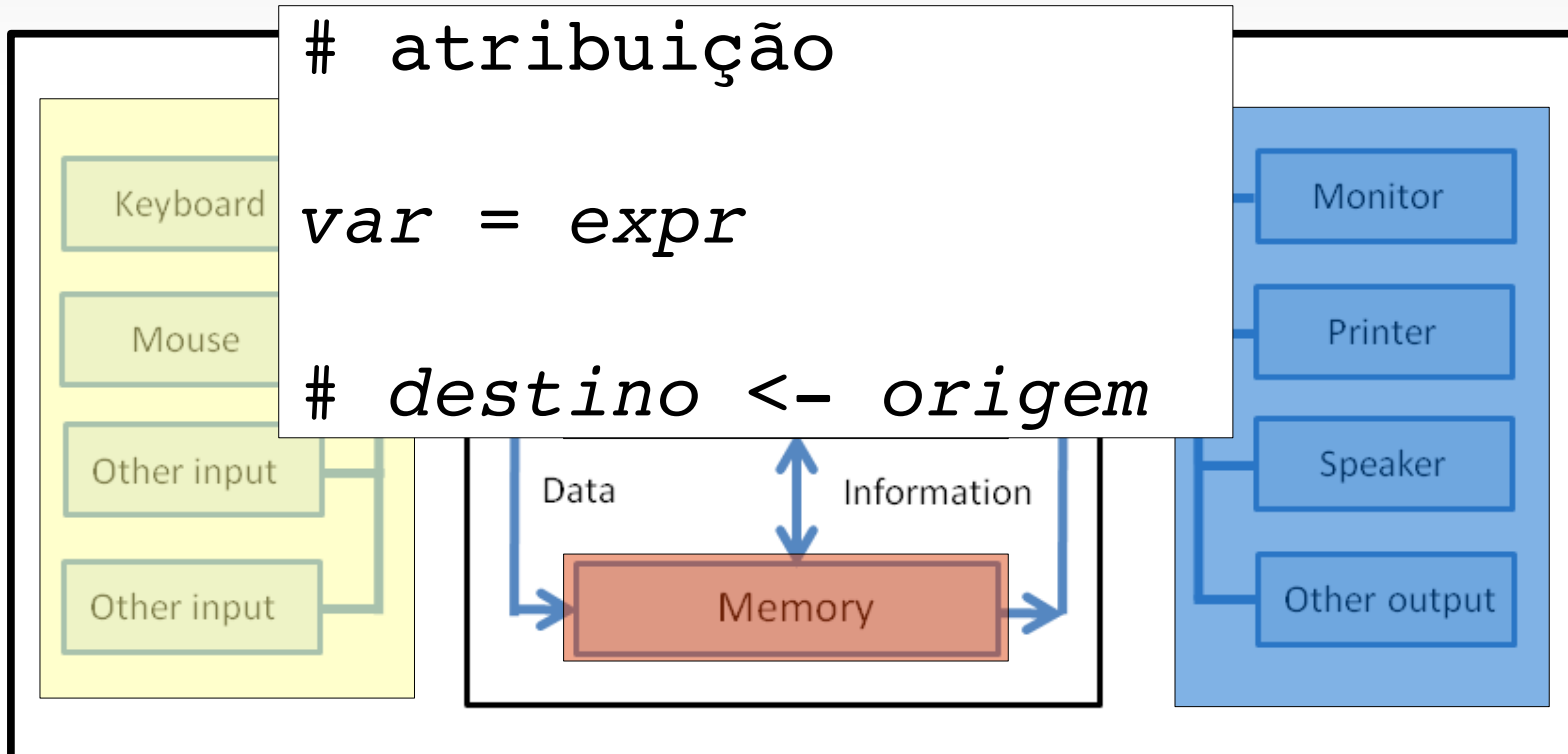
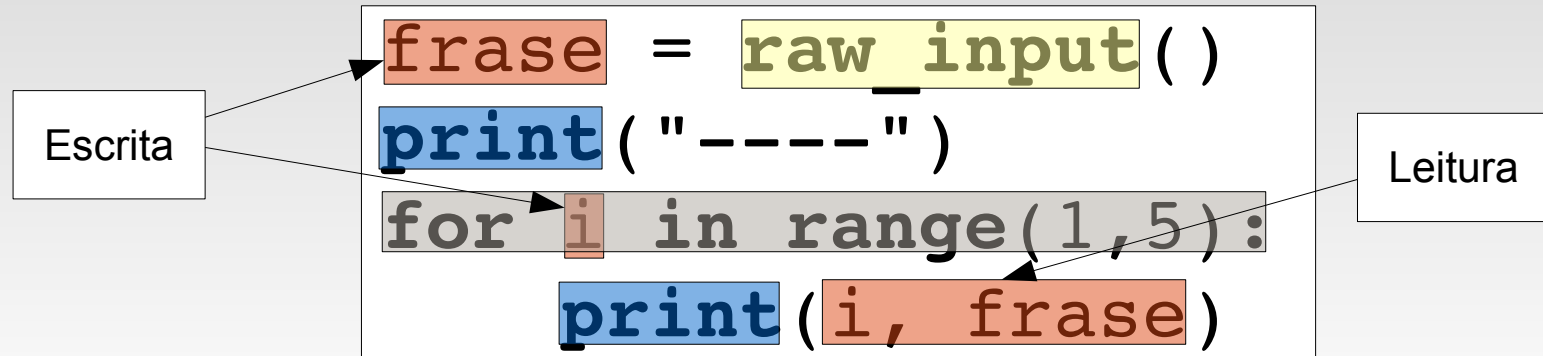
1. A set of instructions given to the computer is called software.
2. You cannot touch and feel software.
3. Software is developed by writing instructions in programming language.
4. The operations of computer are controlled through software.
5. If software is damaged or corrupted, its backup copy can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

