

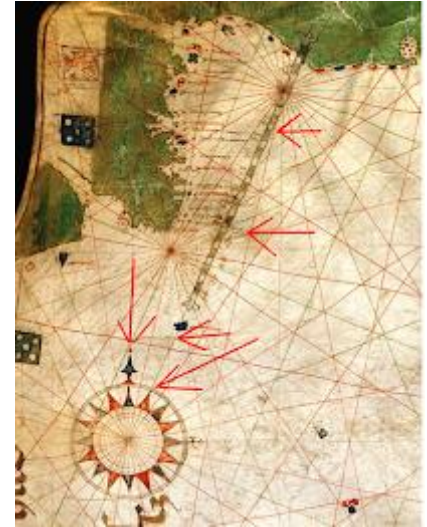
# Hello, Python

**Computação I**  
**Eng. Ambiental e Sanitária**  
**2024.1**

Prof. Dr. Rogério Vargas

# 0 minicurso

1. Roteiro
2. Linguagem de programação
3. Programação na EAS/UFPR
4. Instalação
5. Codificação
6. Considerações finais



## Participar

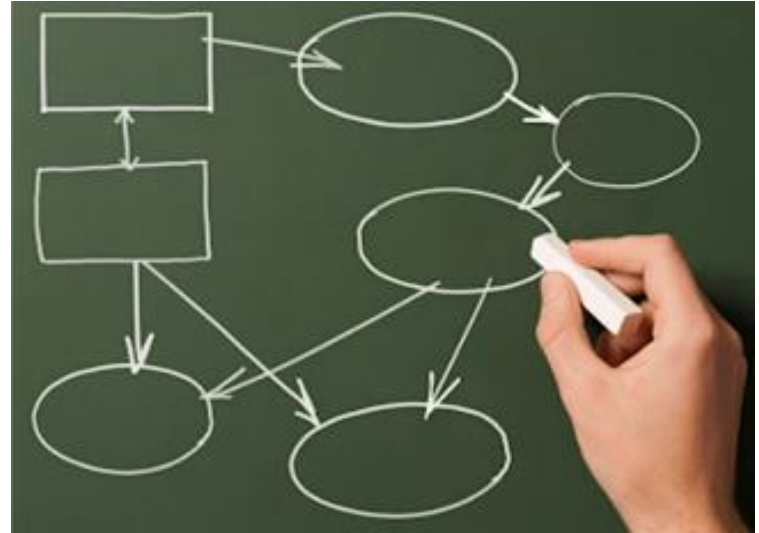
Levante a mão para participar. Sinta-se à vontade, assim irá fluir melhor com sua participação.

# Linguagem de Programação

O que é? Pra que serve? Como funciona?

# Algoritmo

- ▶ O que é um algoritmo?
- ▶ Vir a UFPR
- ▶ Prever situações
- ▶ Fluxograma, casos de uso, português estruturado, esquema próprio...



# Semântica x Sintaxe

- ▶ Semântica



- ▶ Sintaxe

`msg ("TEXTO")`



## Linguagem de máquina

A Linguagem máquina ou código máquina é um sistema de instruções e dados codificados em código binário que podem entender os microprocessadores.





# INTERPRETADOR

A linguagem Python é interpretada.

# Quem usa Python?





# Ranking das linguagens de programação (Jun/2024)



Jun 2024	Jun 2023	Change	Programming Language	Ratings	Change
1	1		Python	15.39%	+2.93%
2	3	▲	C++	10.03%	-1.33%
3	2	▼	C	9.23%	-3.14%
4	4		Java	8.40%	-2.88%
5	5		C#	6.65%	-0.06%
6	7	▲	JavaScript	3.32%	+0.51%
7	14	▲▲	Go	1.93%	+0.93%
8	9	▲	SQL	1.75%	+0.28%
9	6	▼	Visual Basic	1.66%	-1.67%
10	15	▲▲	Fortran	1.53%	+0.53%

# Engenharia Ambiental

Programação na EAS/UFPR

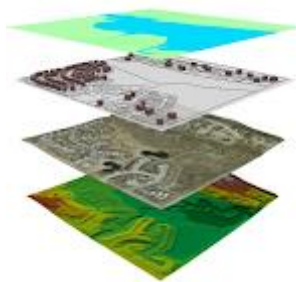
# E na Engenharia Ambiental e Sanitária?



