

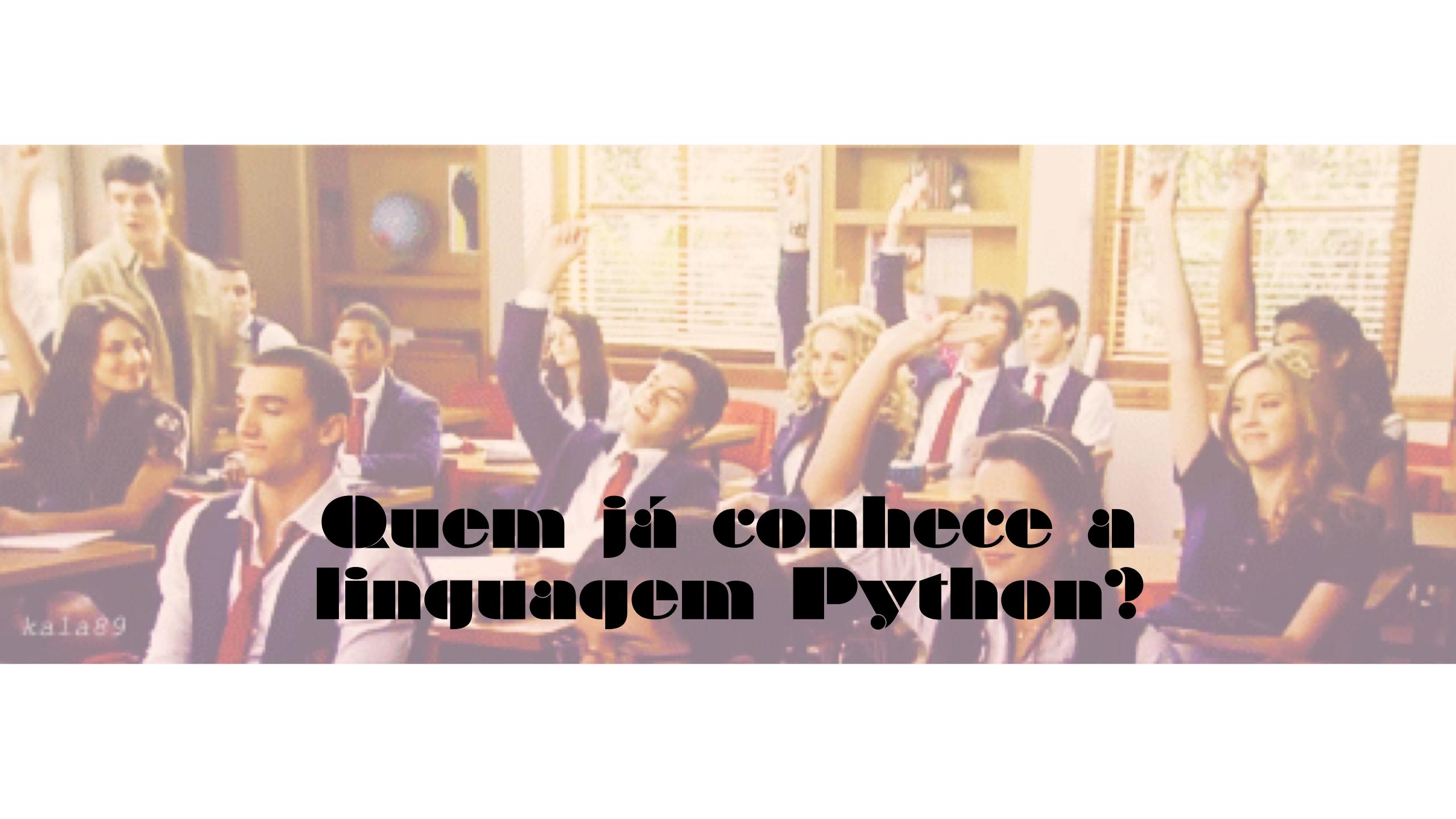
Python e suas baterias inclusas

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A photograph of a classroom filled with students. Many students are looking towards the front of the room and raising their hands. The room has wooden desks and chairs, and bookshelves in the background.

**Quem já conhece a
linguagem Python?**



O QUE É
PYTHON?



O que é Python?

BY LUISGUS

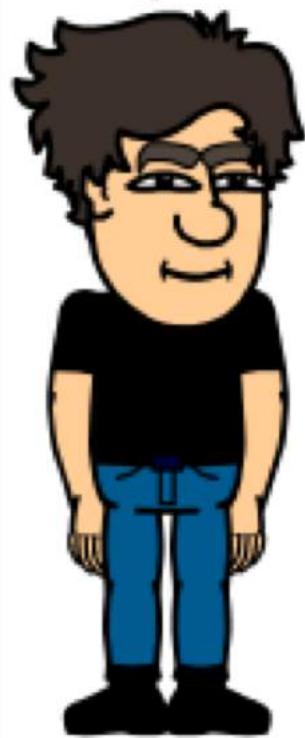
Oi Crax.
Bem vindo à
Pyctorial!

Oi. Ah, você não
devia começar
com Hello.

Não? Mas todos
fazem isso. E em Python
é verdade. Nada de
main,begin, etc..

Ok. Mas primeiro
devemos explicar o
que é python.

Python é uma linguagem de programação
dinâmica, fortemente tipada e orientada
a objetos. Contém recursos avançados como
compreensão de listas e geradores. Possui
gerenciamento automático de memória
e, sempre bom lembrar, é software livre.





Guido van Rossum
<https://gvanrossum.github.io/>

Criou a linguagem Python em 1991.