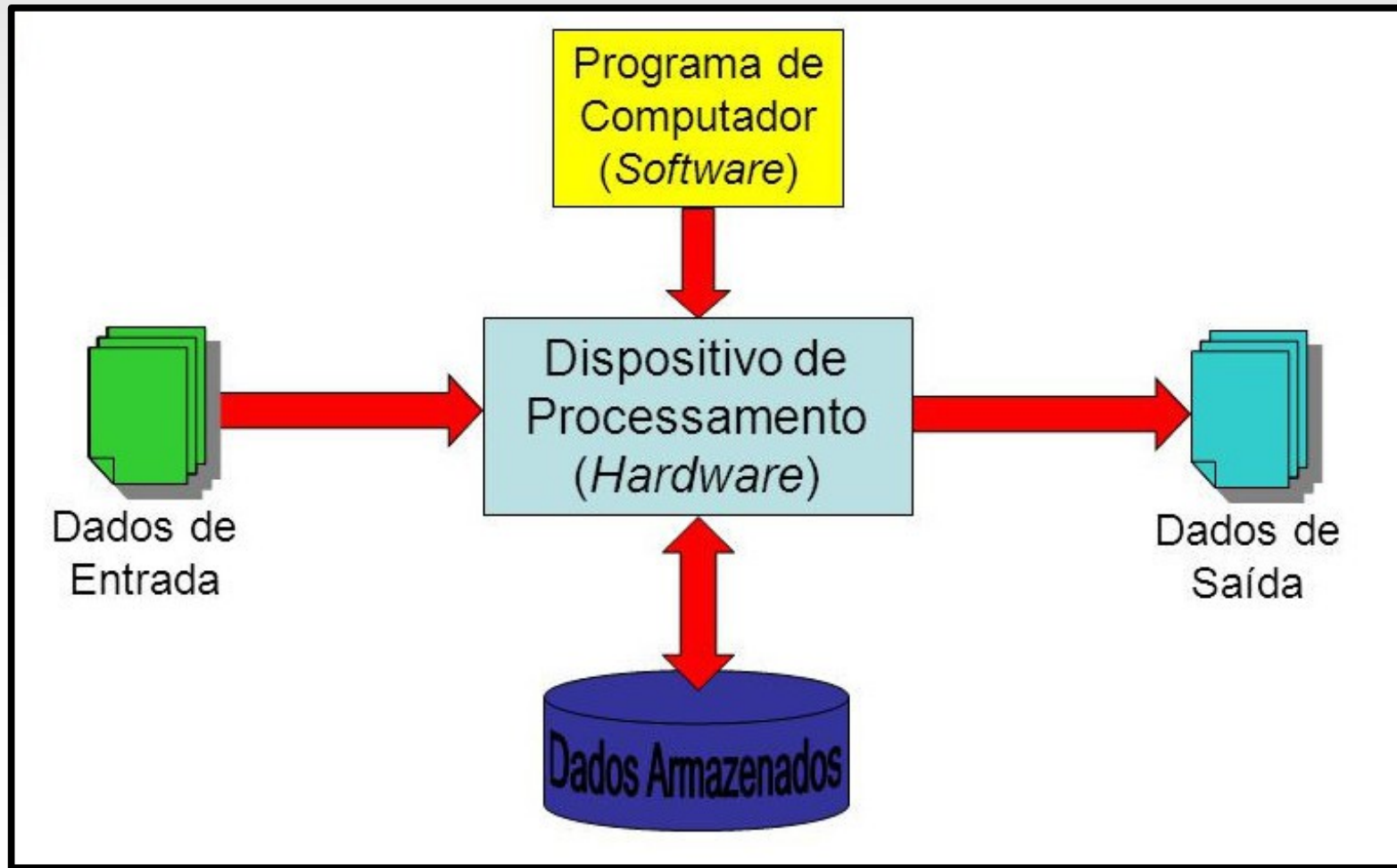
- Sistemas Operacional
- Linguagem de Programação
- Sistemas de Rede

