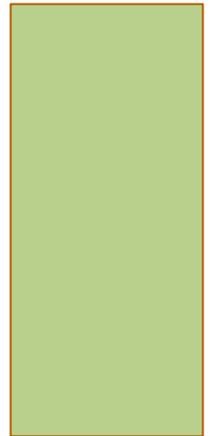


Fundamentos de Programación y Métodos Numéricos

ENTORNOS DE TRABAJO





Agenda – Entorno de Trabajo

- Online-Python
- Visual Studio Code (VS-Code)



Online-Python IDE

<https://www.online-python.com/>

Características de *Online-Pyhton IDE*:

- Permite crear, ejecutar y compartir código de Python online de forma gratuita con la ayuda del entorno de desarrollo (IDE).
- Representa uno de los compiladores en línea más simples, eficientes, confiables y potentes para el lenguaje de programación Python.
- No hay necesidad de instalar ningún software ni preocuparse por establecer un entorno de desarrollo Python.



Online-Python IDE

ONLINE PYTHON BETA    + 43.2K

Menú del sistema   

main.py +

```
1
2 # Online Python - IDE, Editor, Compiler, Interpreter
3
4 def sum(a, b):
5     return (a + b)
6
7 a = int(input('Enter 1st number: '))
8 b = int(input('Enter 2nd number: '))
9
10 print(f'Sum of {a} and {b} is {sum(a, b)}')
11
```

Ln: 11, Col: 1

 Run  Share Command Line Arguments

Escritura del pseudocódigo

Mensajes de ayuda y de errores al compilar código



Agenda – Entorno de Trabajo

- Online-Python
- Visual Studio Code (VS-Code)

Instalación y Configuración de VS-Code y python



Visual Studio Code: es un editor de código fuente desarrollado por Microsoft que se puede utilizar tanto en Windows como en macOS y Linux. Además, se trata de un editor *open-source*.

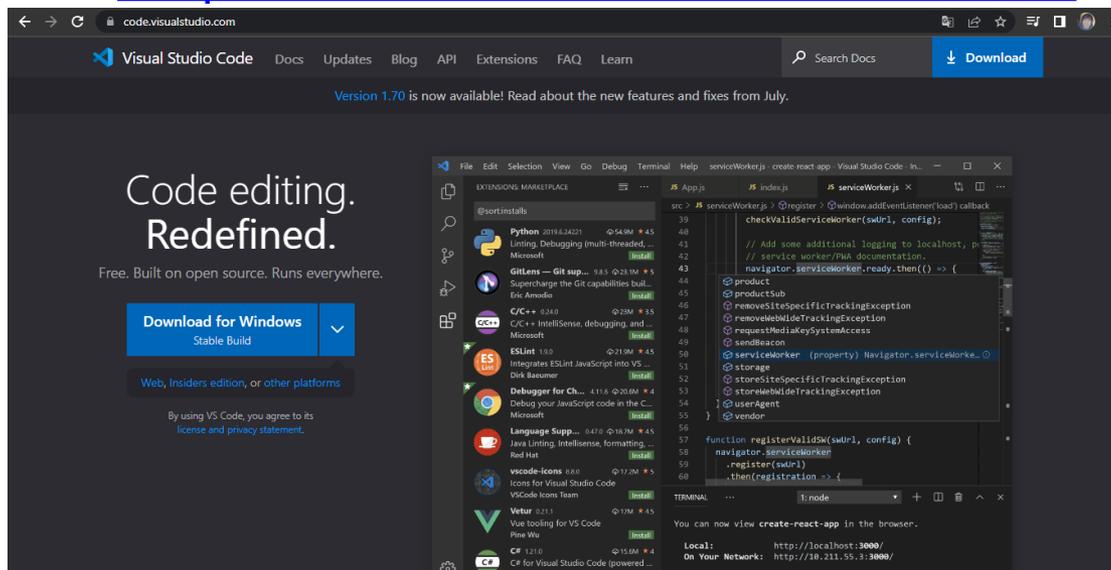
Instalación y Configuración de VS-Code y python



Pasos de instalación y configuración de VS-Code y python:

