

How To:

Desarrollo en Python

Primeros pasos con PyCharm



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 @reroes

¿Qué es Python?

- Lenguaje de programación potente y fácil de aprender.
- Contiene estructuras de datos de alto nivel eficientes.
- Sintaxis elegante y la tipificación dinámica.
- Desarrollo rápido de aplicaciones en muchas áreas en la mayoría de las plataformas.

Tomado:

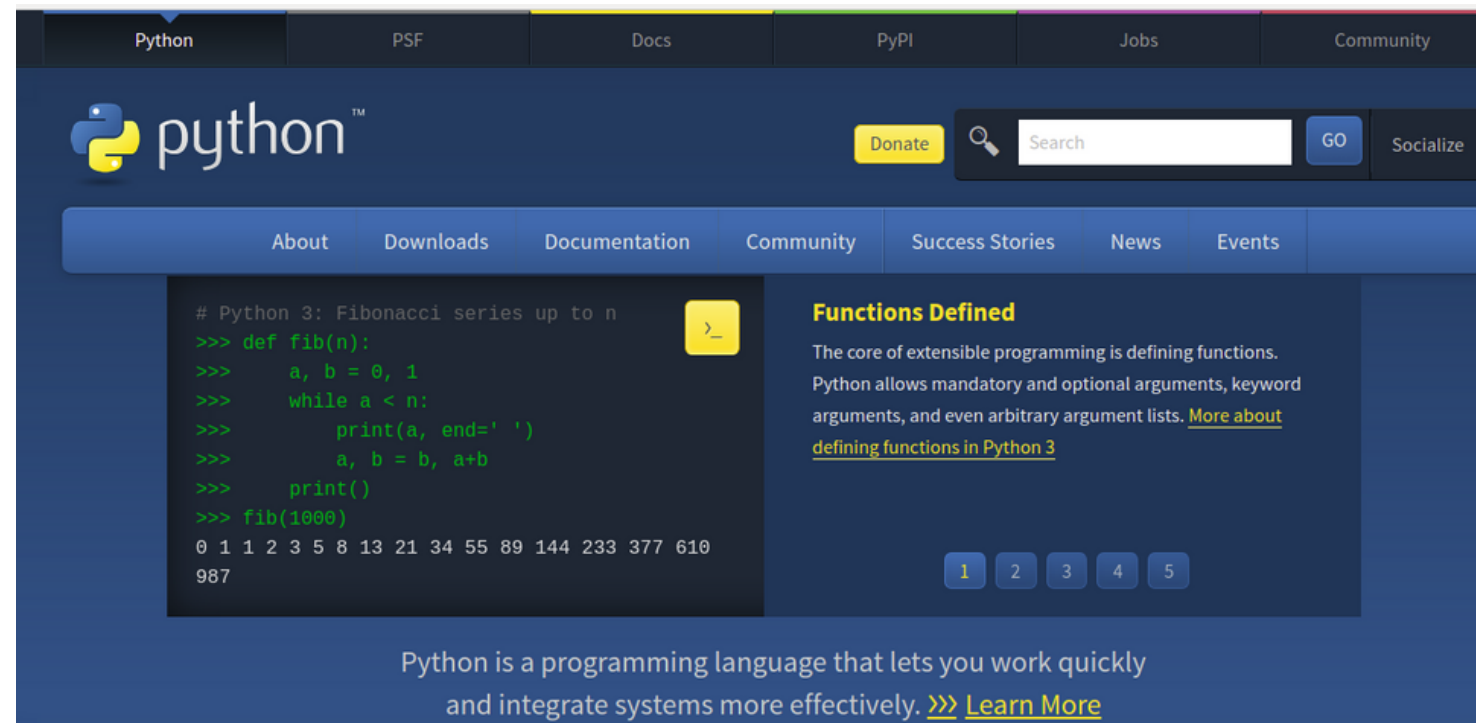
<https://docs.python.org/3/tutorial/index.html>

Guido van Rossum



Documentación - Comunidad

- <https://docs.python.org/3/tutorial/index.html>



Beginner	Moderate	Advanced	General
<ul style="list-style-type: none"> Beginner's Guide Python FAQs 	<ul style="list-style-type: none"> Python Periodicals Python Books 	<ul style="list-style-type: none"> Python Packaging User Guide In-development Docs Guido's Essays 	<ul style="list-style-type: none"> PEP Index Python Videos Developer's Guide



Instalación

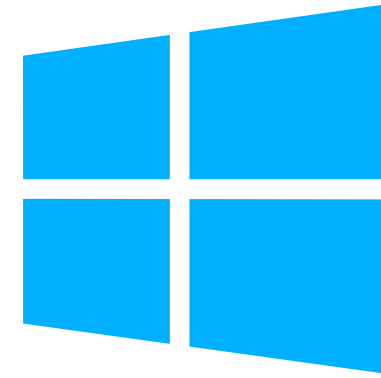


Download Python

The official home of the Python Programming Language

[Python.org / /static/humans.txt](https://python.org/static/humans.txt)

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



```

reroes@reroes:~/entornos$ python
Python 2.7.17 (default, Feb 27 2021, 15:10:58)
[GCC 7.5.0] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>>

(envpy39-dev) reroes@reroes:~/entornos$ python
Python 3.9.9 (main, Nov 16 2021, 03:05:18)
[GCC 7.5.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>

(envpy38) reroes@reroes:~/entornos$ python
Python 3.8.7 (default, Dec 21 2020, 20:10:35)
[GCC 7.5.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>

(envpy36) reroes@reroes:~/entornos$ python
Python 3.6.8 (default, Oct 7 2019, 12:59:55)
[GCC 8.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>

```



Instalación

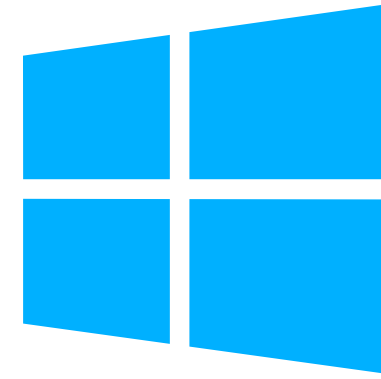


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<https://www.python.org/downloads/>



Versiones para trabajar

- Python 3.6
- Python 3.7
- Python 3.8
- Python 3.9
- Python 3.10

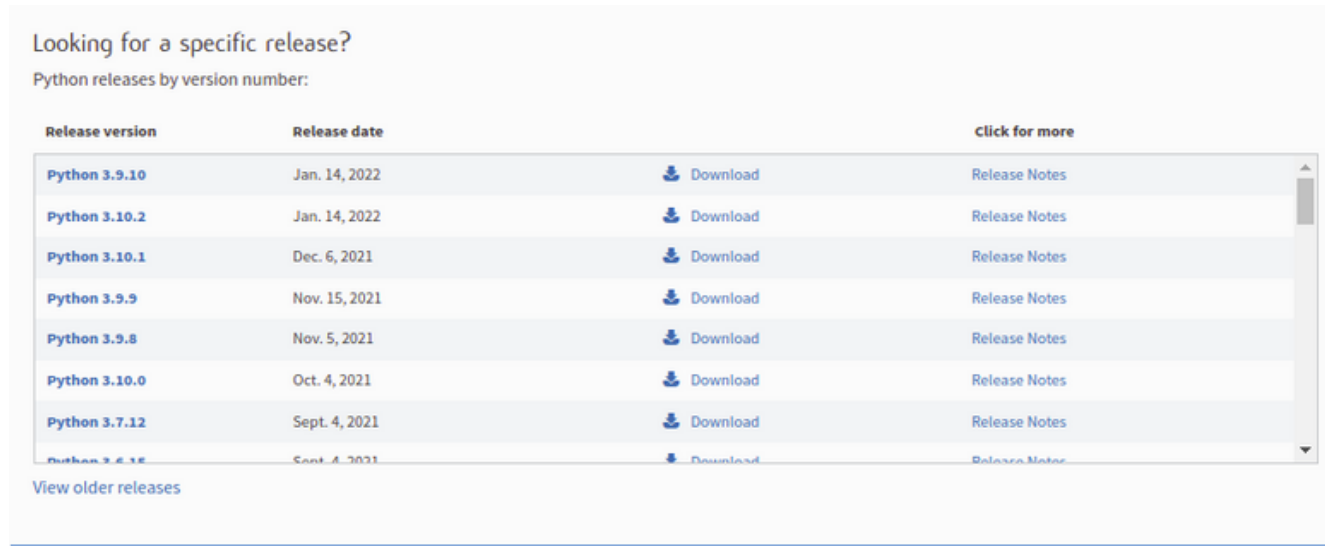
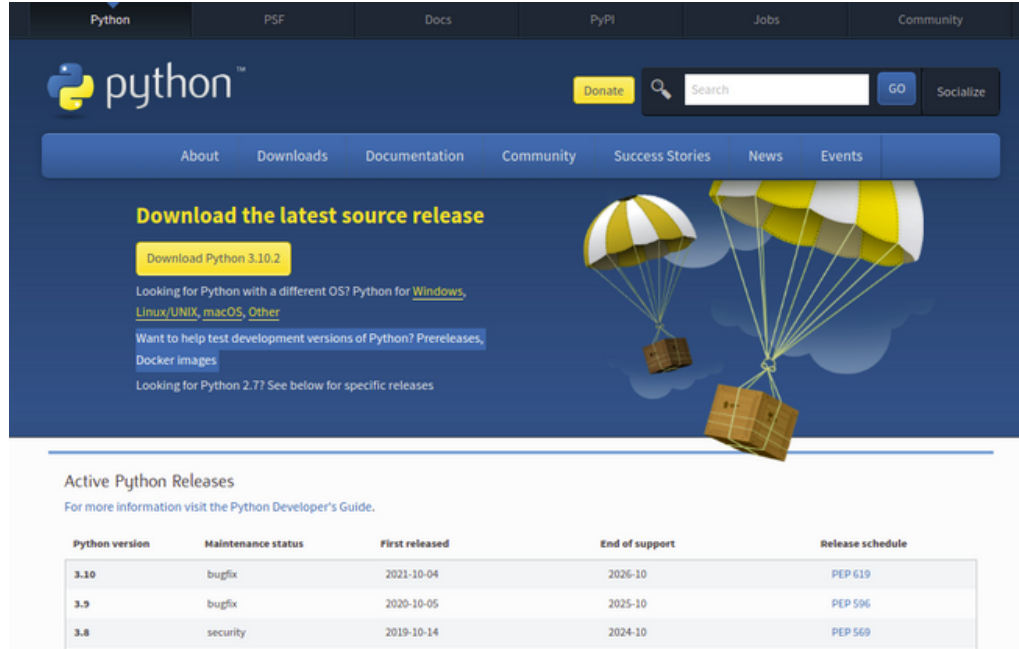
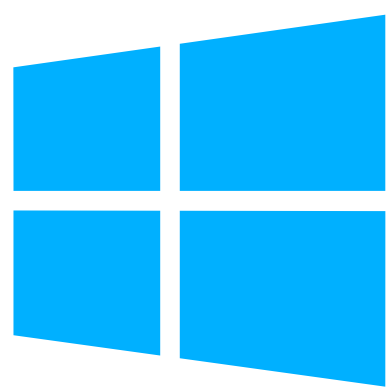