Software Básico

- Photoshop
- Word, Excel
- Firefox
- Jogos

Software Aplicativo

Processamento de Dados



Linguagem de Programação

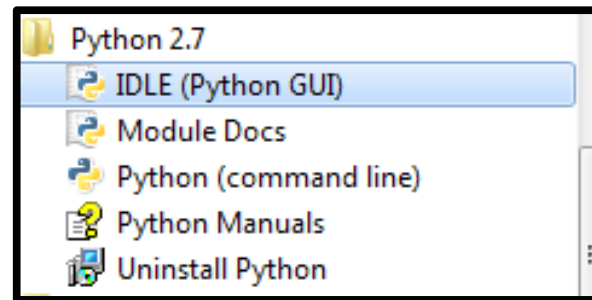
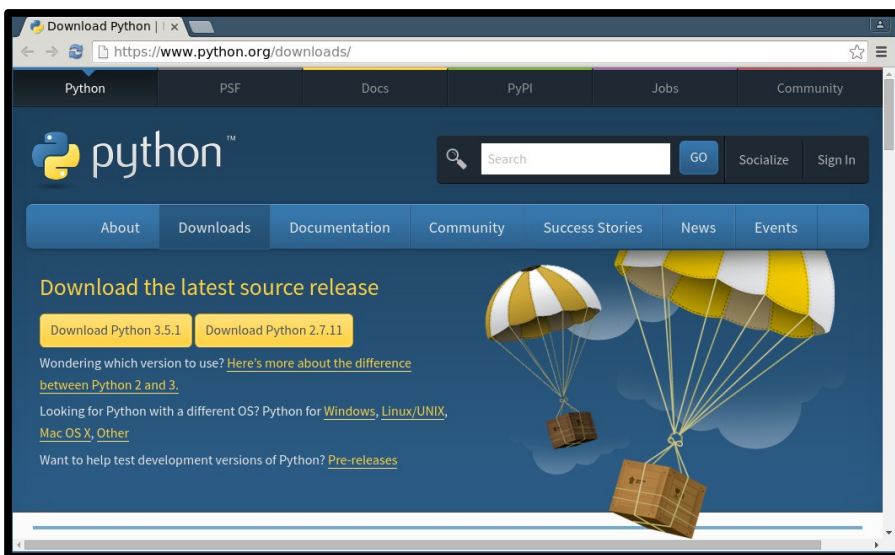
- Um programa que *reconhece* e executa programas
 - (compilador ou interpretador da linguagem)
- *Sintaxe (forma)* e Semântica (significado)
 - (a linguagem)
- Abstração sobre o computador
- C, C++, Java, PHP, JavaScript, **Python**

```
# 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
- 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)

- Ler preços com “input”?

Linguagens para Aplicações

Column name Lead value Excel: finanças, automação

Written code VBA Code

MatLAB803.vi Diagram

MathscriptNode.vi Block Diagram

Untitled0 x

coordinates - Notepad

Ps Ai

ExtendScript Toolkit

Extend Photoshop and Illustrator with custom commands

MatLab: computação numérica

Aut

Photoshop: processamento de imagens