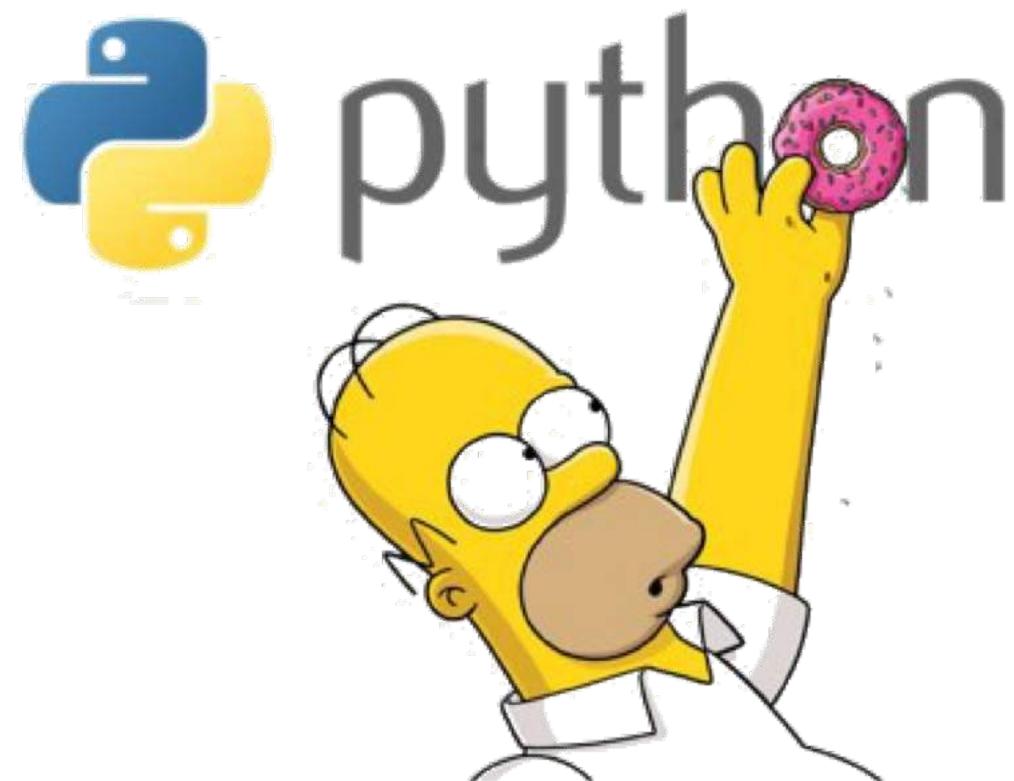
Trabalho no Google de 2005 a 2012.

Atualmente trabalha no Dropbox.

Há mais de seis anos, em dezembro de 1989, eu estava procurando por um projeto de programação como "hobby" que me mantivesse ocupado durante a semana próxima ao Natal. Meu escritório... estaria fechado, mas eu tinha um computador em casa e não muito mais do que isso em mãos. Eu decidi escrever um interpretador para a nova linguagem de scripting sobre a qual eu vinha pensando ultimamente: uma descendente da ABC que agradaria a hackers de Unix/C.



vamos falar de Python agora...





Versões atuais: **2.7.15** e **3.7.0**

<http://www.python.org/download>

** Python puro (CPython)

Windows: necessário instalar.

Linux e Mac: já instalado, verificar se é a versão mais recente.

Instalação alternativa



<http://anaconda.org>



Popularidade (TIOBE Index)

Aug 2018	Aug 2017	Change	Programming Language
1	1		Java
2	2		C
3	3		C++
4	5	▲	Python
5	6	▲	Visual Basic .NET
6	4	▼	C#
7	7		PHP
8	8		JavaScript
9	-	▲	SQL
10	14	▲	Assembly language

IEEE Ranking

Language Rank	Types	Spectrum Ranking
1. Python		100.0
2. C++		99.7
3. Java		97.5
4. C		96.7
5. C#		89.4
6. PHP		84.9
7. R		82.9
8. JavaScript		82.6
9. Go		76.4
10. Assembly		74.1

Python 2 x Python 3

Suporte
acaba em
2020.

ASCII

Unicode

```
# declaração print  
print "Hello World!"
```

```
# função print  
print("Hello World!")
```