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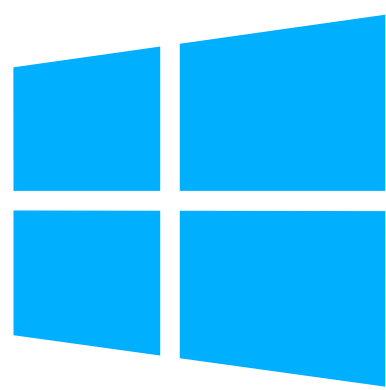


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Looking for a specific release?
Python releases by version number:

Release version	Release date		Click for more
Python 3.9.10	Jan. 14, 2022	Download	Release Notes
Python 3.10.2	Jan. 14, 2022	Download	Release Notes
Python 3.10.1	Dec. 6, 2021	Download	Release Notes
Python 3.9.9	Nov. 15, 2021	Download	Release Notes
Python 3.9.8	Nov. 5, 2021	Download	Release Notes
Python 3.10.0	Oct. 4, 2021	Download	Release Notes
Python 3.7.12	Sept. 4, 2021	Download	Release Notes
Python 3.6.15	Sept. 4, 2021	Download	Release Notes

[View older releases](#)

Files

Version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		1440acb71471e2394befdb30b1a958d1	25800844	SIG
XZ compressed source tarball	Source release		e754c4b2276750fd5b4785a1b443683a	19154136	SIG
macOS 64-bit Intel-only installer	macOS	for macOS 10.9 and later, deprecated	2714cb9e6241cf7e2f9022714a55d27a	30395760	SIG
macOS 64-bit universal2 installer	macOS	for macOS 10.9 and later	c2393ab11a423d817501b8566ab5da9f	38217233	SIG
Windows embeddable package (32-bit)	Windows		c1d2af96d9f3564f57f35cfc3c1006eb	7671509	SIG
Windows embeddable package (64-bit)	Windows		b8e8bfa8e56edcd654d15e3bdc2e29a	8509821	SIG
Windows help file	Windows		784020441c1a25289483d3d8771a8215	9284044	SIG
Windows installer (32-bit)	Windows		457d648dc8a71b6bc32da30a7805c55b	27767040	SIG
Windows installer (64-bit)	Windows	Recommended	747ac35ae667f4ec1ee3b001e9b7dbc6	28909456	SIG

Nombre

python-3.9.10-amd64.exe



Entornos de Programación Instalación

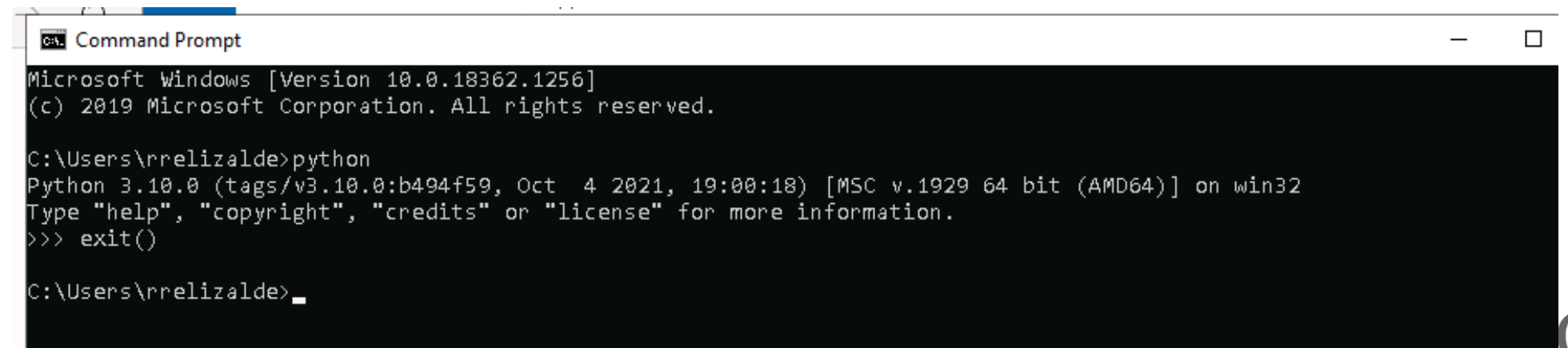
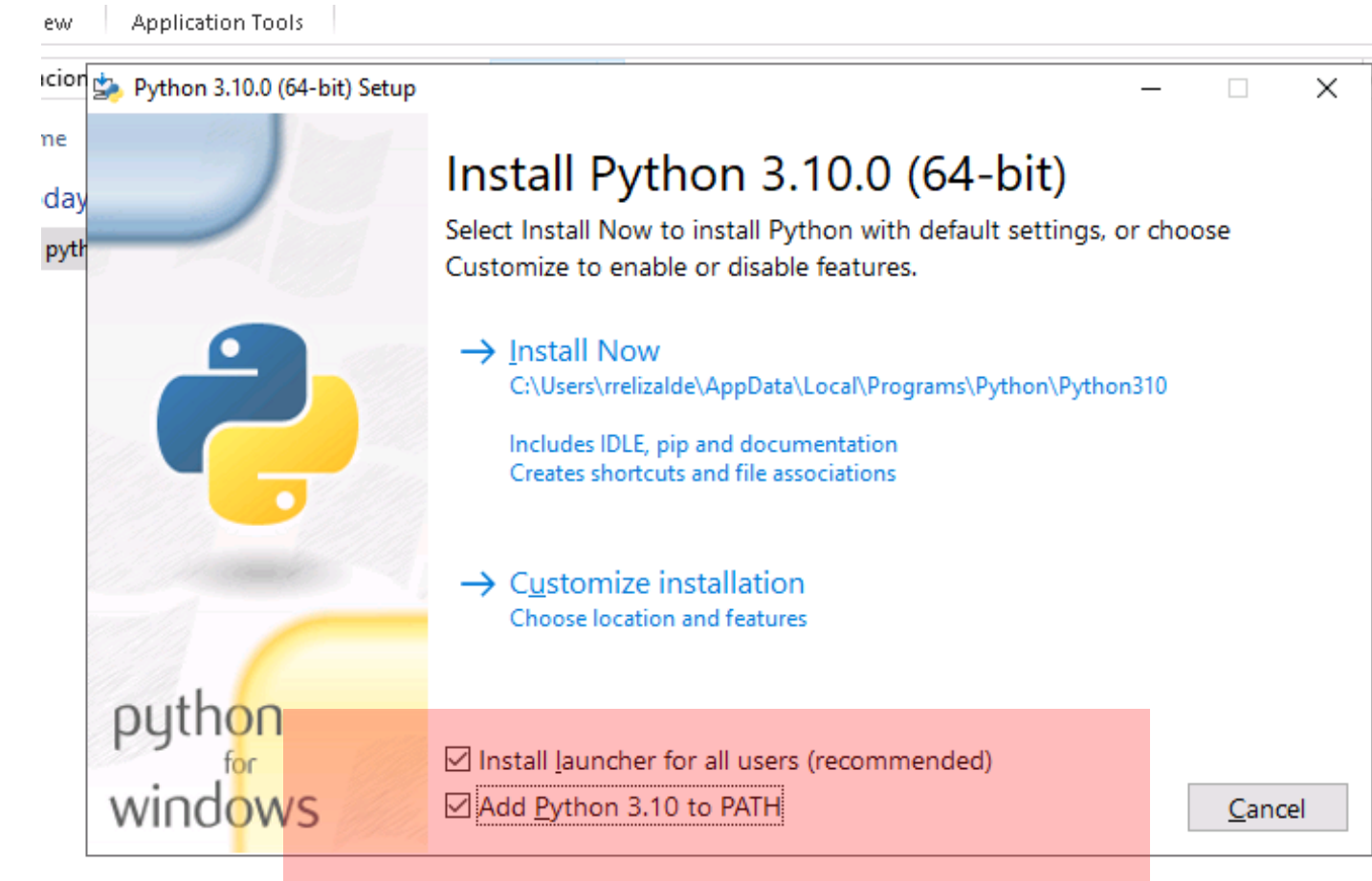
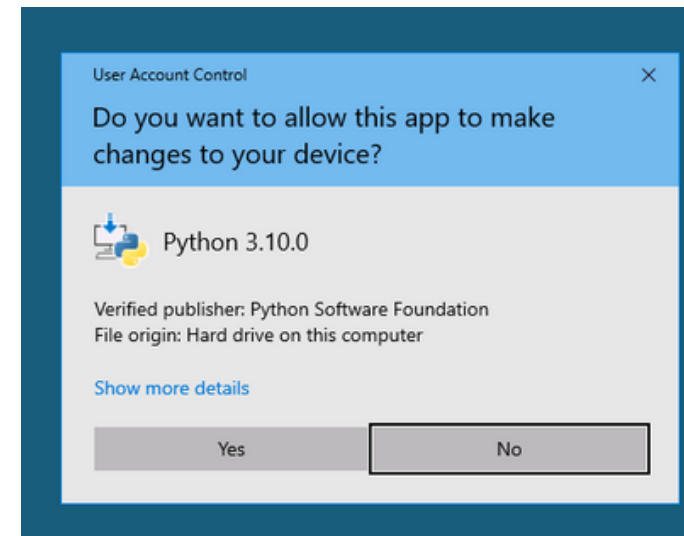
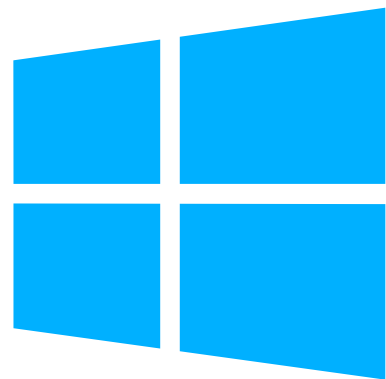


