

**Universidade Estadual da Paraíba**

**Centro de Ciências e Tecnologia - CCT**

**Departamento de Computação**

**Curso de Ciência da Computação**

**Disciplina: Algoritmos**

## Introdução à Python

**Professora: Kézia de Vasconcelos Oliveira**

kezia.vasconcelos@servidor.uepb.edu.br

# Agenda

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- Histórico
- Características de Python
- Quem usa Python
- Ambiente Python

# Histórico

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- ❑ Criado no final dos anos 80 por Guido van Rossum no CWI.
- ❑ Em 1991, foi lançada a versão 0.9.0.
- ❑ Nome foi baseado na série "Monty Python's Flying Circus" da BBC.



# Características de Python

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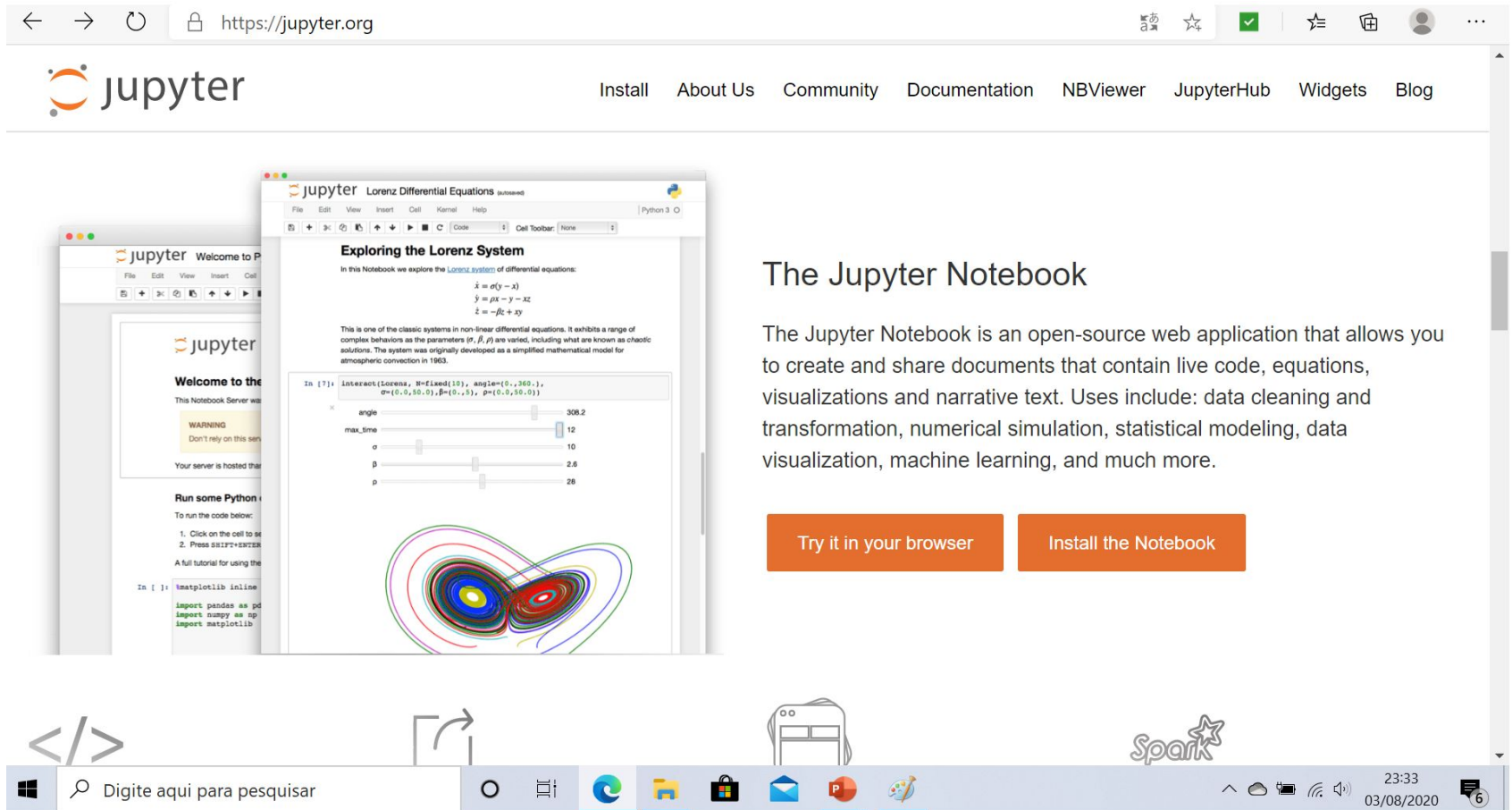
- Simples.
- Fácil de Aprender.
- Livre e de Código Aberto.
- Linguagem de Alto Nível.
- Multiplataforma.
- Suporta múltiplos paradigmas de programação.
- Bibliotecas Extensivas

# Quem usa Python

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- ❑ Ferramentas instalação Linux
- ❑ Muitas Universidades, como MIT, e Stanford
- ❑ Google
- ❑ Youtube
- ❑ Disney
- ❑ Magazine Luiza
- ❑ Globo.com
- ❑ NASA (vários projetos)

# Ambiente Python



The screenshot shows the Jupyter website at <https://jupyter.org>. The website has a navigation bar with links: Install, About Us, Community, Documentation, NBViewer, JupyterHub, Widgets, and Blog. Below the navigation bar, there are two overlapping images of Jupyter Notebook interfaces. The top image shows a notebook titled "Exploring the Lorenz System" with the following content:

**Exploring the Lorenz System**

In this Notebook we explore the [Lorenz system](#) of differential equations:

$$\begin{aligned}\dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy\end{aligned}$$

This is one of the classic systems in non-linear differential equations. It exhibits a range of complex behaviors as the parameters  $(\sigma, \rho, \beta)$  are varied, including what are known as chaotic solutions. The system was originally developed as a simplified mathematical model for atmospheric convection in 1963.

In [7]: `Interact(Lorenz, B=Fixed(10), angle=(0.,360.),`  
`sigma=(0.0,50.0), rho=(0.0,50.0),`

The notebook also shows a plot of the Lorenz attractor and a table of parameters:

Parameter	Value
angle	308.2
max_time	12
sigma	10
rho	2.8
beta	28

The bottom image shows a Jupyter Notebook titled "Welcome to the Jupyter Notebook Server" with a warning message: "WARNING: Don't rely on this server. Your server is hosted on a public IP address." and a section "Run some Python code" with the following code:

```
In [ ]: %matplotlib inline
import pandas as pd
import numpy as np
import matplotlib
```

Below the notebook images, there are two orange buttons: "Try it in your browser" and "Install the Notebook". At the bottom of the screenshot, there is a Windows taskbar with a search bar, several application icons, and a system tray showing the time 23:33 and date 03/08/2020.