- Computação I

# E na Engenharia Ambiental e Sanitária?

- ▶ Topografia
- ▶ Geodésia Física
- ▶ Geodésia Geométrica
- ▶ Geodésia Espacial
- ▶ Fotogrametria
- ▶ Rotinas
- ▶ Modelagem matemática
- ▶ Inteligência artificial
- ▶ Sensores



- ▶ Cartografia
- ▶ Sensoriamento Remoto
- ▶ Geoprocessamento
- ▶ Sistemas de Informações Georreferenciadas
- ▶ Modelagem
- ▶ Gráficos

Agisoft



ArcGIS



QGIS

# Instalação

Eis algumas possibilidades para usar o Python

# Instalação do Interpretador

- ▶ **Windows**

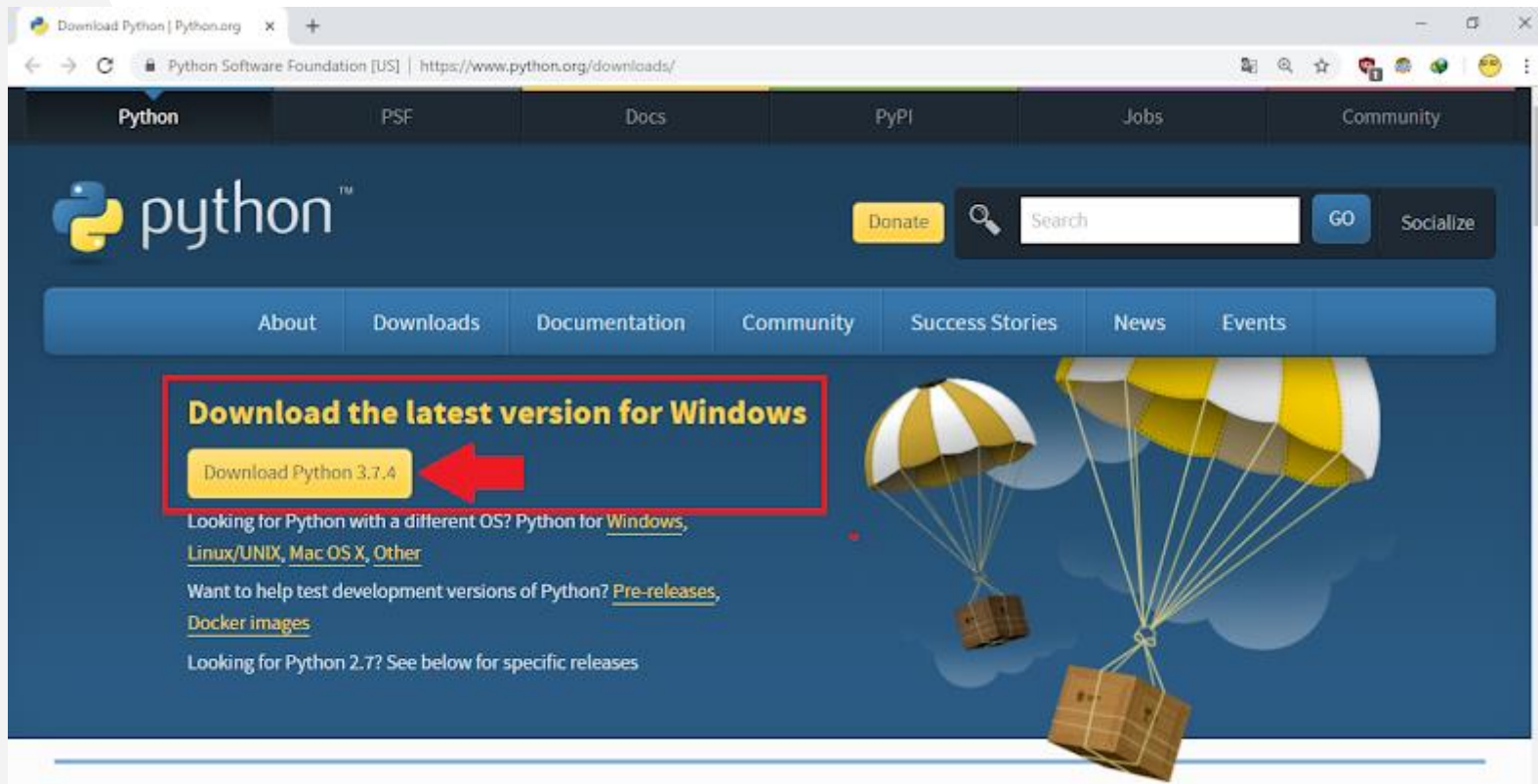
Versão mais recente: 3.12.4

- ▶ **Download**

<https://www.python.org/downloads/windows/>



# Instalação: Download



Download Python | Python.org

Python Software Foundation [US] | <https://www.python.org/downloads/>

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**Download the latest version for Windows**