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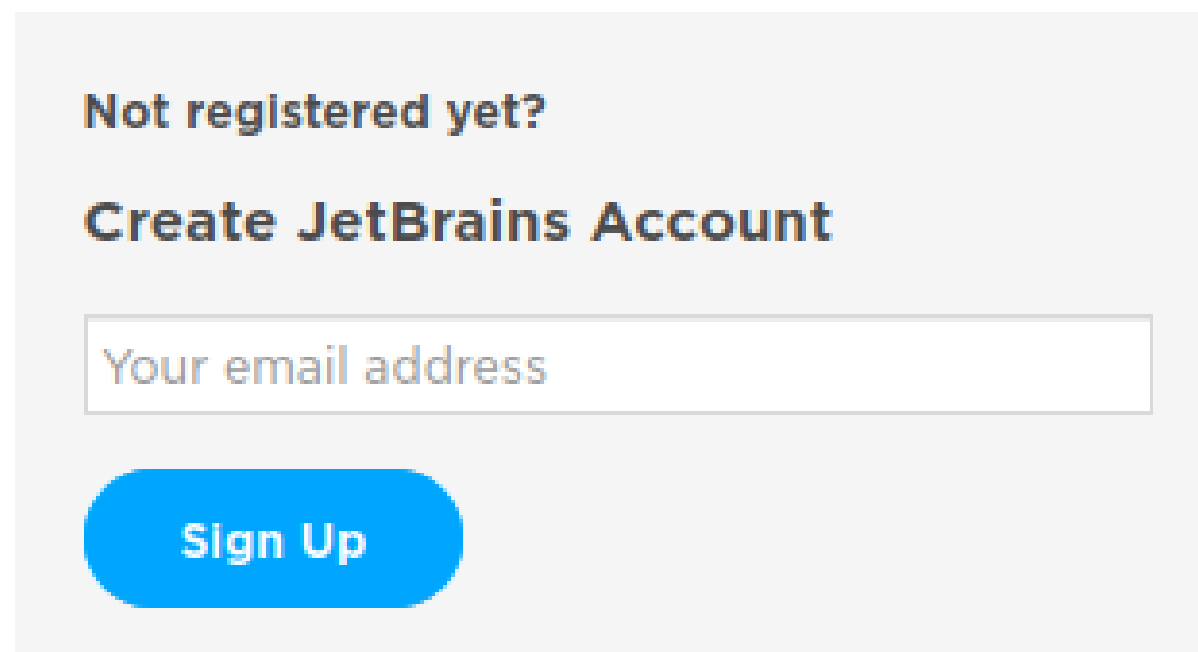
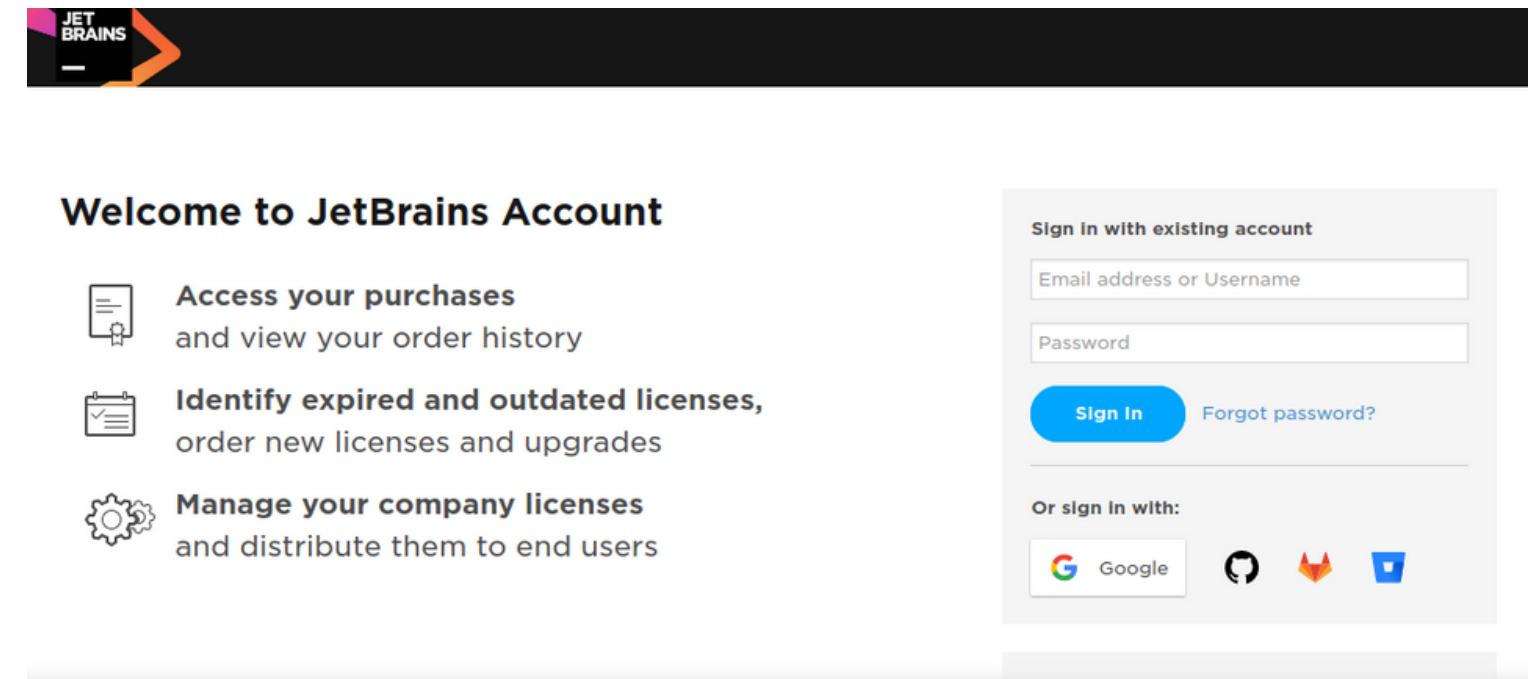
<https://www.python.org/downloads/>



Instalación - PyCharm

1. Ingresar a: <https://account.jetbrains.com/login>

2. Registrarse



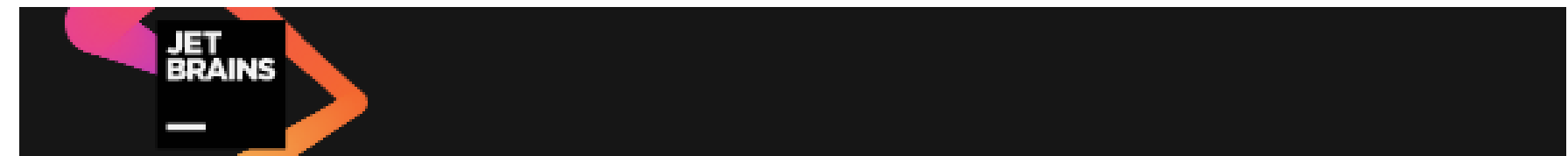
Instalación - PyCharm

3. Ingresar el correo en Crear Cuenta

Not registered yet?

Create JetBrains Account

Sign Up



Thank you for registering your JetBrains Account!

Please follow the instructions we just emailed to you.



Instalación - PyCharm

3. Esperar correo institucional

Hello!

Thank you for creating your JetBrains Account.

To complete your registration, click the link below:

[Confirm your account](#)

4. Ingresar los datos necesarios



Welcome to JetBrains Account!

Please complete the registration form below

Email Address

First Name

Last Name

Username

Latin symbols (A-z), digits (0-9) or a valid email address 5 to 100 characters long.

Please make sure you choose a strong password, as your account will have access to your purchases.

Password

Repeat Password

☐ I have read and I accept the [JetBrains Account](#)


JetBrains Account allows you:

- Access your purchases and view your order history
- Identify expired and outdated licenses, order new licenses and upgrades
- Manage your company licenses and distribute them to end users



Instalación - PyCharm

4. Ingresar los datos necesarios



Welcome to JetBrains Account!

Please complete the registration form below

Email Address jbtorres1@utpl.edu.ec

First Name

Last Name

Username

Latin symbols (A-z), digits (0-9) or a valid email address 5 to 100 characters long.

Please make sure you choose a strong password, as your account will have access to your purchases.

Password

Repeat Password

JetBrains Account allows you:

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☐ I have read and I accept the [JetBrains Account Agreement](#)

Latin symbols (A-z), digits (0-9) or a valid email address 5 to 100 characters long.

Please make sure you choose a strong password, as your account will have access to your purchases.

Password

.....



Repeat Password

.....

☒ I have read and I accept the [JetBrains Account Agreement](#)

Submit

You will receive emails from us in **Español**.