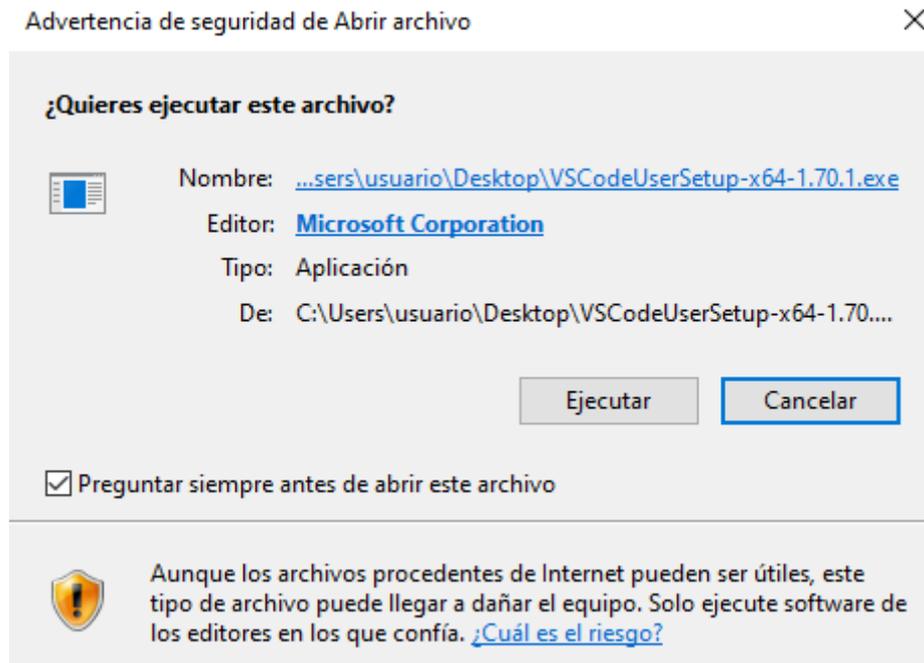
1. Descargar el editor de código fuente VS-Code desde el siguiente enlace dependiendo del Sistema operativo utilizado:

<https://code.visualstudio.com/>



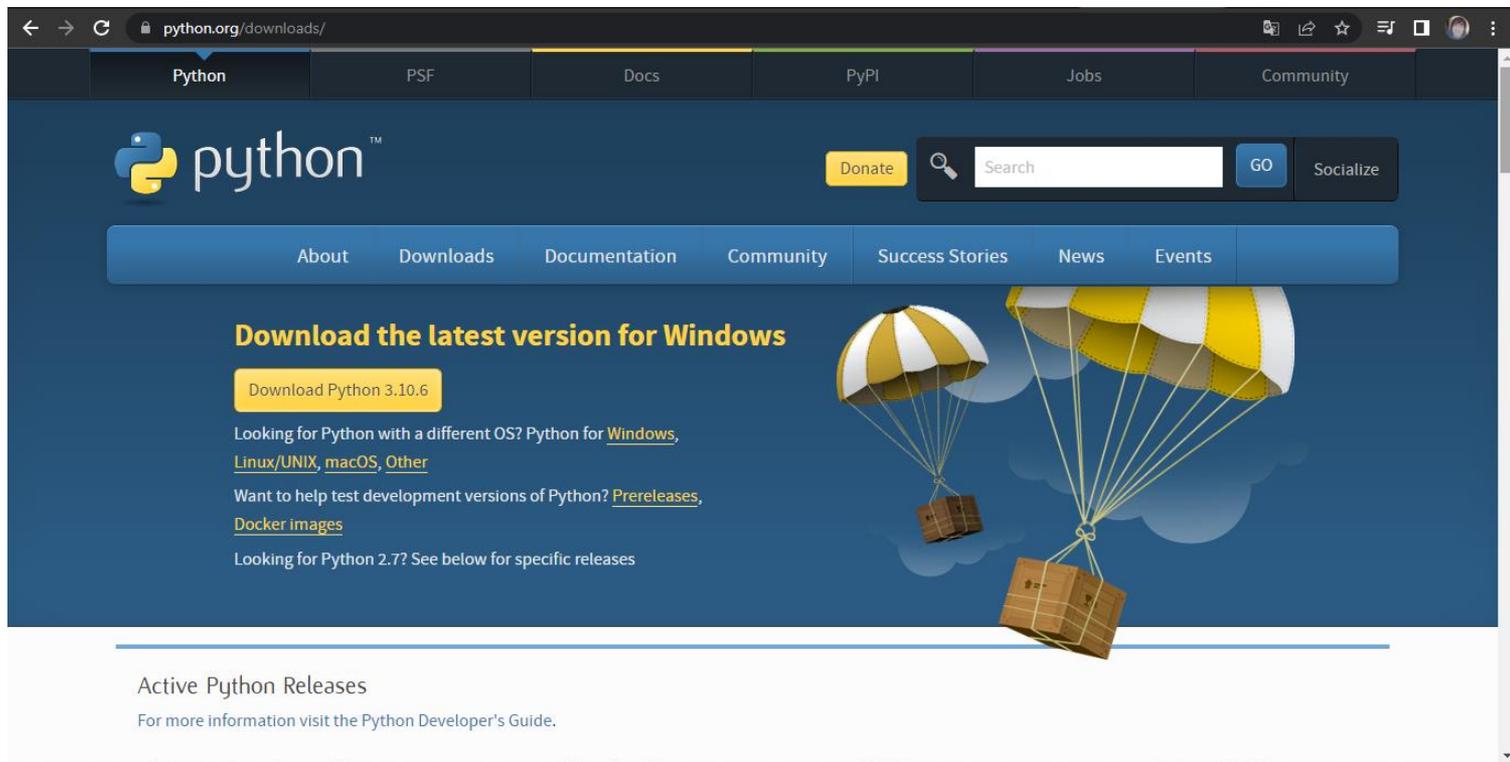
Instalación y Configuración de VS-Code y python