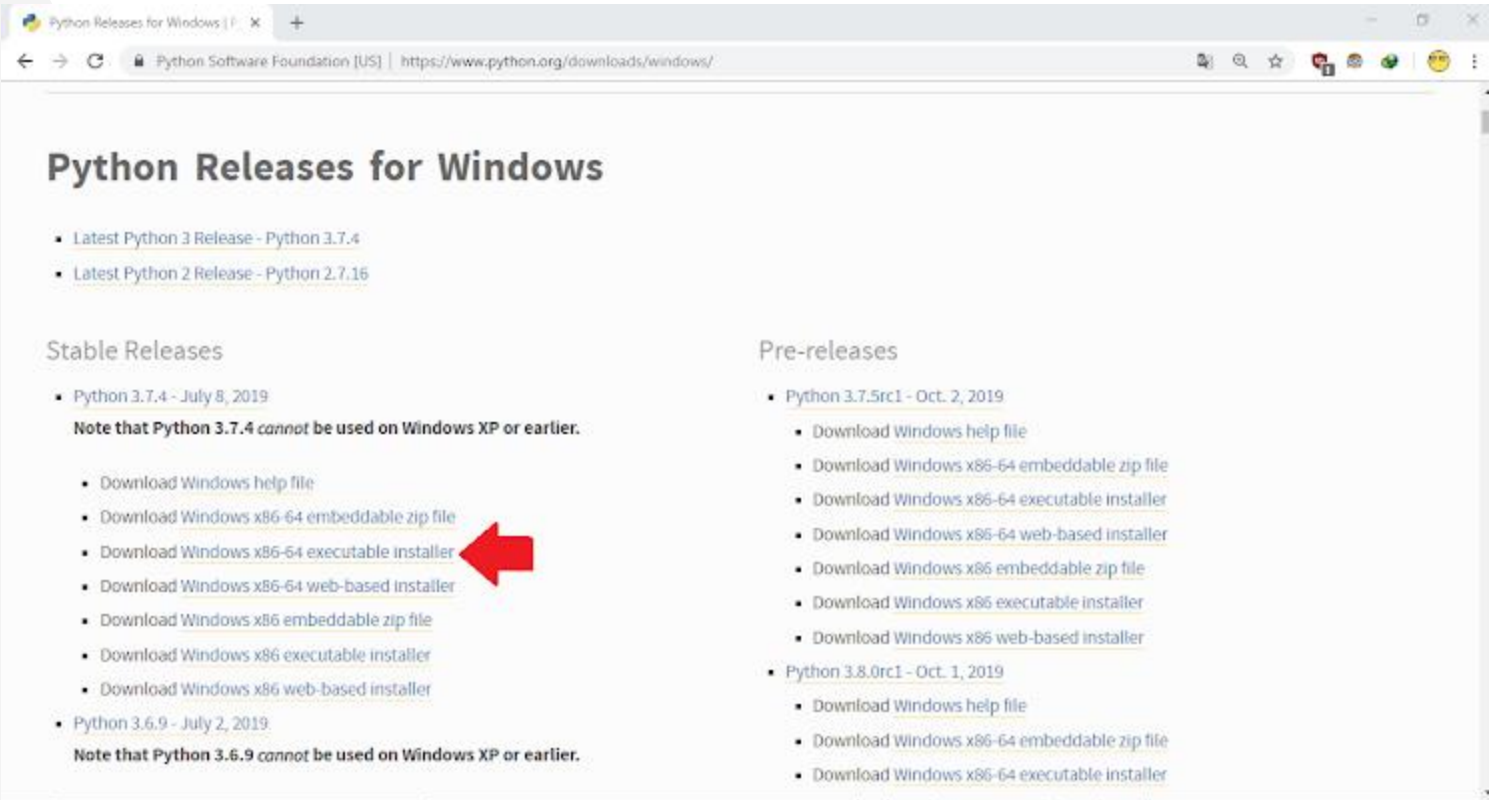
[Download Python 3.7.4](#)

Looking for Python with a different OS? Python for [Windows](#), [Linux/UNIX](#), [Mac OS X](#), [Other](#)

Want to help test development versions of Python? [Pre-releases](#), [Docker images](#)

Looking for Python 2.7? See below for specific releases

# Instalação: 64 bits




The screenshot shows a web browser window with the URL <https://www.python.org/downloads/windows/>. The page title is "Python Releases for Windows".

**Python Releases for Windows**

- Latest Python 3 Release - [Python 3.7.4](#)
- Latest Python 2 Release - [Python 2.7.16](#)