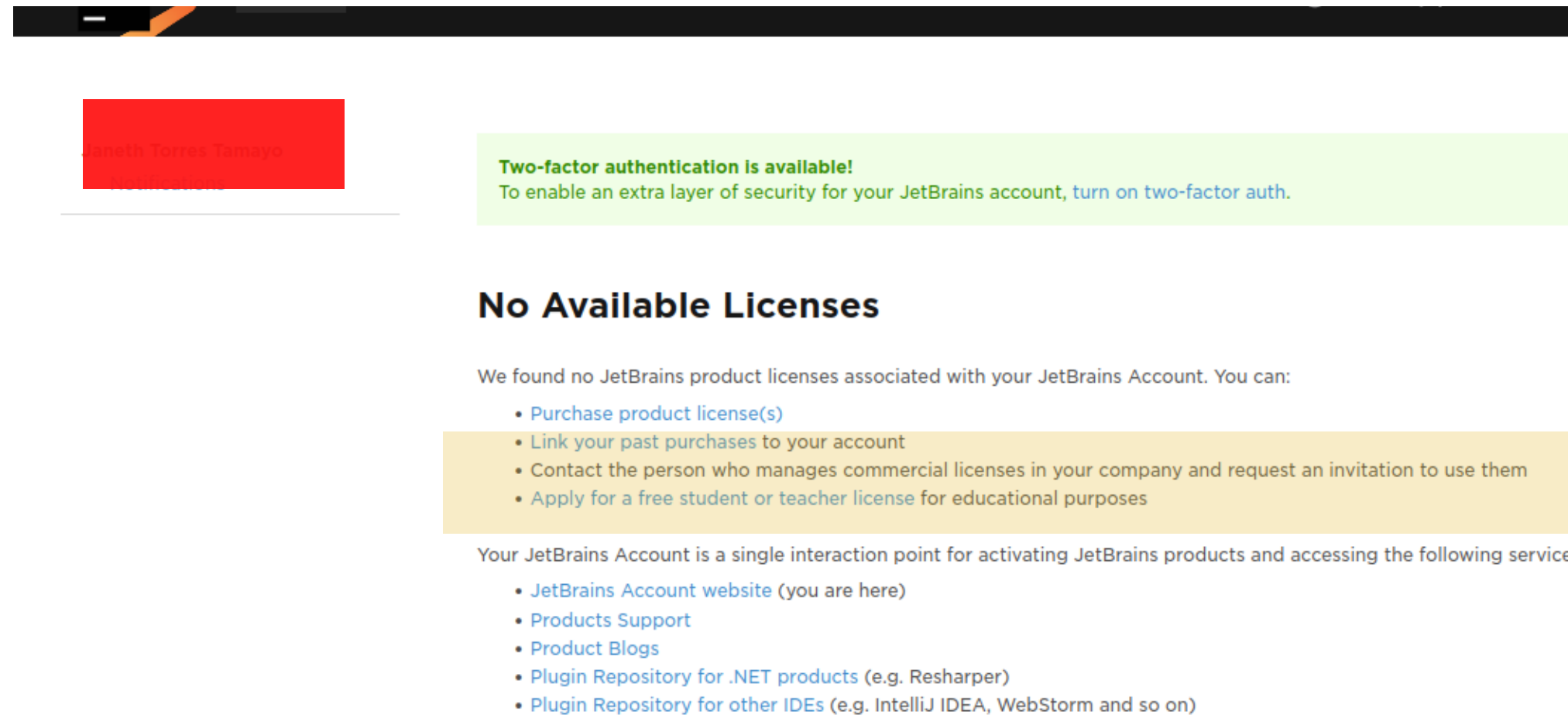
☒ [Change](#)

You can set preferred language anytime in JetBrains Account.



Instalación - PyCharm

5. Revisar la información



Janeth Torres Tamayo

Two-factor authentication is available!
To enable an extra layer of security for your JetBrains account, [turn on two-factor auth](#).

No Available Licenses

We found no JetBrains product licenses associated with your JetBrains Account. You can:

- [Purchase product license\(s\)](#)
- [Link your past purchases to your account](#)
- Contact the person who manages commercial licenses in your company and request an invitation to use them
- [Apply for a free student or teacher license](#) for educational purposes

Your JetBrains Account is a single interaction point for activating JetBrains products and accessing the following services:

- [JetBrains Account website](#) (you are here)
- [Products Support](#)
- [Product Blogs](#)
- [Plugin Repository for .NET products](#) (e.g. ReSharper)
- [Plugin Repository for other IDEs](#) (e.g. IntelliJ IDEA, WebStorm and so on)



Instalación - PyCharm

6. Ingresar la opción licencia educativa

Who can get free individual licenses for education

Students and faculty from accredited educational institutions (high schools, colleges, and universities) are welcome to apply.

Students need to be enrolled in an accredited educational program that takes one or more years of full-time study to complete.

Not sure about the license terms? [Check out the FAQ](#) or read the full terms [here](#).

Apply now

Free Educational Licenses

Learn or teach coding with best-in-class development tools from JetBrains!



Individual licenses for students and teachers

Get free access to all JetBrains IDEs for personal use at school or at home.

Who can get free individual licenses for education

Students and faculty from accredited educational institutions (high schools, colleges, and universities) are welcome to apply.

Students need to be enrolled in an accredited educational program that takes one or more years of full-time study to complete.



Instalación - PyCharm

6. Ingresar la nueva información que se solicita

Productos JetBrains para el aprendizaje

Antes de enviar su solicitud, lea [las preguntas frecuentes](#) y [las condiciones de la suscripción educativa](#).

Solicitar con:

[Correo electrónico de la universidad](#)[Carnet ISIC/ITIC](#)[Documento oficial](#)[GitHub](#)

Estado:

☒ Soy estudiante

☐ Soy docente

Nivel de estudio:

Estudios de grado

¿Su campo principal de estudios es la informática o la Ingeniería?

☒ Sí

☐ No

Dirección de correo electrónico:

Correo electrónico de la universidad, p. ej., js@mit.edu

Confirmo que el correo electrónico de la universidad que indico arriba es válido y que me pertenece.

Nombre:

Su **nombre real** tal como aparece en su pasaporte, carnet de conducir u otro documento legal.

Nombre

Apellidos

País:

Ecuador

☐ Tengo menos de 13 años

☐ Tengo menos de 13 años

☐ He leído y acepto el [Acuerdo de cuenta de JetBrains](#)

☐ Doy mi consentimiento a que se utilice mi nombre, dirección de correo electrónico y datos de ubicación en comunicaciones por correo electrónico sobre los productos o servicios de JetBrains que utilizo yo o mi organización. [Más](#)

SOLICITAR PRODUCTOS GRATUITOS

Productos JetBrains para el aprendizaje

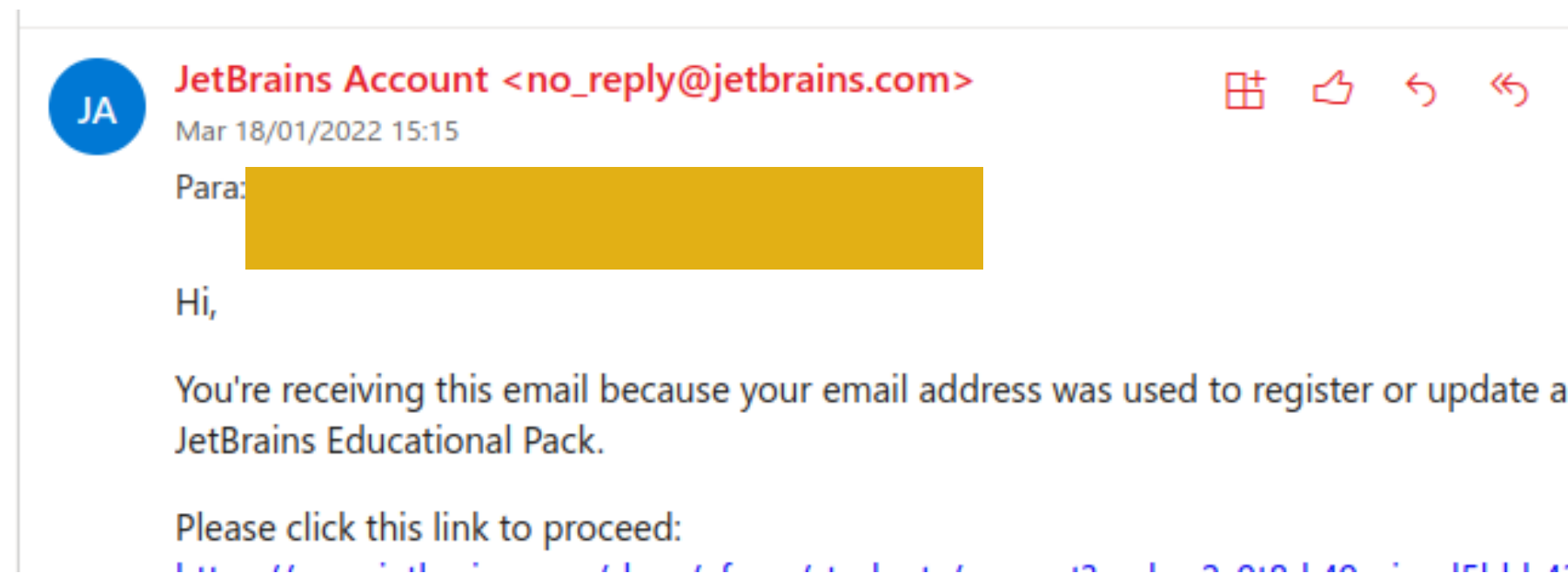
¡Gracias!

Siga las instrucciones que aparecen en el correo electrónico de verificación que le hemos enviado a . Puede vincular su JetBrains Educational Pack a otra dirección de correo electrónico más adelante.

« [Descubra nuestros productos](#)

Instalación - PyCharm

7. Seguir las instrucciones del correo electrónico



Keep it going! You're just one step away from using JetBrains Educational Pack for free.