2. Instalar VS-Code:



Instalación y Configuración de VS-Code y python

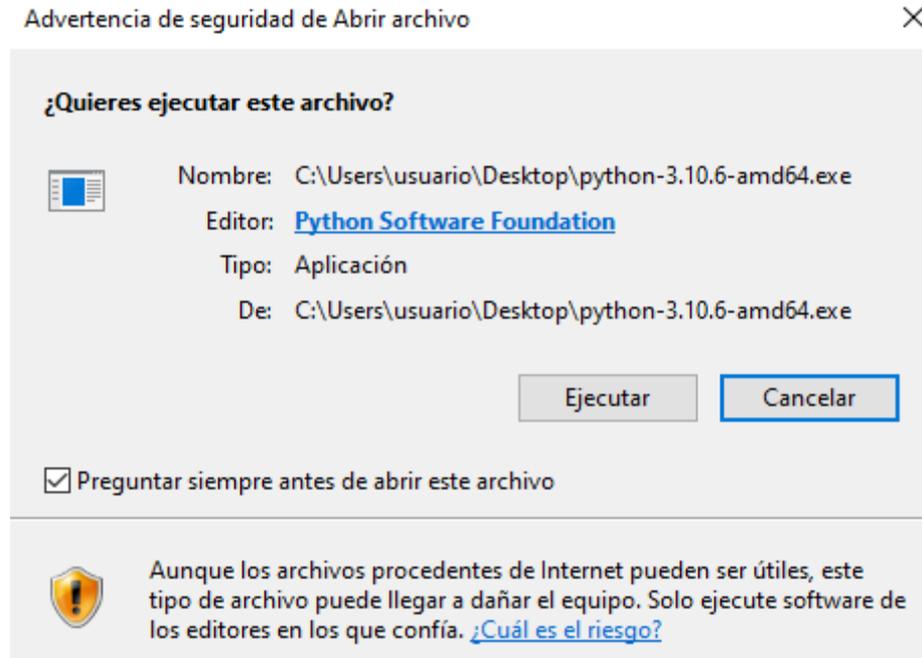
3. Descargar python desde el siguiente enlace:
<https://www.python.org/downloads/>



The screenshot shows the Python.org website's download page. The browser address bar displays "python.org/downloads/". The navigation menu includes "Python", "PSF", "Docs", "PyPI", "Jobs", and "Community". The main header features the Python logo, a "Donate" button, a search bar with "GO" and "Socialize" buttons, and a secondary menu with "About", "Downloads", "Documentation", "Community", "Success Stories", "News", and "Events". The main content area is titled "Download the latest version for Windows" and features a prominent yellow button labeled "Download Python 3.10.6". Below this, there are links for "Python for Windows", "Linux/UNIX, macOS, Other", "Prereleases", and "Docker images". A decorative image of two parachutes with cargo boxes is positioned to the right. At the bottom, the section "Active Python Releases" is visible, with a link to the "Python Developer's Guide".