**Stable Releases**

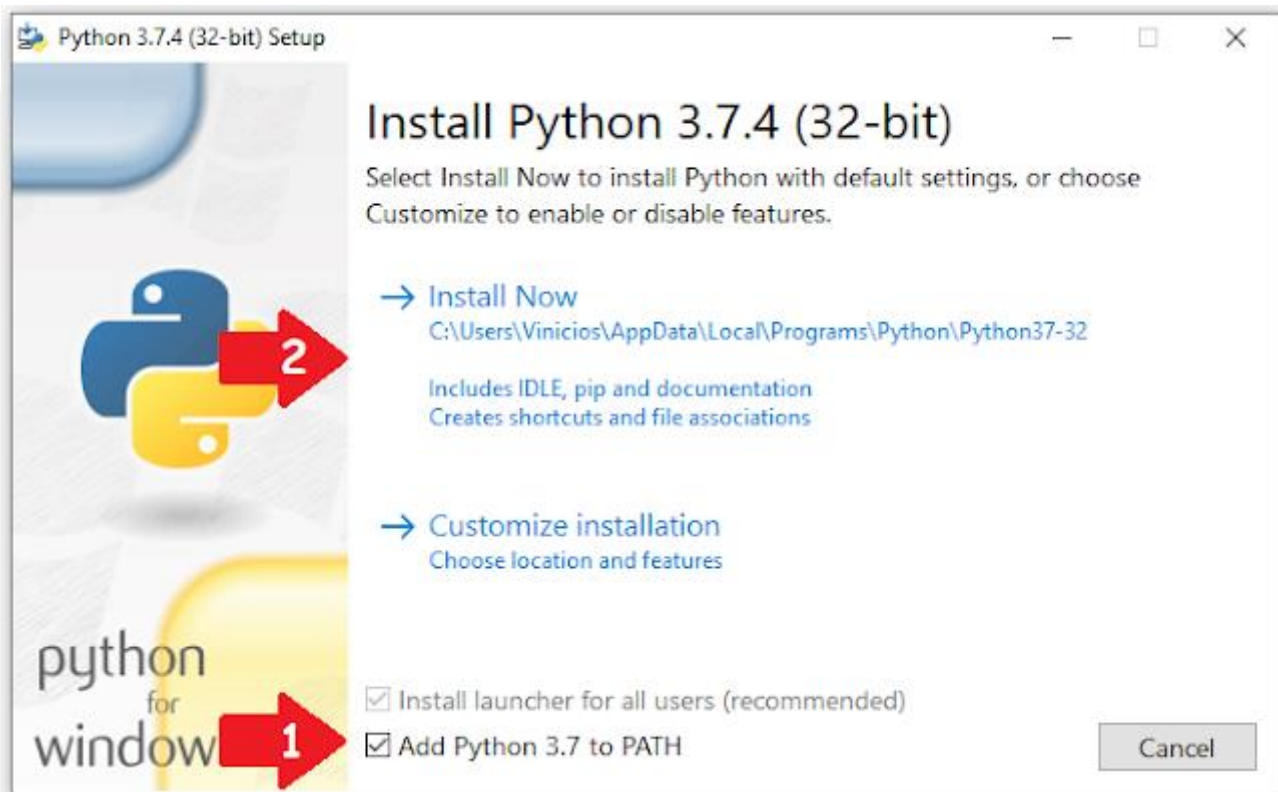
- [Python 3.7.4 - July 8, 2019](#)  
**Note that Python 3.7.4 cannot be used on Windows XP or earlier.**
  - [Download Windows help file](#)
  - [Download Windows x86-64 embeddable zip file](#)
  - [Download Windows x86-64 executable installer](#) 
  - [Download Windows x86-64 web-based installer](#)
  - [Download Windows x86 embeddable zip file](#)
  - [Download Windows x86 executable installer](#)
  - [Download Windows x86 web-based installer](#)
- [Python 3.6.9 - July 2, 2019](#)  
**Note that Python 3.6.9 cannot be used on Windows XP or earlier.**

**Pre-releases**

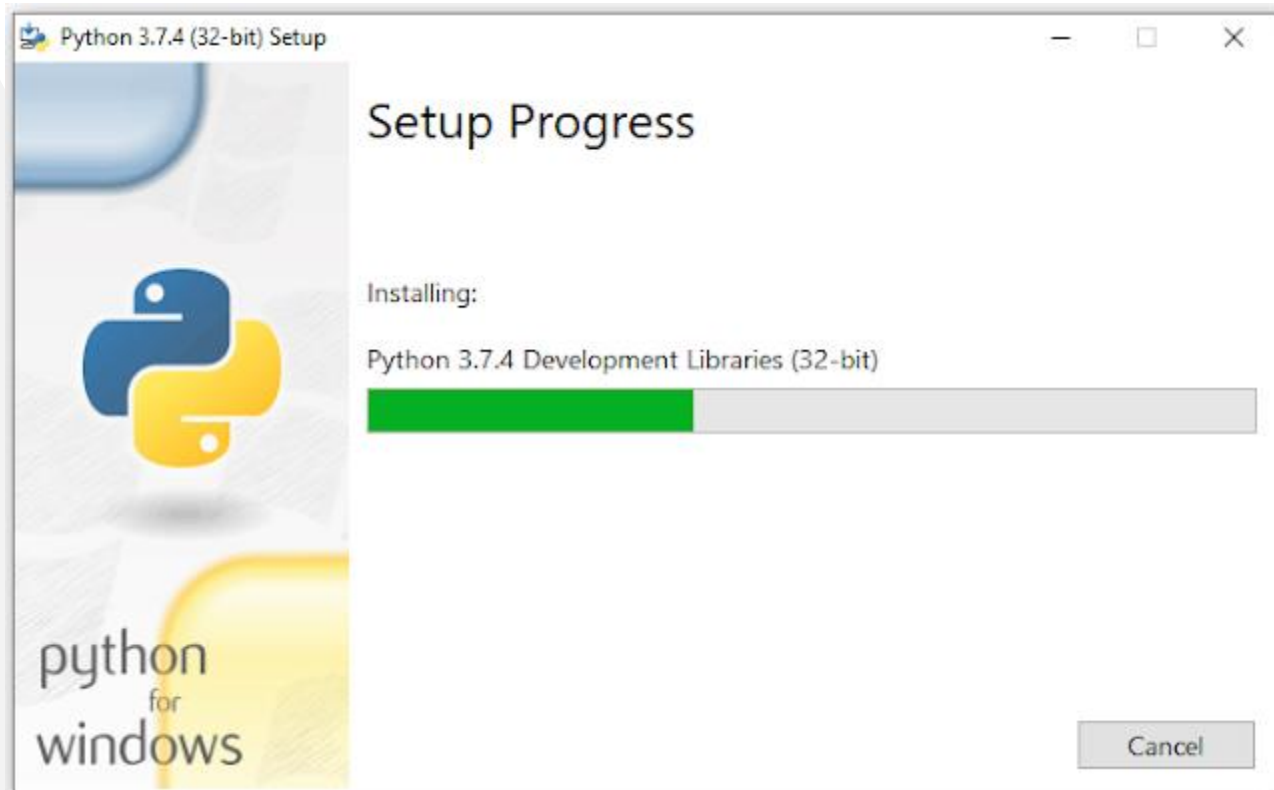
- [Python 3.7.5rc1 - Oct. 2, 2019](#)
  - [Download Windows help file](#)
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  - [Download Windows x86-64 web-based installer](#)
  - [Download Windows x86 embeddable zip file](#)
  - [Download Windows x86 executable installer](#)
  - [Download Windows x86 web-based installer](#)
- [Python 3.8.0rc1 - Oct. 1, 2019](#)
  - [Download Windows help file](#)
  - [Download Windows x86-64 embeddable zip file](#)
  - [Download Windows x86-64 executable installer](#)