Get started to use

Instalación - PyCharm

8. Aceptar las condiciones

TOOLBOX SUBSCRIPTION AGREEMENT FOR STUDENTS AND TEACHERS

Version 4.0, effective as of September 1, 2021

IMPORTANT! READ CAREFULLY:

THIS IS A LEGAL AGREEMENT. BY CLICKING ON THE "I AGREE" (OR SIMILAR) BUTTON THAT IS PRESENTED TO CUSTOMER AT THE TIME OF PURCHASE, OR BY DOWNLOADING, INSTALLING, COPYING, SAVING ON CUSTOMER'S DEVICE, OR OTHERWISE USING JETBRAINS SOFTWARE, SUPPORT, OR PRODUCTS, CUSTOMER BECOMES A PARTY TO THIS AGREEMENT AND CONSENTS TO BE BOUND BY ALL THE TERMS AND CONDITIONS SET FORTH BELOW.

JetBrains and Customer may each also be referred to individually as a "Party" or jointly as the "Parties".

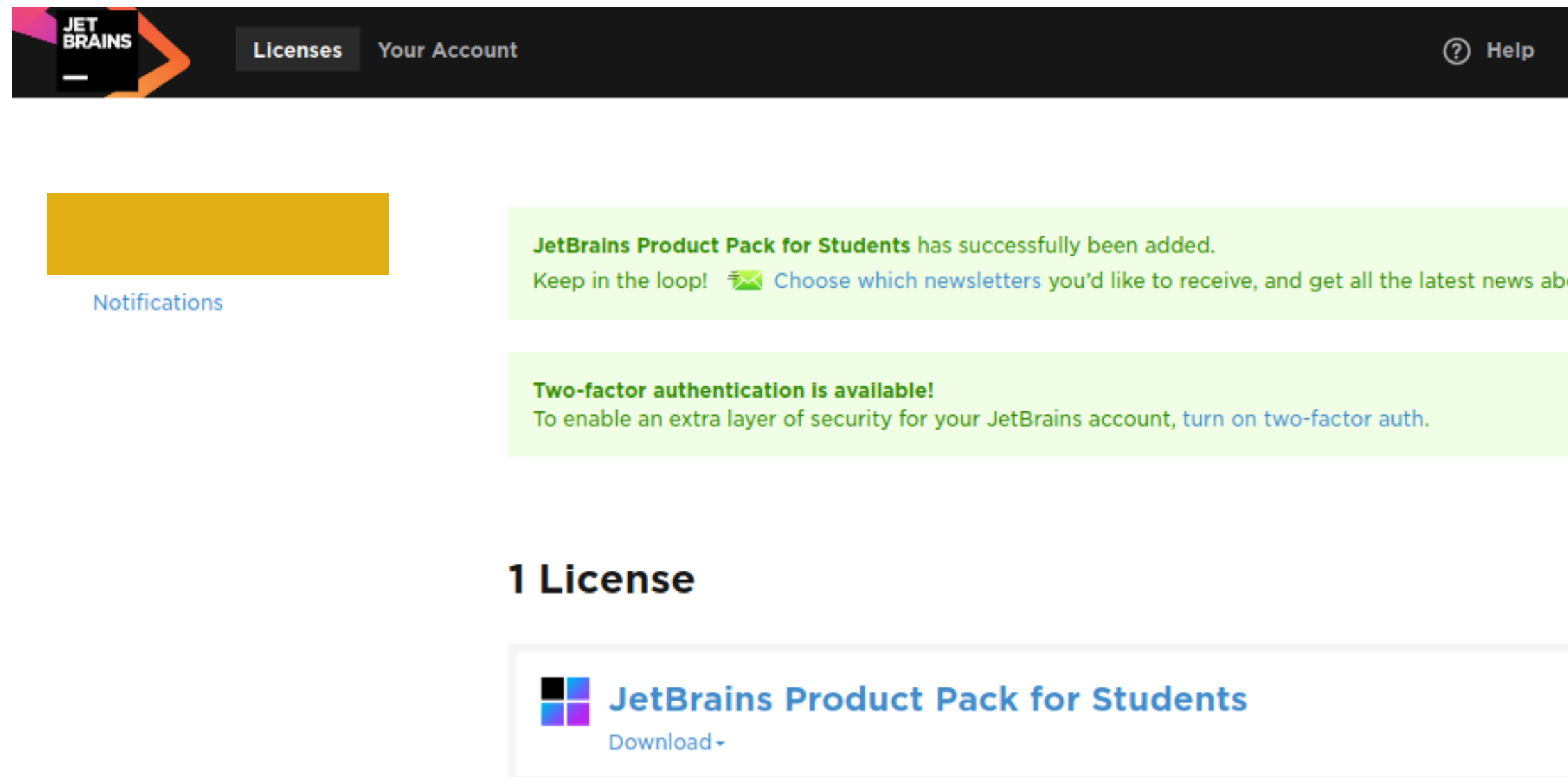
1. PARTIES

Please review and accept this license agreement to proceed with product activation.

I Accept

Instalación - PyCharm

9. Ingresar nuevamente a :
<https://account.jetbrains.com/login>



Instalación - PyCharm

10. Ver listado de licencias disponibles

License restriction: For educational use only

Valid through: January 17, 2023

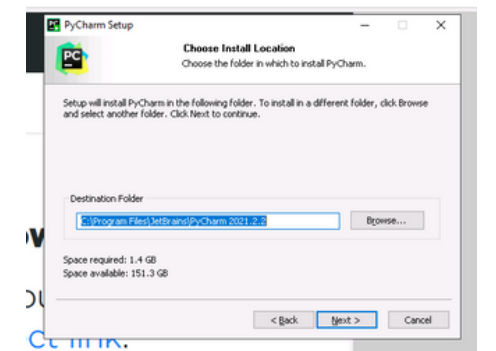
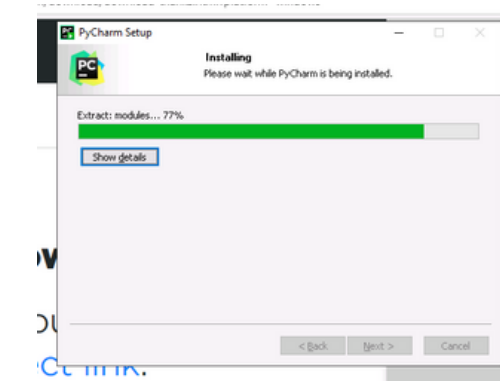
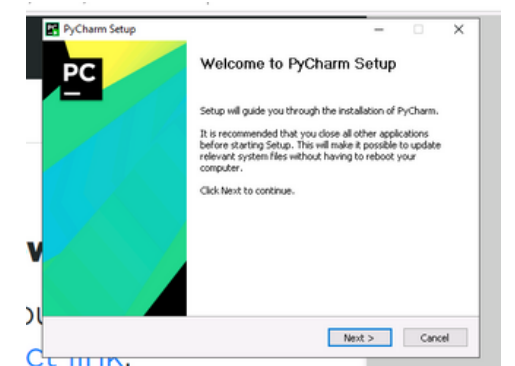
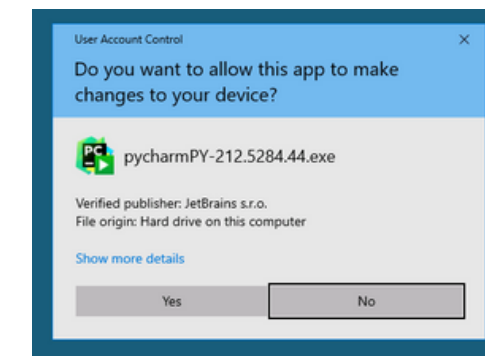
Following products included:

- [AppCode](#)
- [CLion](#)
- [DataGrip](#)
- [DataSpell](#)
- [dotCover](#)
- [dotMemory](#)
- [dotTrace](#)
- [GoLand](#)
- [IntelliJ IDEA Ultimate](#)
- [PhpStorm](#)
- [PyCharm](#)
- [ReSharper](#)
- [ReSharper C++](#)
- [Rider](#)
- [RubyMine](#)
- [WebStorm](#)

After downloading and installing the software, simply run it and follow the on-screen prompts to sign in with your JetBrains Account.

Instalación - PyCharm

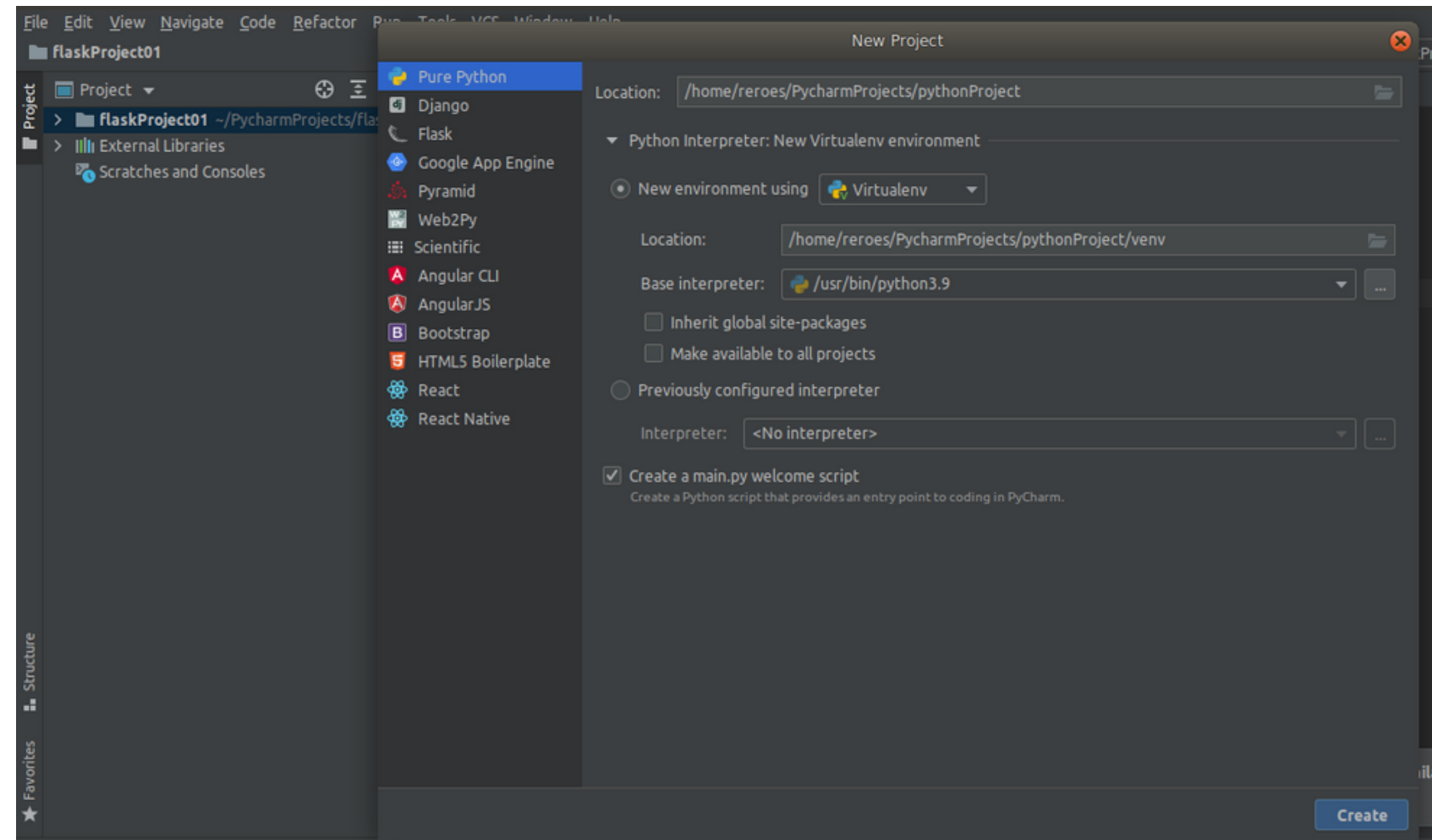
11. Ingresar a PyCharm; descargar e instalar