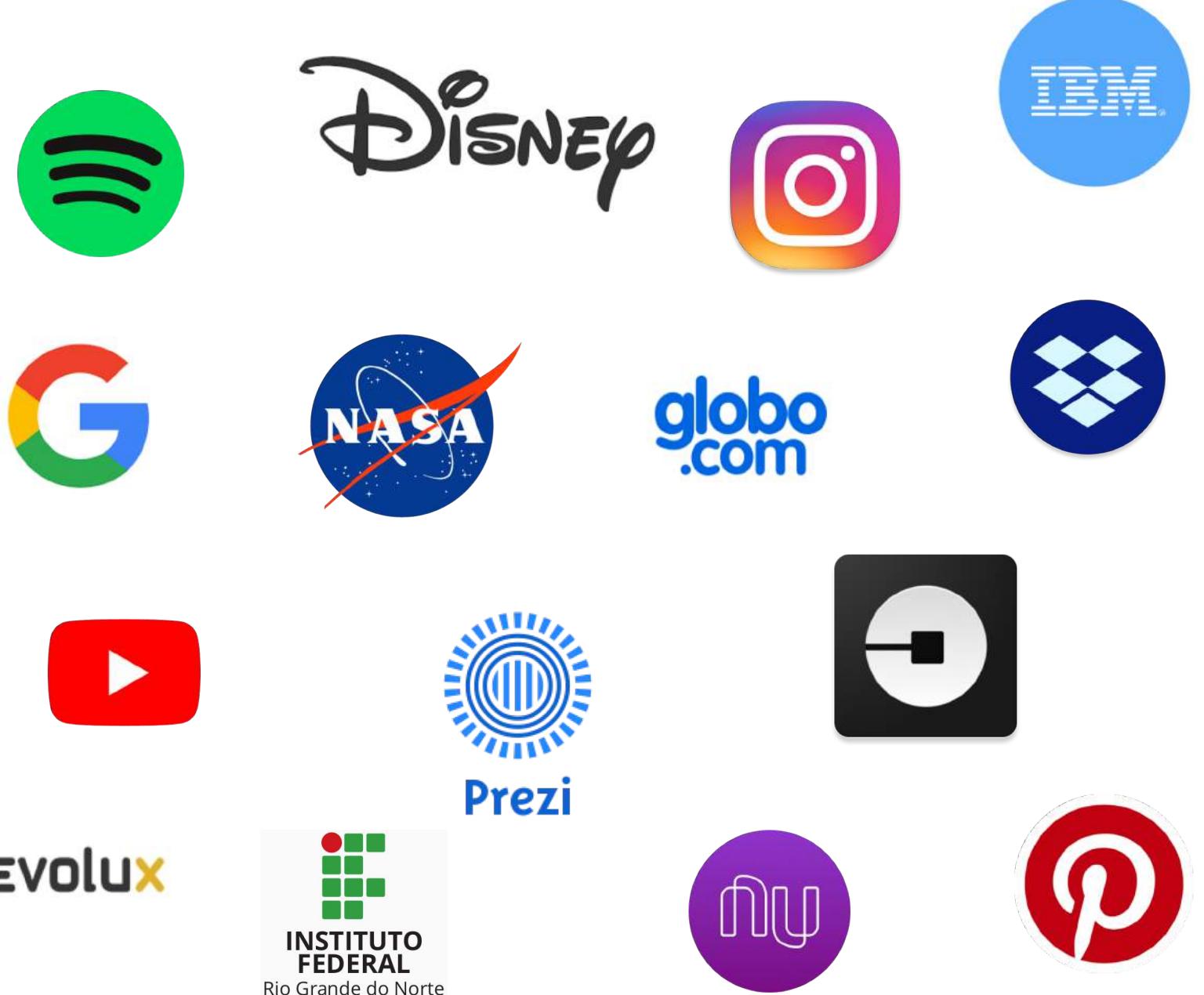
```
raw_input()
```

```
input()
```

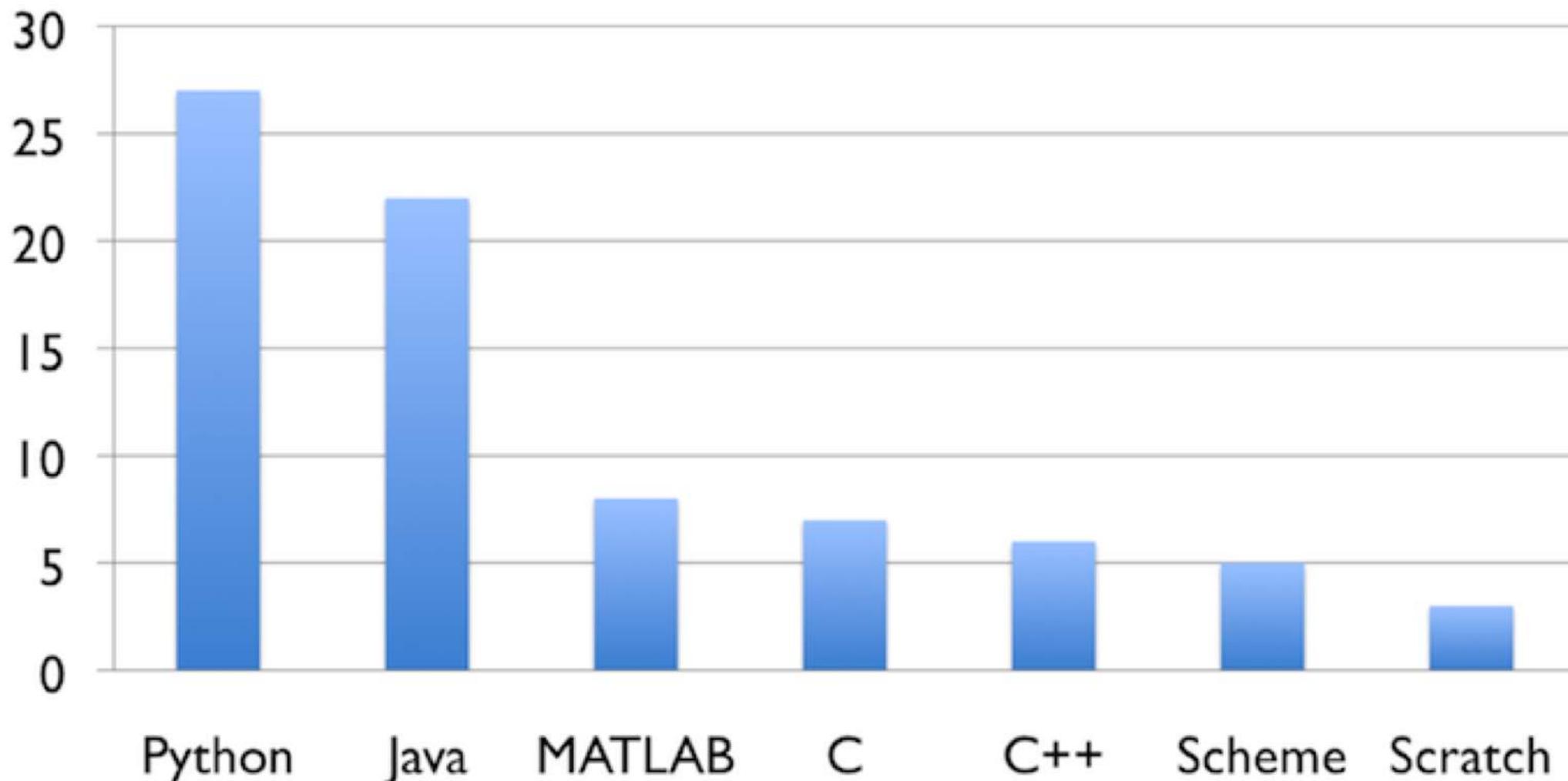
```
# Divisão de inteiro  
>>> 5 / 2  
2
```

```
# Divisão de inteiro  
>>> 5 / 2  
2.5
```

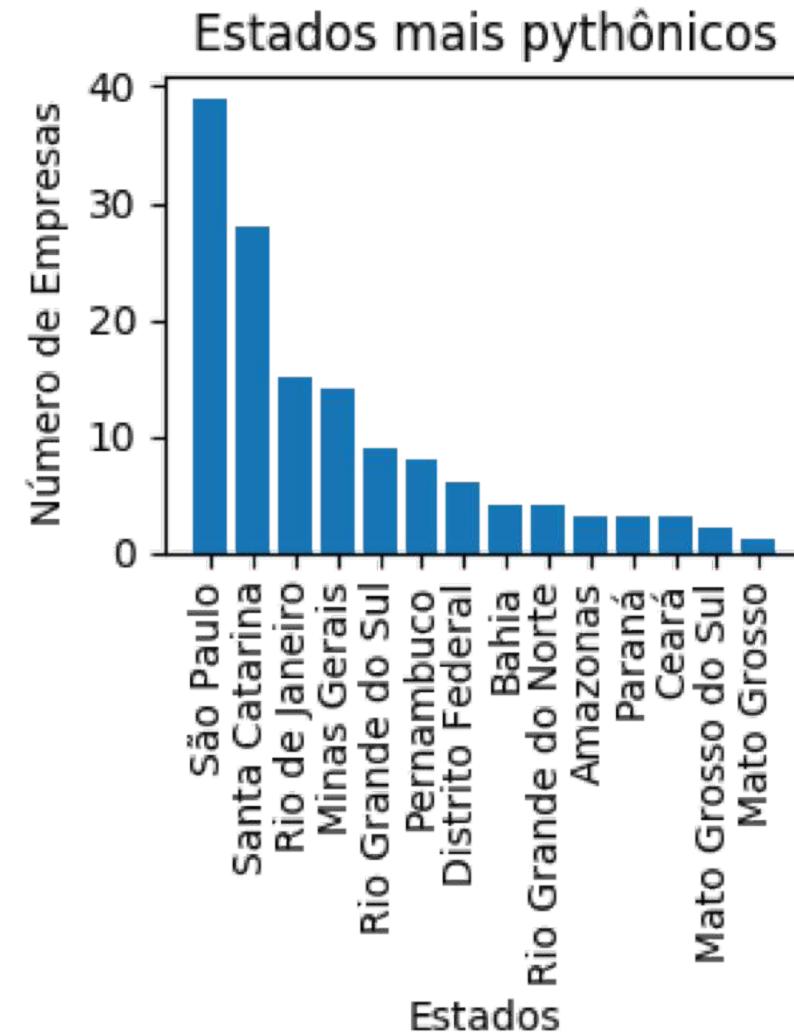
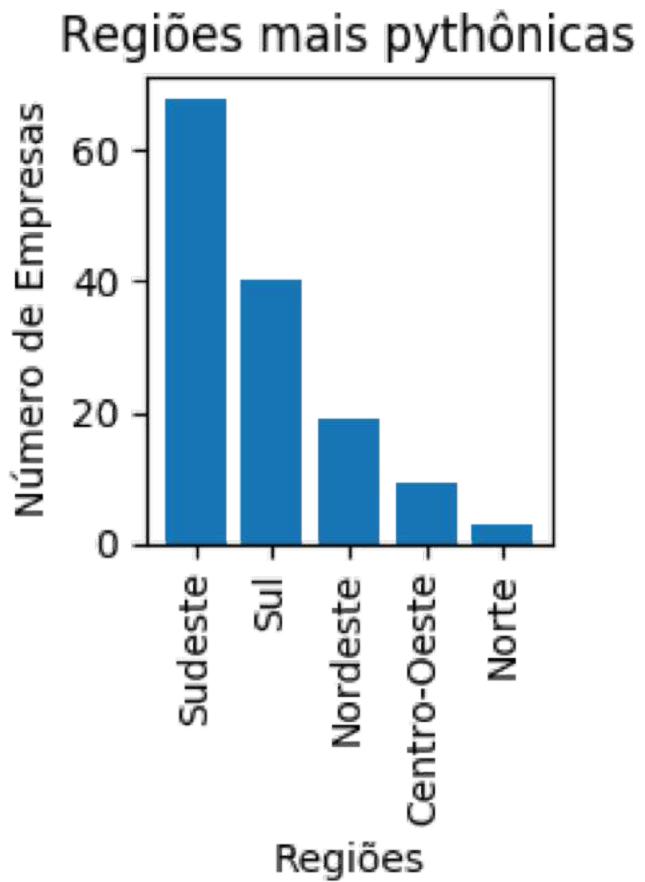
Quem usa?