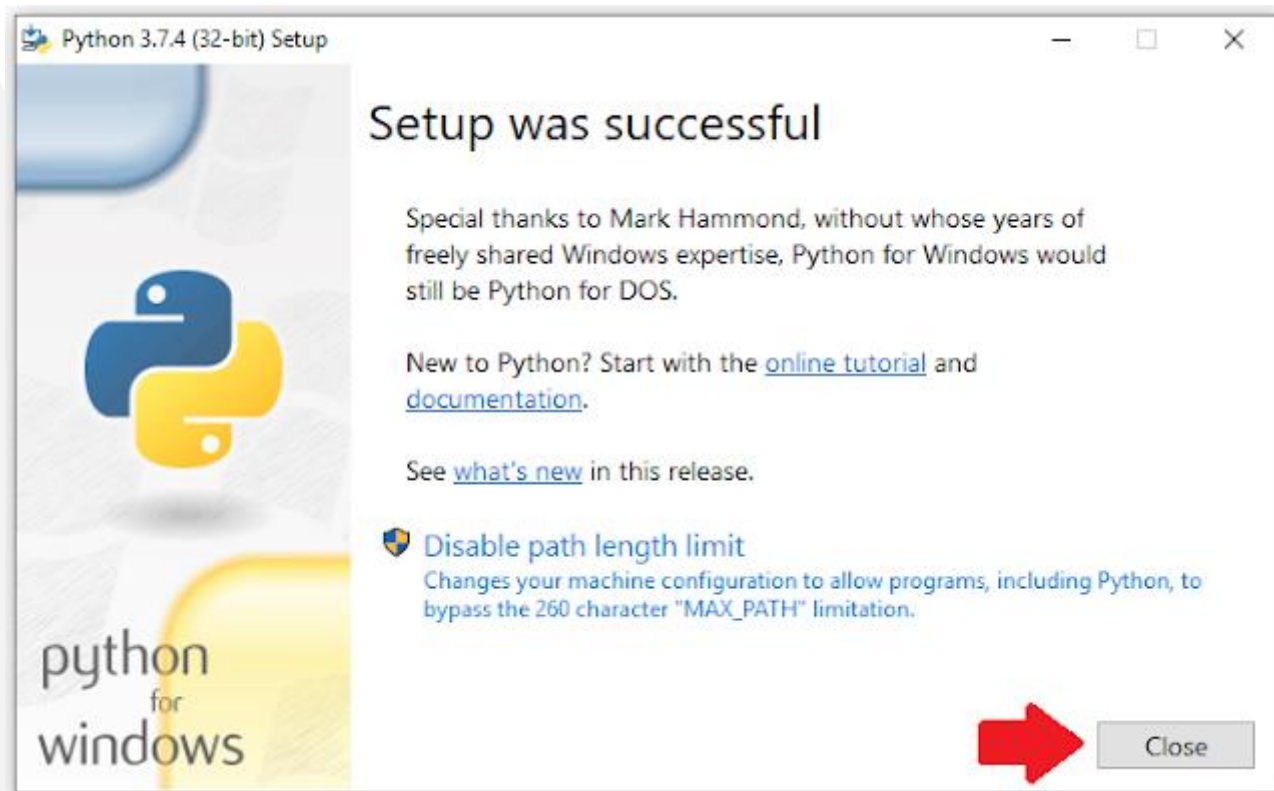
# Instalação: PATH



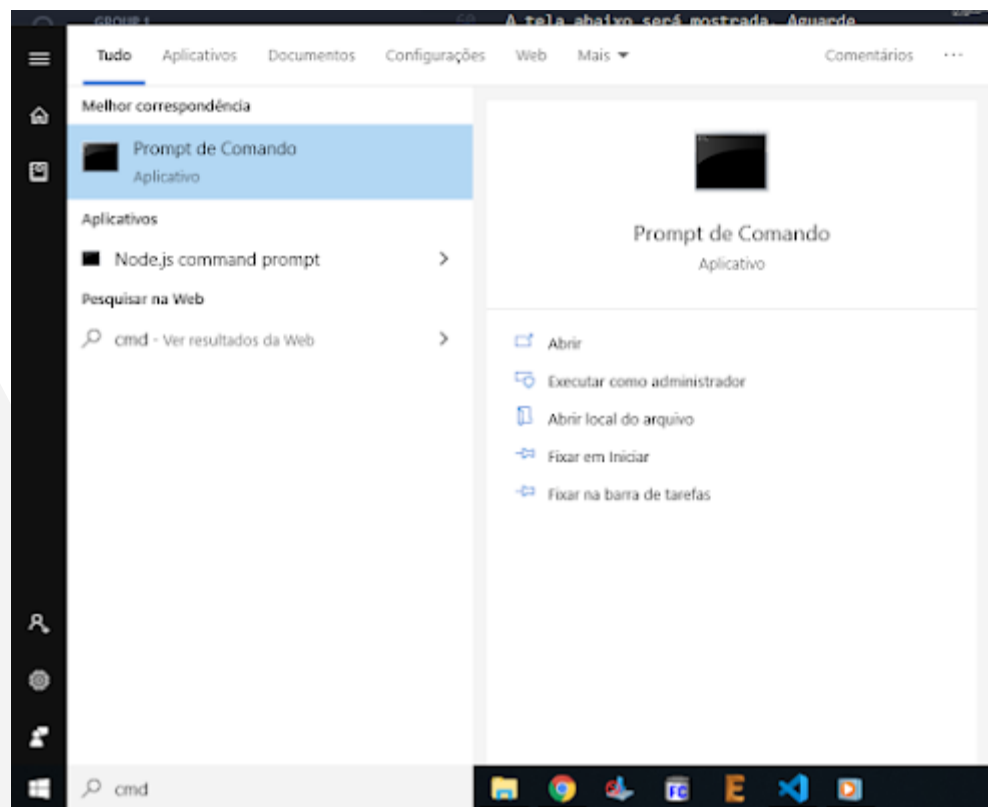
# Instalação: Andamento



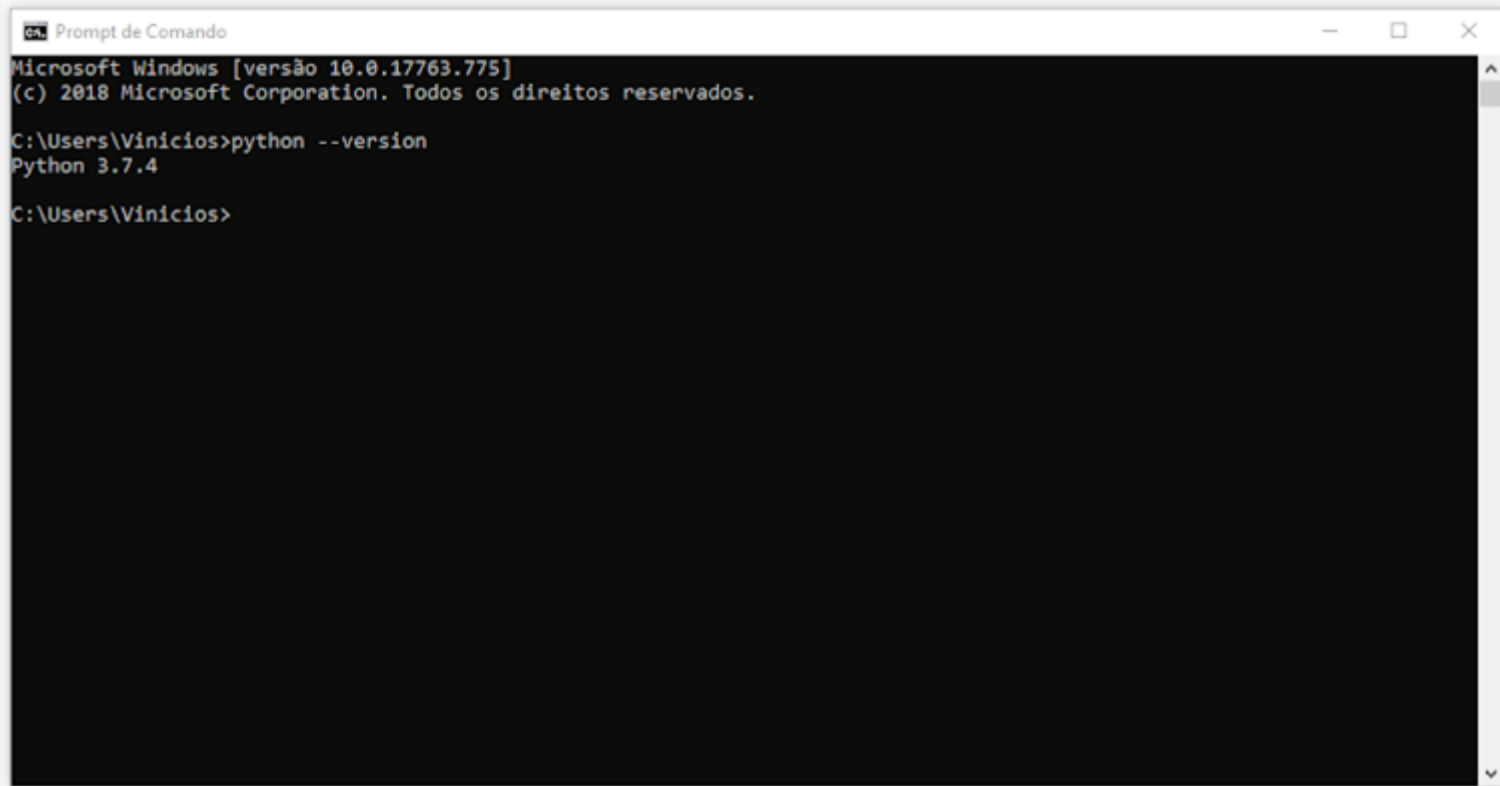
# Instalação: Sucesso



# Instalação: CMD



# Instalação: CMD



```
CA Prompt de Comando
Microsoft Windows [versão 10.0.17763.775]
(c) 2018 Microsoft Corporation. Todos os direitos reservados.

C:\Users\Vinicios>python --version
Python 3.7.4

C:\Users\Vinicios>
```

# IDE (Ambiente de Desenvolvimento Integrado)



# Usando a IDLE

A screenshot of the IDLE Python Shell window. The window title is "IDLEShell3.9.1". The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The main text area displays the following text: "Python 3.9.1 (tags/v3.9.1:11e5d33e, Dec 7 2020, 17:08:21) [MSC v.192? 64 bit (AMD64)] on win32", "Type 'help', 'copyright', 'credits' or 'license()' for more information.", and a prompt ">>>" followed by a vertical cursor bar. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

```
IDLEShell3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:11e5d33e, Dec 7 2020, 17:08:21) [MSC v.192? 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> |
```