Instalación - PyCharm



11. Ingresar a PyCharm en la máquina local



Instalación



Download Python

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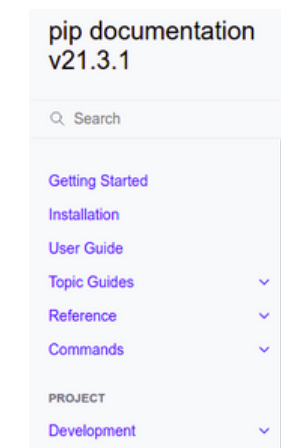
[Python.org / /static/humans.txt](https://python.org/static/humans.txt)

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



Usar pip, para instalar paquetes.

<https://pip.pypa.io/en/stable/>



pip

pip is the [package installer for Python](#). You can use it to install packages from the [Python Package Index](#) and other indexes.

If you want to learn about how to use pip, check out the following resources:

- [Getting Started](#)
- [Python Packaging User Guide](#)

If you find bugs, need help, or want to talk to the developers, use our mailing lists or chat rooms:

- [GitHub Issues](#)
- [Discourse channel](#)
- [User IRC](#)
- [Development IRC](#)

Paquetes a instalar:

- Ipython: `pip install ipython`
- Virtualenv: `pip install virtualenv`



Uso de virtualenv

Paquetes a instalar:

- Virtualenv: pip install virtualenv

Comandos:

- Crear:
 - virtualenv ruta-a-carpeta-entorno
- Iniciar entorno:
 - `source ruta-a-carpeta-entorno/bin/activate`
 - `\ruta-a-carpeta-entorno\Scripts\activate.bat`



`virtualenv` is a tool to create isolated Python environments. Since Python `3.3`, a subset of it has been integrated into the standard library under the `venv` module. The `venv` module does not offer all features of this library, to name just a few more prominent:

- is slower (by not having the `app-data` seed method),
- is not as extendable,
- cannot create virtual environments for arbitrarily installed python versions (and automatically discover these),
- is not upgrade-able via `pip`,
- does not have as rich programmatic API (describe virtual environments without creating them).



Instalación

Usar pip, para instalar paquetes.

<https://pip.pypa.io/en/stable/>

IP[y]: IPython
Interactive Computing

pip install ipython



pip install jupyter
pip install jupyterlab



pip install pandas



pip install django



pip install flask



pip install boken



Ejecutar código en Python

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



Opción 1:

- Abrir un editor de texto y guardar con la extensión .py
- Ingresar el código Python
- Guardar los cambios
- Abrir un terminal en su computador
- Ubicarse en la carpeta donde está el archivo guardado.
- Ejecutar el comando: `python nombre-archivo.py`

```
ntroduccion-python/ejercicios$ python ejercicio5.py
Ingrese nombre del persona: René
Ingrese edad de persona: 30
Ingrese el sueldo de la persona: 500.2
Nombre:René
Edad:30
Sueldo:500.20
```



Ejecutar código en Python

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



Opción 2:

- Usar la consola de python que se instala por defecto

```
ntroduccion-python/ejercicios$ python
Python 3.6.8 (default, Oct  7 2019, 12:59:55)
[GCC 8.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>>
>>>
>>>
>>>
>>>
```



Ejecutar código en Python

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



Opción 3:

- Usar la librería ipython

```
ntroduccion-python/ejercicios$ ipython
Python 3.6.8 (default, Oct 7 2019, 12:59:55)
Type "copyright", "credits" or "license" for more information.

IPython 5.6.0 -- An enhanced Interactive Python.
?                -> Introduction and overview of IPython's features.
%quickref        -> Quick reference.
help             -> Python's own help system.
object?         -> Details about 'object', use 'object??' for extra details.

In [1]:
```

Ejecutar código en Python

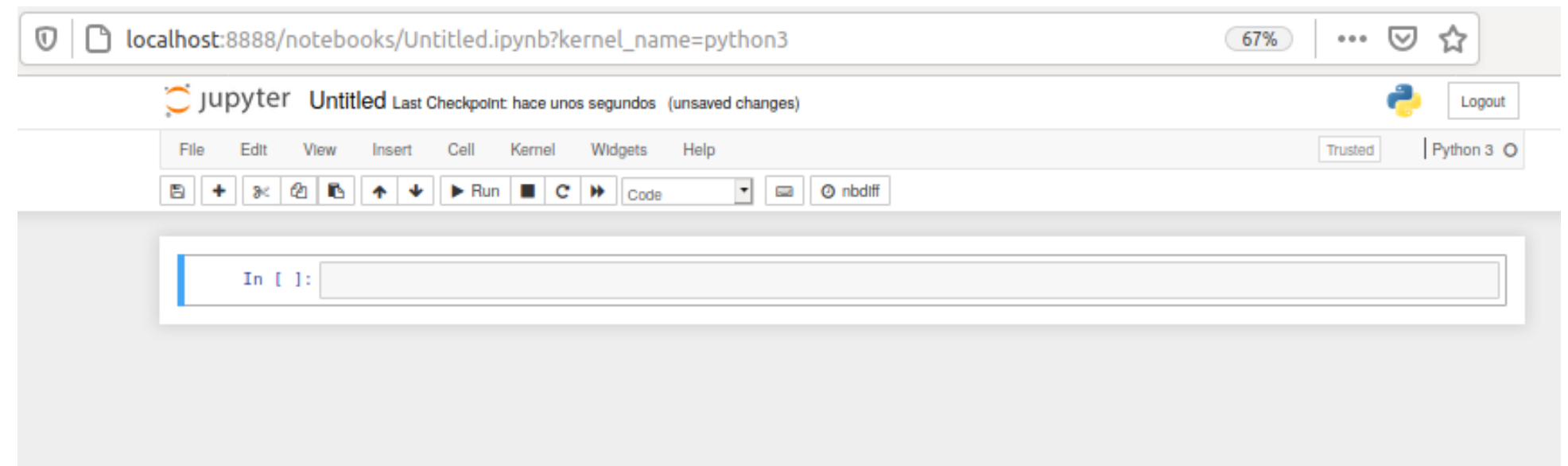
<https://www.python.org/downloads/>



Opción 4:

- Usar la librería jupyter con el comando

jupyter notebook



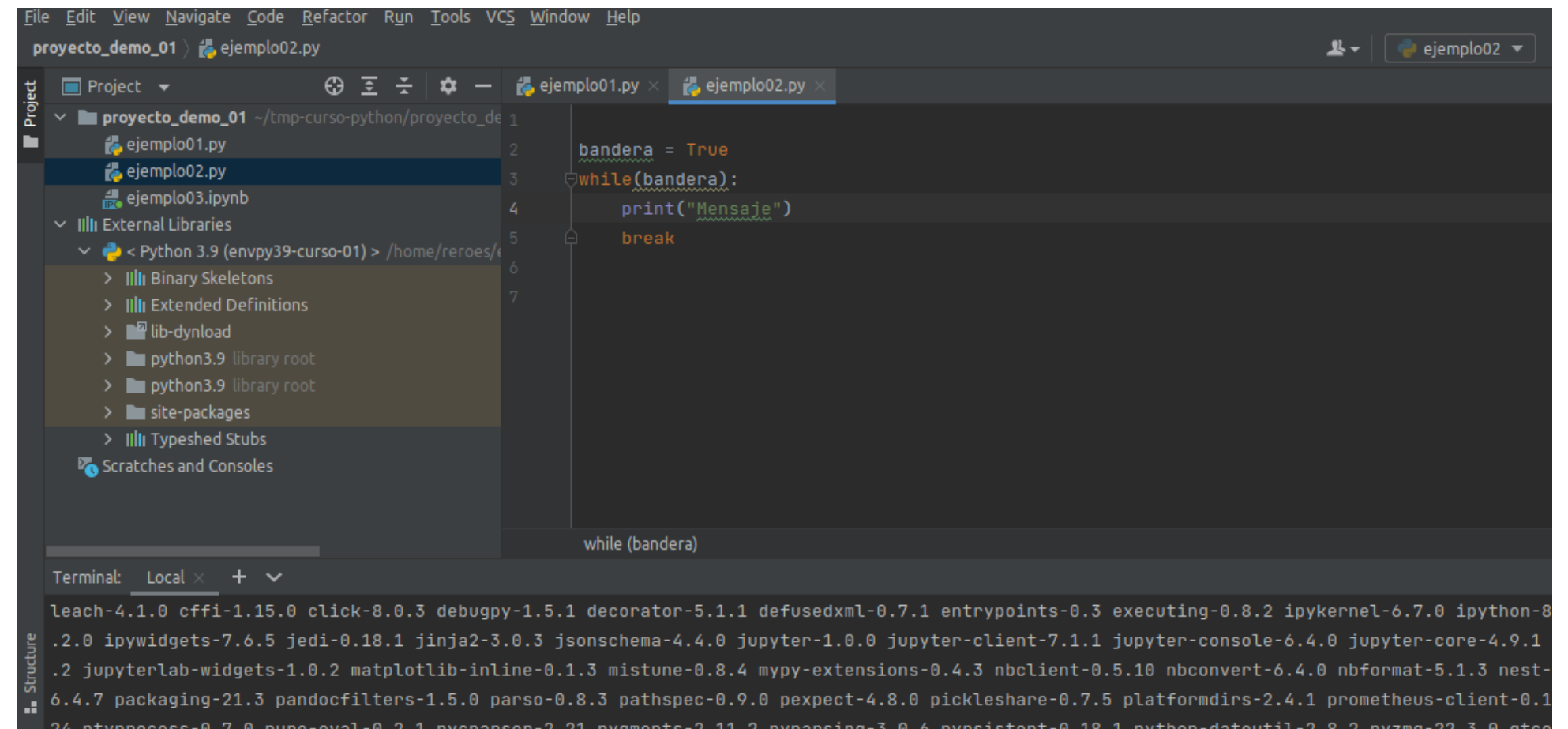
Ejecutar código en Python

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



Opción 5:

- Usar IDE
 - PyCharm



Tipos de Datos Básicos en Python

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



- Cadenas (str)
`c = "Hola Mundo"`

- Entero (int)
`valor = 100`

- Booleano (bool)
`bandera = True`
`bandera = False`

- Decimal (float)
`valor = 100.2`



Presentación - Imprimir información con Python

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



```
mensaje = "Hola mundo"
```

```
print(mensaje)
```

```
# cadena - str
```

```
mensaje = "hola mundo"
```

```
print(mensaje)
```

```
print("%s" % (mensaje))
```

```
print(f"{mensaje}")
```



Ingreso de datos por teclado en Python

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



```
nombre = input("Ingrese nombre del persona: ")
```

```
edad = int(input("Ingrese edad de persona: "))
```

```
sueldo = float(input("Ingrese el sueldo de la persona: "))
```

```
mensajeFinal = "Nombre:%s\nEdad:%d\nSueldo:%.2f\n" % (nombre,  
edad, sueldo)
```

```
print(mensajeFinal)
```



Sentencias - Condicionales

```
9 sueldo = 100
10 if sueldo <= 100:
11     print("Correcto")
12 else:
13     if (sueldo >= 101) and (sueldo <= 110):
14         print("Sobresaliente")
15     else:
16         print("Incorrecto")
```

```
4 sueldo = 110
5 if sueldo <= 100:
6     print("Correcto")
7 elif (sueldo >= 101) and (sueldo <= 110):
8     print("Sobresaliente")
9 else:
10    print("Incorrecto")
```

Sentencias - Ciclos repetitivos

```
-
4 sueldo = 110
5
6 while sueldo <= 120:
7     print(f"{sueldo}")
8     sueldo = sueldo + 5
9
10 print("%.2f" % sueldo)
```

```
4 sueldo = 110
5
6 for i in range(0, sueldo):
7     print(i)
8
```

```
9 sueldo = 110
10 |
11 for i in range(0, sueldo, 20):
12     print(i)
```


Sentencias - Estructuras de datos

- Listas
 - Estructura donde se puede almacenar variables de cualquier tipo de dato
 - Los valores ingresados a las listas se los separa con coma (,)
 - Declaración de lista vacía: `mi_lista = []` (corchetes)

```

5 lista1 = []
6
7 lista2 = ["a", 1, [], "b"]
8
9 lista3 = [1]
10 lista3.append("b")
11 lista3.append("c")
12 lista3.append(10)
13
    
```

Sentencias - Estructuras de datos

- Dictionarios
 - Conocidos como matrices asociativas.
 - Estructura que relaciona una llave con un valor.
 - Representamos un diccionario vacío con llaves así: `diccionario = {}`

```

5 diccionario = {}
6 diccionario["nombre"] = "René"
7 diccionario["apellido"] = "Elizalde"
8
9 diccionario2 = {"nombre": "René", "apellido": "Elizalde", "edad": 30}
10 diccionario2["sueldo"] = 1000.2
    
```