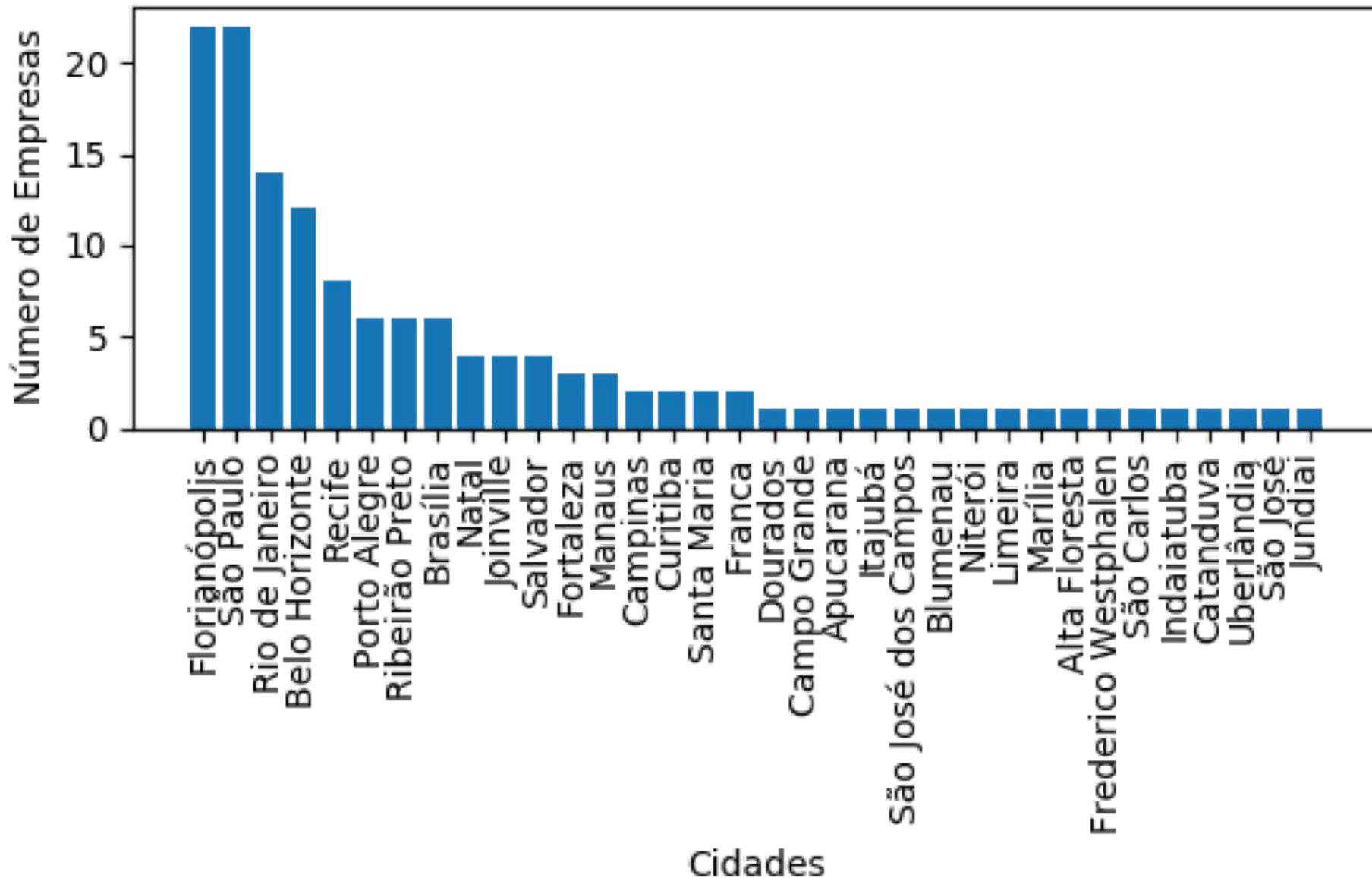
Number of top 39 U.S. computer science departments
that use each language to teach introductory courses