# Usando a IDLE

IDLE Shell 3.9.1

File Edit Shell Debug Options Win

New File Ctrl+N

Open... Ctrl+O

Open Module... Alt+M

Recent Files

Module Browser Alt+C

Path Browser

Save Ctrl+S

Save As... Ctrl+Shift+S

Save Copy As... Alt+Shift+S

Print Window Ctrl+P

Close Alt+F4

Exit Ctrl+Q

programacaoii.py - C:/Users/rvvar/

File Edit Format Run Options

New File Ctrl+N

Open... Ctrl+O

Open Module... Alt+M

Recent Files

Module Browser Alt+C

Path Browser

Save Ctrl+S

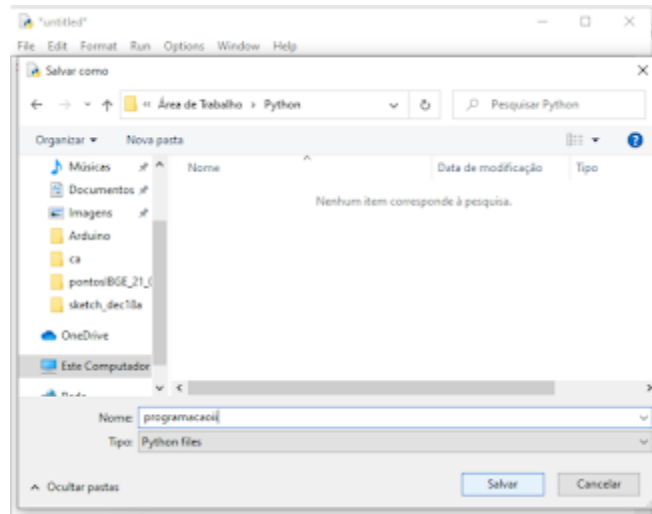
Save As... Ctrl+Shift+S

Save Copy As... Alt+Shift+S

Print Window Ctrl+P

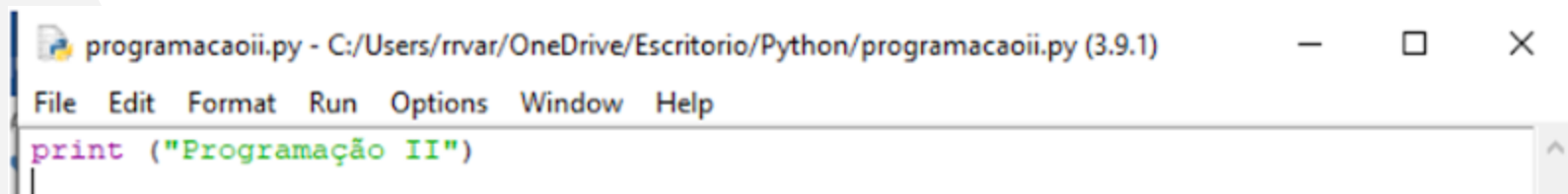
Close Alt+F4

Exit Ctrl+Q

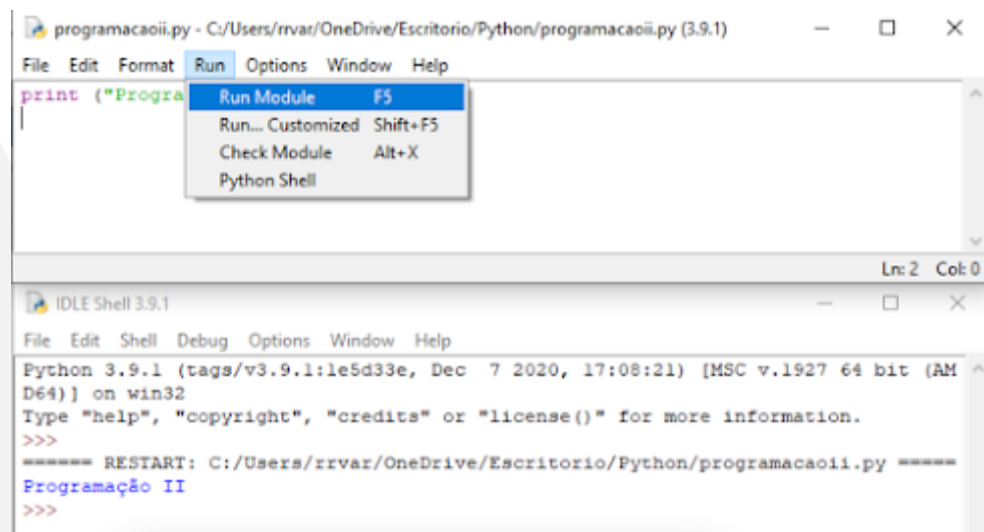




# Usando a IDLE



A screenshot of the IDLE Python editor window. The title bar reads "programacaoii.py - C:/Users/rivar/OneDrive/Escritorio/Python/programacaoii.py (3.9.1)". The menu bar includes "File", "Edit", "Format", "Run", "Options", "Window", and "Help". The code editor contains a single line of Python code: `print ("Programação II")`. The cursor is positioned at the end of the line.



A screenshot of the IDLE Python editor window with the "Run" menu open. The title bar is the same as in the previous image. The menu options are: "Run Module" (F5), "Run... Customized" (Shift+F5), "Check Module" (Alt+X), and "Python Shell". The code editor shows the same line of code as before. Below the editor is the "IDLE Shell 3.9.1" window, which displays the output of the script: "Programação II".