Funciones en Python

- Palabra reservada **def**
- Uso de dos puntos :, para dar inicio al cuerpo de la función

```

1  ~
2  ~
3  ~
4  def obtener_datos():
5      """ """
6      nombre = input("Ingrese nombre: ")
7      apellido = input("Ingrese apellido: ")
8      edad = input("Ingrese edad: ")
9      edad = int(edad)
10     cadena = f"Datos Ingresados\n" \
11              f"Nombre: {nombre}\n" \
12              f"Apellido: {apellido}\n" \
13              f"edad: {edad}"
14     return cadena
15
16
17 if __name__ == "__main__":
18     print("Inicio de proceso")
19     mensaje = obtener_datos()
20     print(mensaje)

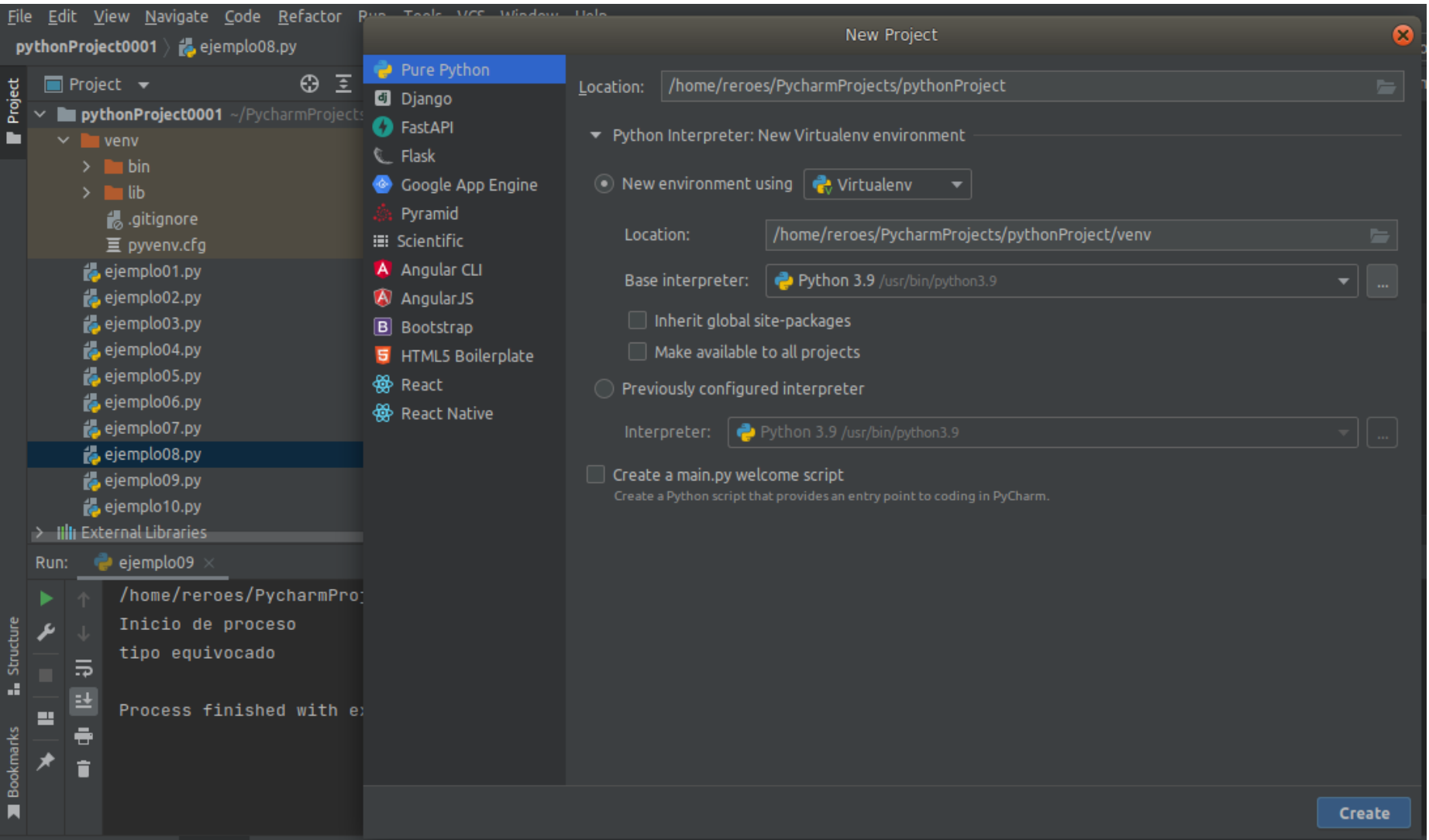
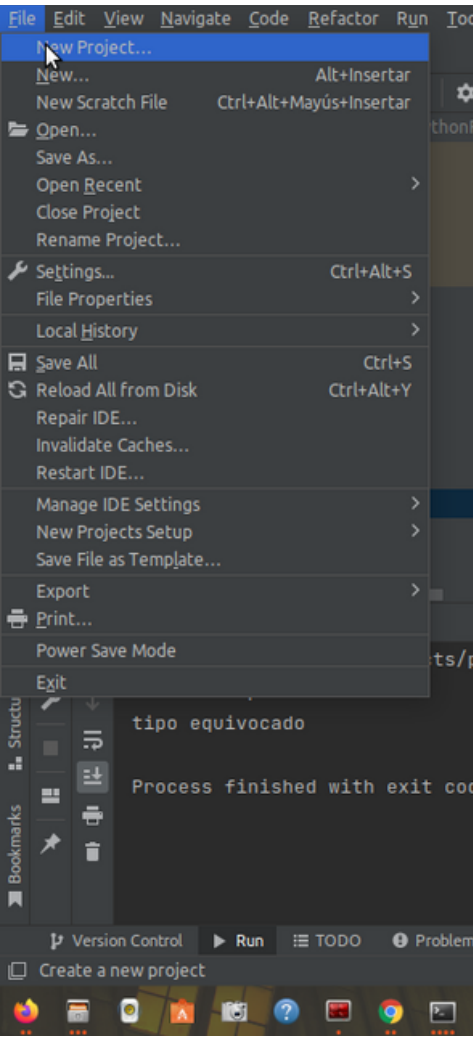
```

```

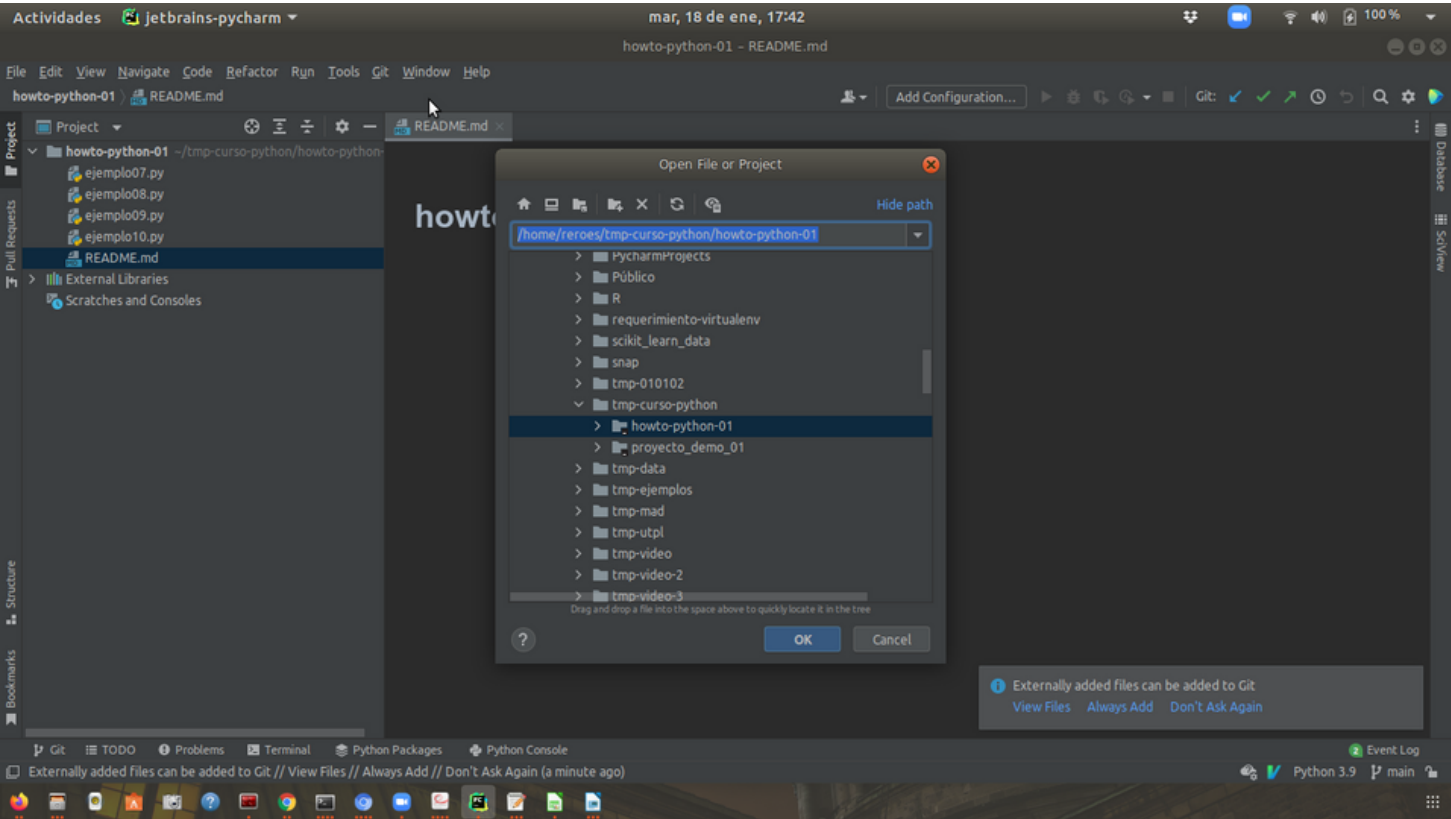
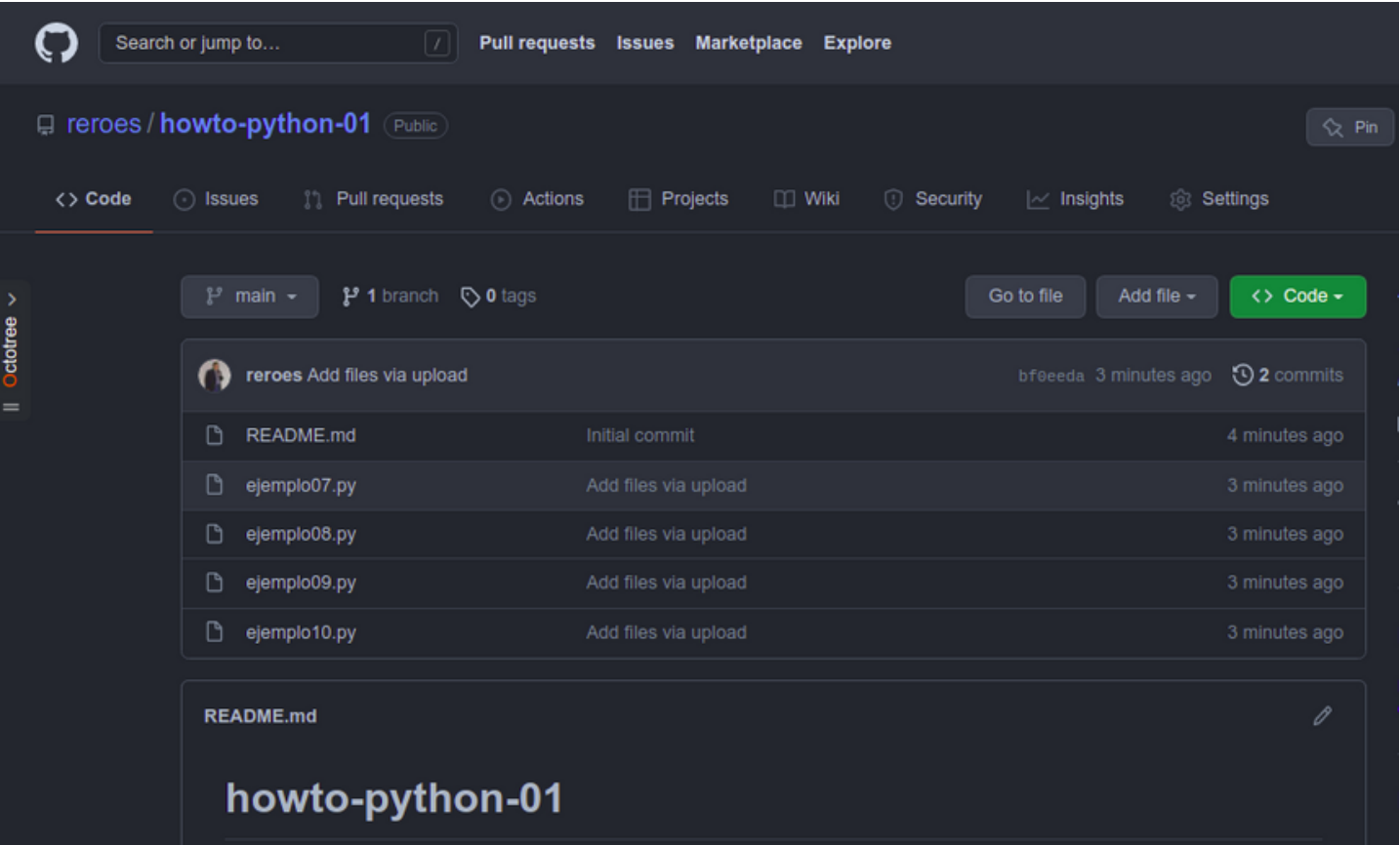
1  ~
2  ~
3  ~
4  ~
5  ~
6  def obtener_datos():
7      """ """
8      nombre = input("Ingrese nombre: ")
9      apellido = input("Ingrese apellido: ")
10     edad = input("Ingrese edad: ")
11     edad = int(edad)
12     cadena = f"Datos Ingresados\n" \
13             f"Nombre: {nombre}\n" \
14             f"Apellido: {apellido}\n" \
15             f"edad: {edad}"
16     print(cadena)
17
18
19 if __name__ == "__main__":
20     print("Inicio de proceso")
21     obtener_datos()
22 ~

```

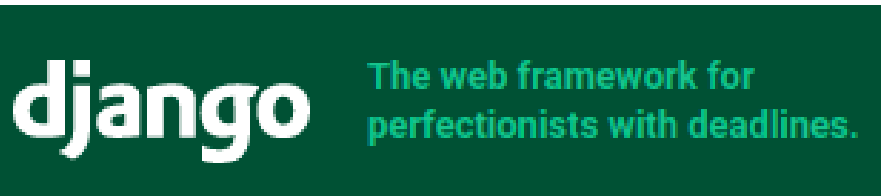
Caso 1: Creación de un proyecto den PyCharm



Caso 1: Clonar un repositorio - GitHub



Futuro?



Project Jupyter
The Jupyter Notebook is a web-based interactive computing platform. The notebook combines live code, equations, narrative text, visualizations, interactive dashboards and oth...
jupyter.org



Gracias



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