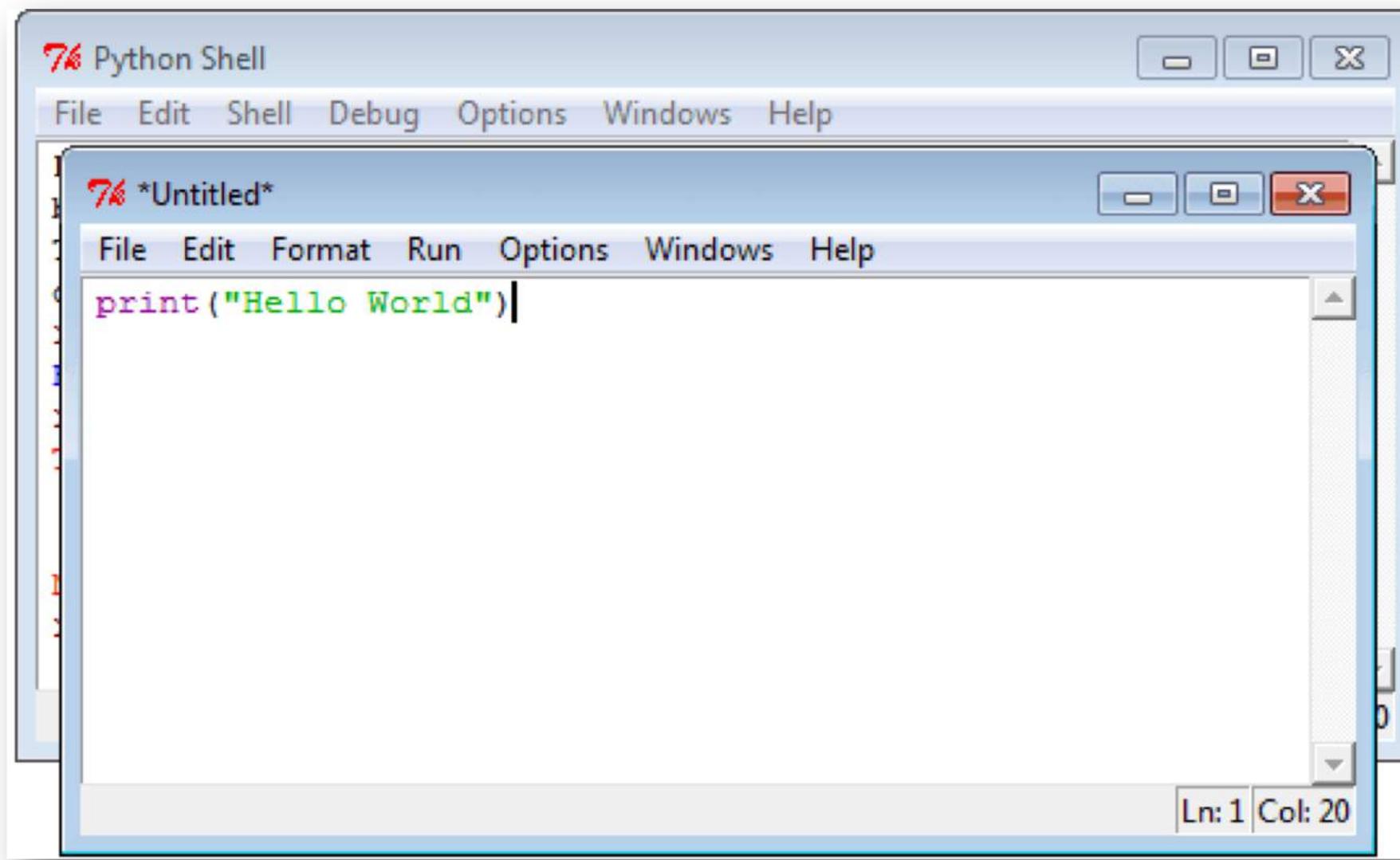
Analysis done by Philip Guo (www.pgbvine.net) in July 2014, last updated 2014-07-29



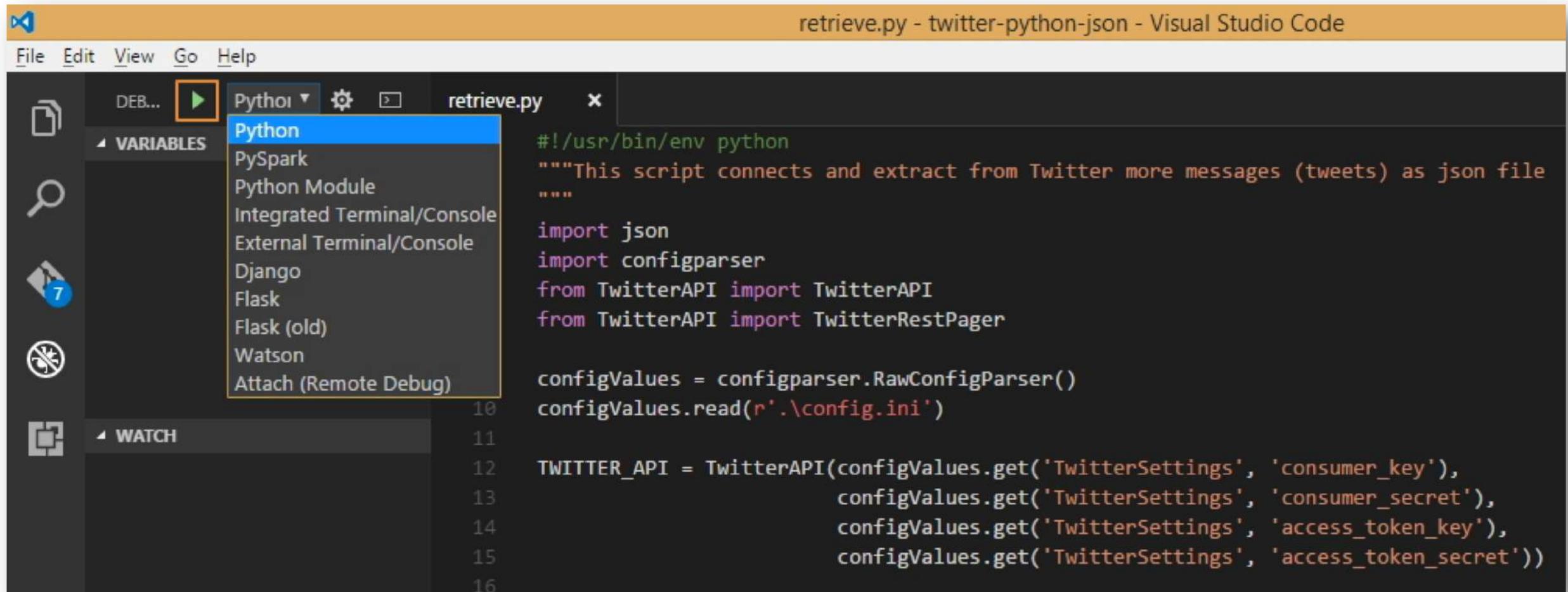
Cidades mais pythônicas



Ambientes de desenvolvimento (IDLE)



Ambientes de desenvolvimento (vs code)



The screenshot shows the Visual Studio Code interface with the following details:

- Title Bar:** retrieve.py - twitter-python-json - Visual Studio Code
- File Menu:** File Edit View Go Help
- Toolbar:** DEB... (highlighted with a yellow box), Python (highlighted with a yellow box), Settings, Task Manager, Variables, Search, Issues, Problems, Watch.
- Variables Panel:** Shows a dropdown menu with options: Python, PySpark, Python Module, Integrated Terminal/Console, External Terminal/Console, Django, Flask, Flask (old), Watson, Attach (Remote Debug). The "Python" option is selected and highlighted with a yellow box.
- Watch Panel:** Shows a dropdown menu with options: WATCH (highlighted with a yellow box).
- Code Editor:** The file "retrieve.py" is open, showing Python code for connecting to Twitter and extracting messages. The code includes imports for json, configparser, TwitterAPI, and TwitterRestPager, configuration reading from a config.ini file, and setting up the Twitter API with consumer key, consumer secret, access token key, and access token secret.