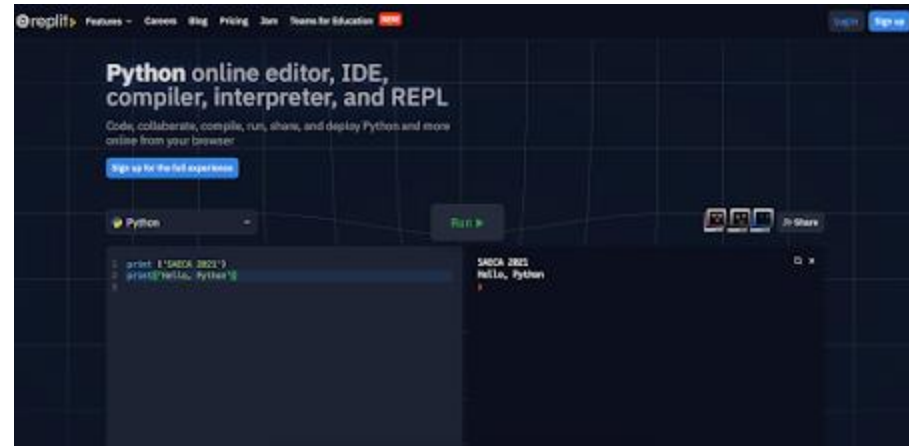
# Python online



A screenshot of the OnlineGDB Python compiler interface. The editor shows three lines of Python code: `1 print('SAGGA 2021')`, `2 print('Hello, Python')`, and `3`. The output window at the bottom displays the execution results: `SAGGA 2021` and `Hello, Python`. A green message at the bottom indicates the program finished with exit code 0.

## ▶ OnlineGDB

[https://www.onlinegdb.com/online\\_python\\_compiler](https://www.onlinegdb.com/online_python_compiler)



A screenshot of the Replit Python online editor interface. The header reads "Python online editor, IDE, compiler, interpreter, and REPL". Below this, it says "Code, collaborate, compile, run, share, and deploy Python and more online from your browser." A blue button says "Sign up for the full experience". The editor shows the same three lines of Python code as the OnlineGDB screenshot. The output window displays the execution results: `SAGGA 2021` and `Hello, Python`. A "Run" button is visible in the top right corner.

## ▶ Replit

<https://replit.com/languages/python3>

# Codificação

Agora vamos programar. Começaremos com *Hello, Python*



Código-fonte:

```
print('Hello, Python')
```

“

*Só se aprende a programar programando.*

- **Rogério Vargas**

”

# Hello, Python

**Alguma dúvida?**

Considerações finais...

# Contato

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**rogeriovargas@ufpr.br**  
**<http://rogerio.in>**