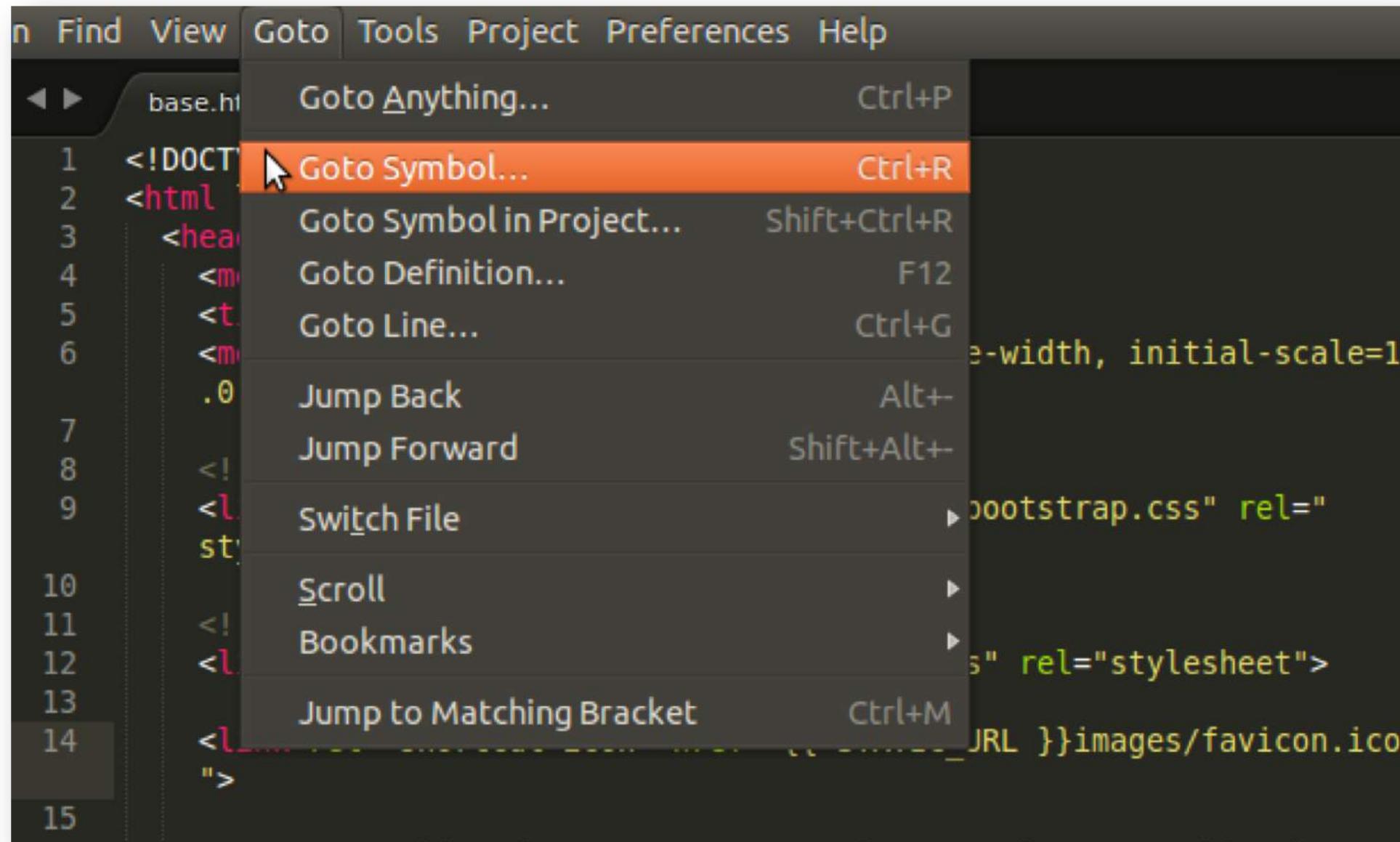
```
#!/usr/bin/env python
"""This script connects and extract from Twitter more messages (tweets) as json file
"""

import json
import configparser
from TwitterAPI import TwitterAPI
from TwitterAPI import TwitterRestPager

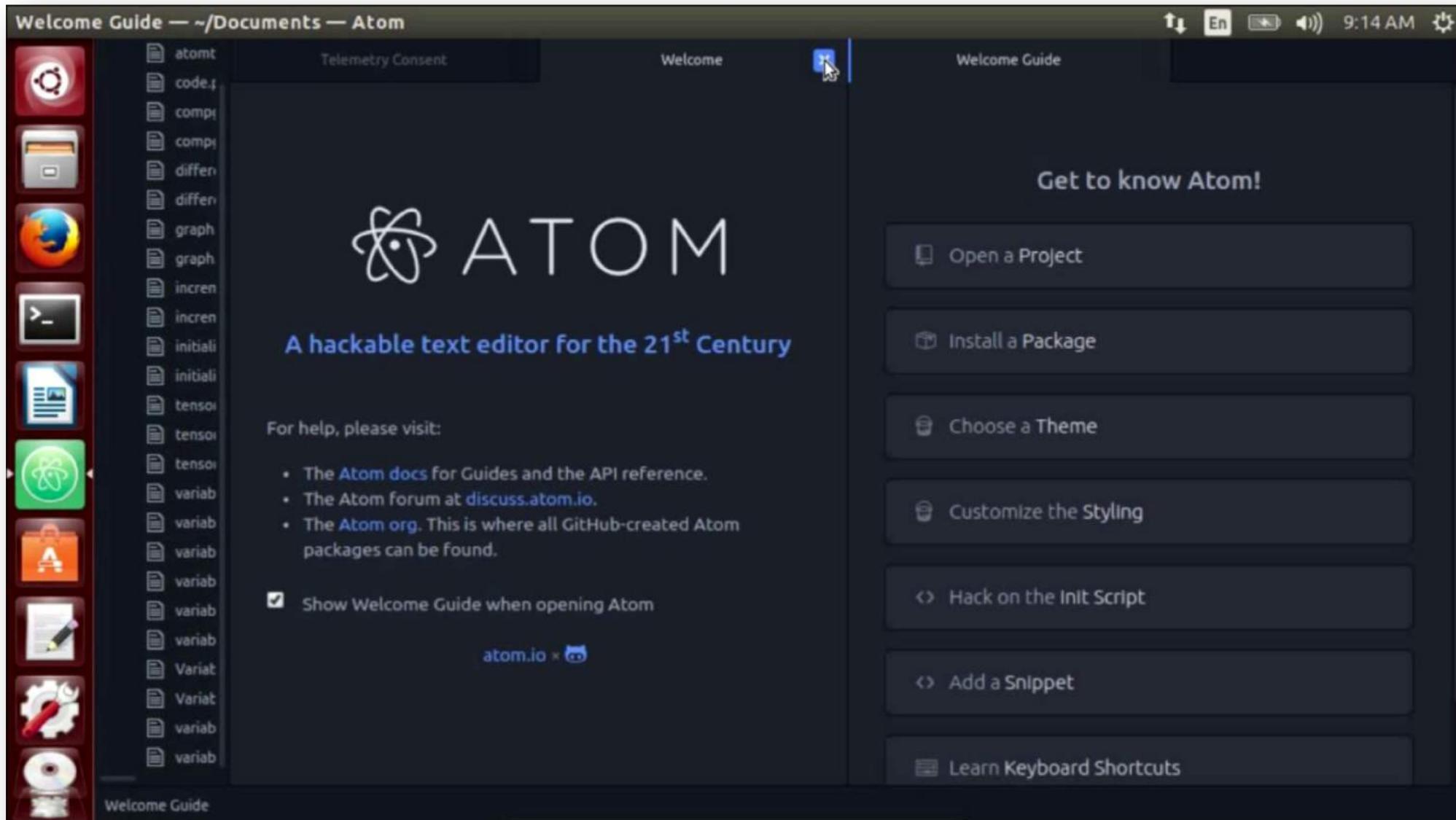
configValues = configparser.RawConfigParser()
configValues.read('config.ini')

TWITTER_API = TwitterAPI(configValues.get('TwitterSettings', 'consumer_key'),
                         configValues.get('TwitterSettings', 'consumer_secret'),
                         configValues.get('TwitterSettings', 'access_token_key'),
                         configValues.get('TwitterSettings', 'access_token_secret'))
```

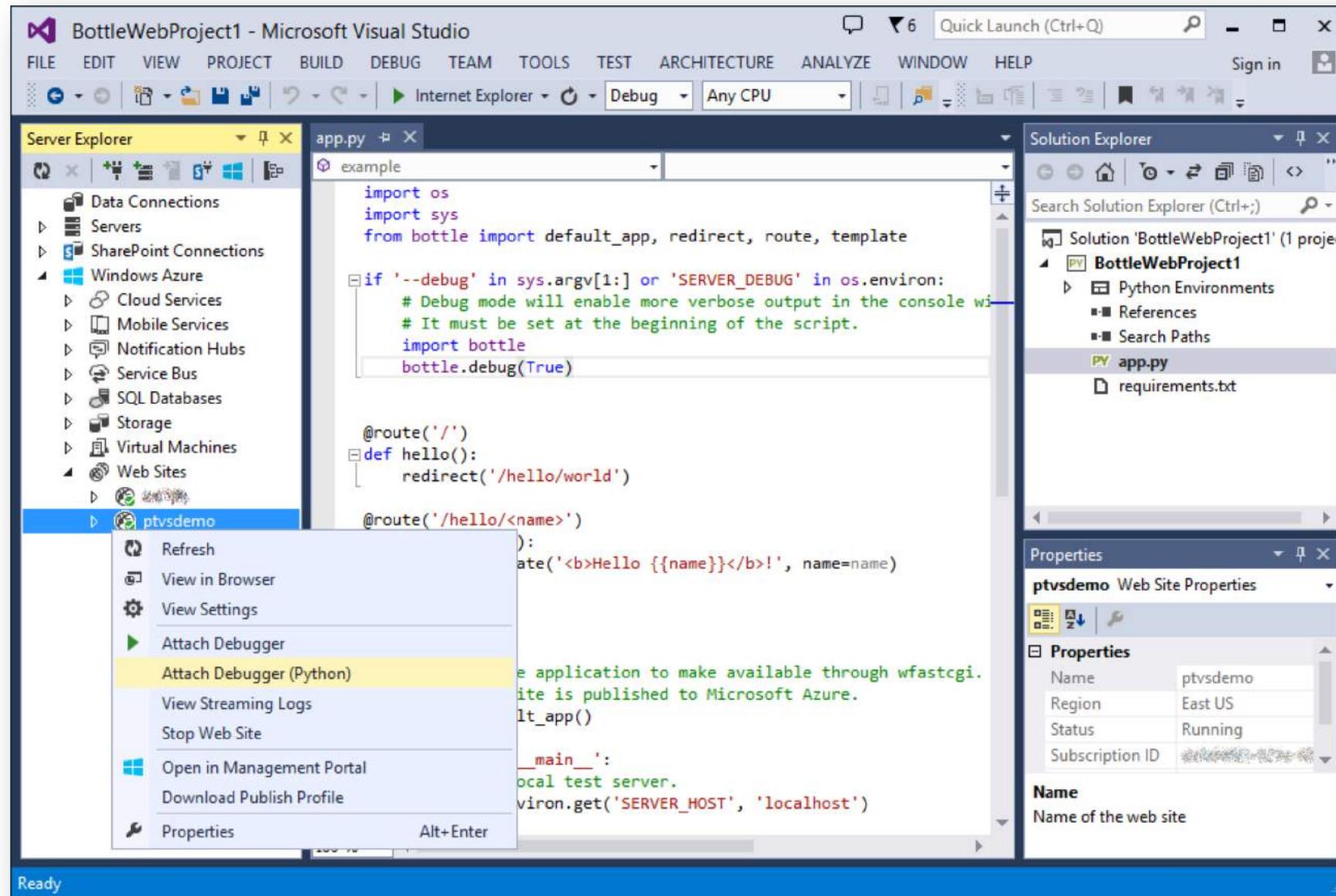
Ambientes de desenvolvimento (Sublime Text)



Ambientes de desenvolvimento (Atom)



Ambientes de desenvolvimento (Visual Studio)



Ambientes de desenvolvimento (PyCharm)

The screenshot shows the PyCharm Professional 2016.2.3 IDE interface. The title bar indicates the project is 'angry-birds-python' and the file being edited is 'main.py'. The menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, and Help. The toolbar has icons for Project, Run, Stop, Step, Refresh, and others. The left sidebar shows the project structure with 'angry-birds-python' containing 'src' (which includes 'characters.py', 'level.py', and 'main.py'), 'pymunk-4.0.0', 'resources', and other files like '.gitignore', 'LICENSE', 'README.md', and 'readme-portugues.txt'. The right sidebar shows 'External Libraries'. The bottom status bar shows '12 items (6.9 MB), Free space: 502.1 GB', '2 processes running...', 'LF', 'UTF-8', 'Git: master', and a system tray with icons for Menu, Home, PyCharm: JetBrains, angry-birds-python, bin - File Manager, Command Line, LXTerminal, and network status.

```
import ...
current_path = os.getcwd()
sys.path.insert(0, os.path.join(current_path, "../pymunk-4.0.0"))
import pymunk as pm
from characters import Bird
from level import Level

pygame.init()
screen = pygame.display.set_mode((1200, 650))
redbird = pygame.image.load(
    "../resources/images/red-bird3.png").convert_alpha()
background2 = pygame.image.load(
    "../resources/images/background3.png").convert_alpha()
sling_image = pygame.image.load(
    "../resources/images/sling-3.png").convert_alpha()
full_sprite = pygame.image.load(
    "../resources/images/full-sprite.png").convert_alpha()
rect = pygame.Rect(181, 1050, 50, 50)
cropped = full_sprite.subsurface(rect).copy()
pig_image = pygame.transform.scale(cropped, (30, 30))
buttons = pygame.image.load(
    "../resources/images/selected-buttons.png").convert_alpha()
pig_happy = pygame.image.load(
    "../resources/images/pig_failed.png").convert_alpha()
stars = pygame.image.load(
    "../resources/images/stars-edited.png").convert_alpha()
rect = pygame.Rect(0, 0, 200, 200)
star1 = stars.subsurface(rect).copy()
rect = pygame.Rect(204, 0, 200, 200)
star2 = stars.subsurface(rect).copy()
rect = pygame.Rect(426, 0, 200, 200)
star3 = stars.subsurface(rect).copy()
rect = pygame.Rect(164, 10, 60, 60)
pause_button = buttons.subsurface(rect).copy()
rect = pygame.Rect(24, 4, 100, 100)
replay_button = buttons.subsurface(rect).copy()
rect = nvname.Rect(142, 365, 130, 100)
```

Ambientes de desenvolvimento (Online)

The screenshot shows a repl.it interface for Python 3.6. The code editor contains the following script:

```
Python 3.6
1 print("SELINFO")
2 num1 = 2
3 num2 = 9
4 print("SOMA = %d" % (num1+num2))
```

The output window shows the execution results:

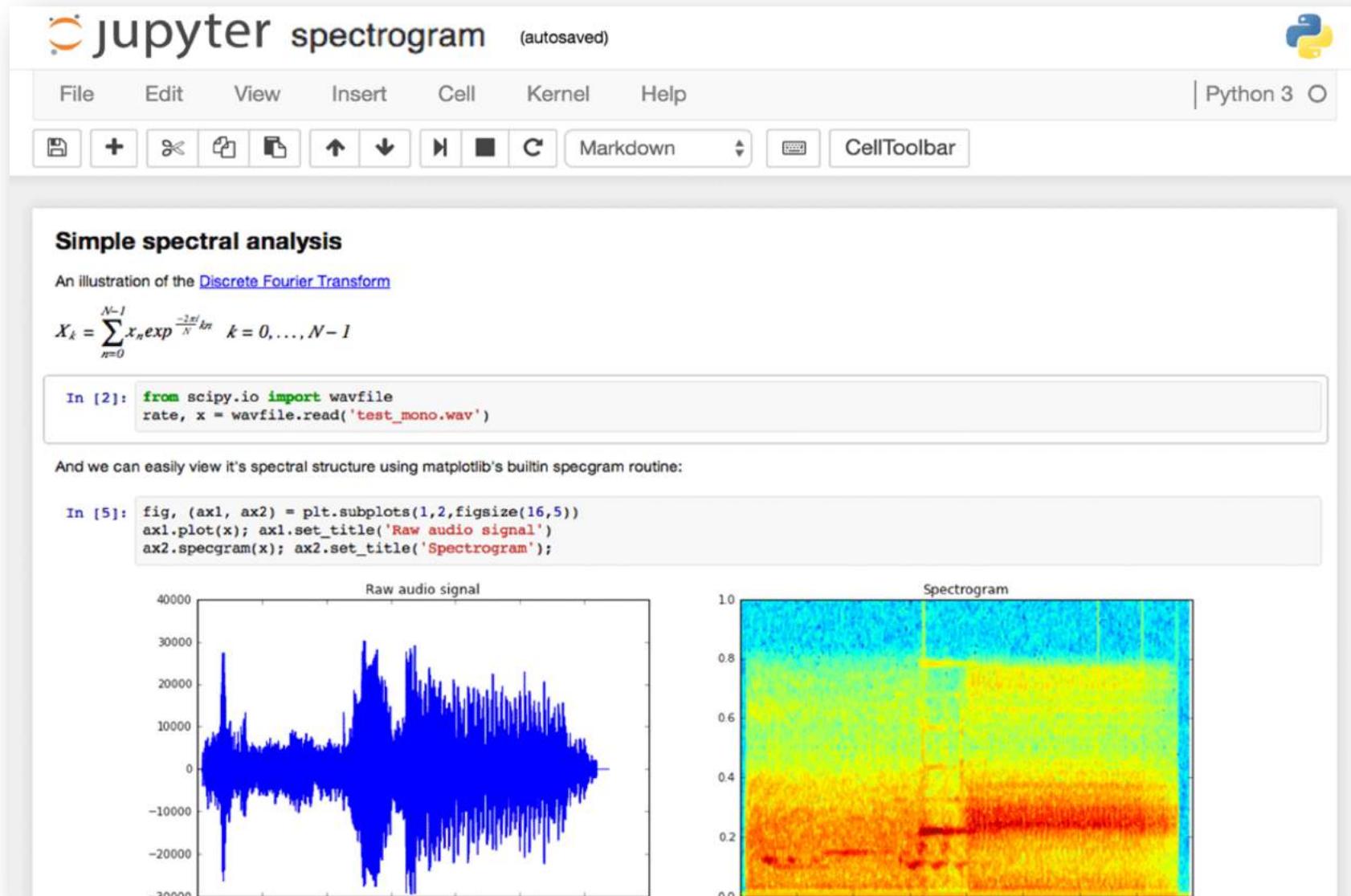
```
SELINFO
SOMA = 11
```

The Global frame pane displays the variable values:

num1	2
num2	9

The repl.it logo is visible on the left, and the PythonTutor.com logo is at the bottom right.

Ambientes de desenvolvimento (Jupyter)



**Talk is cheap.
Show me the code.**

Linus Torvalds