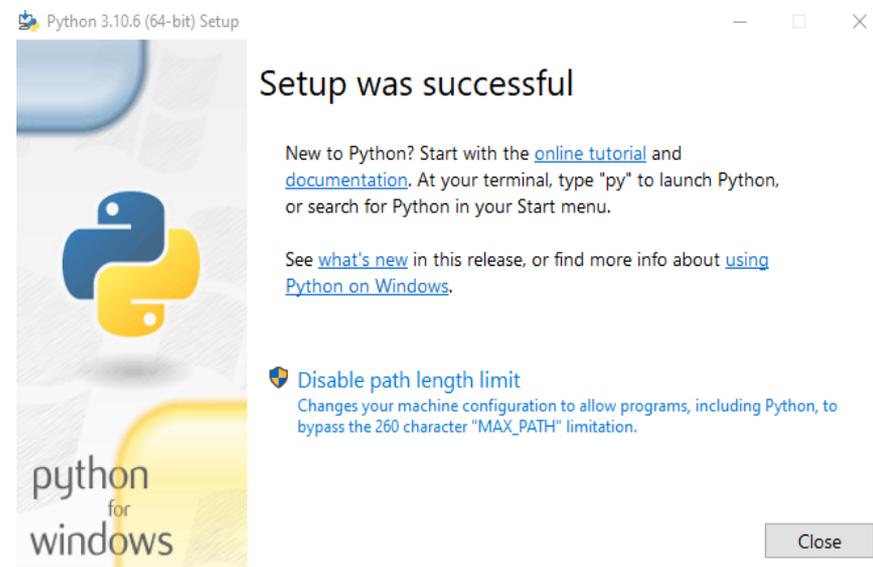
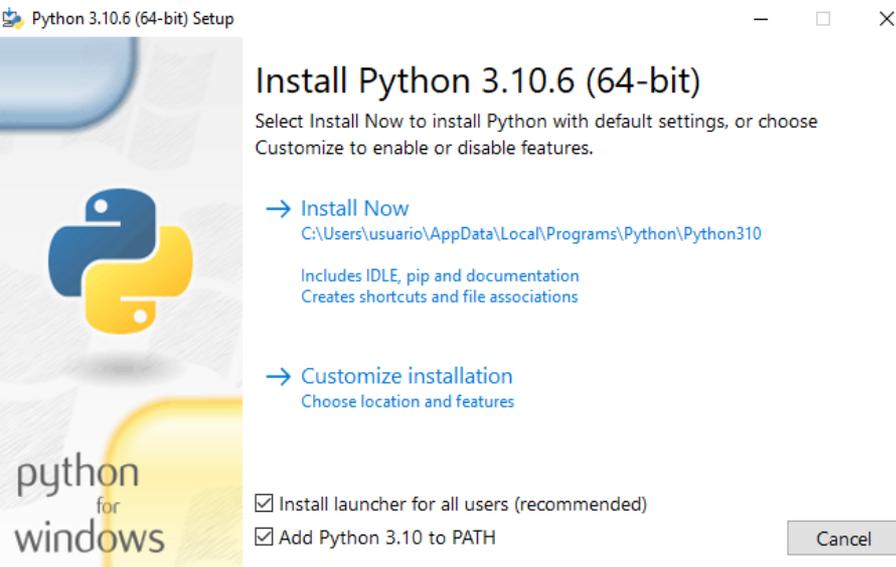
Instalación y Configuración de VS-Code y python

4. Instalar python:



Instalación y Configuración de VS-Code y python

4. Instalar python:



Instalación y Configuración de VS-Code y python



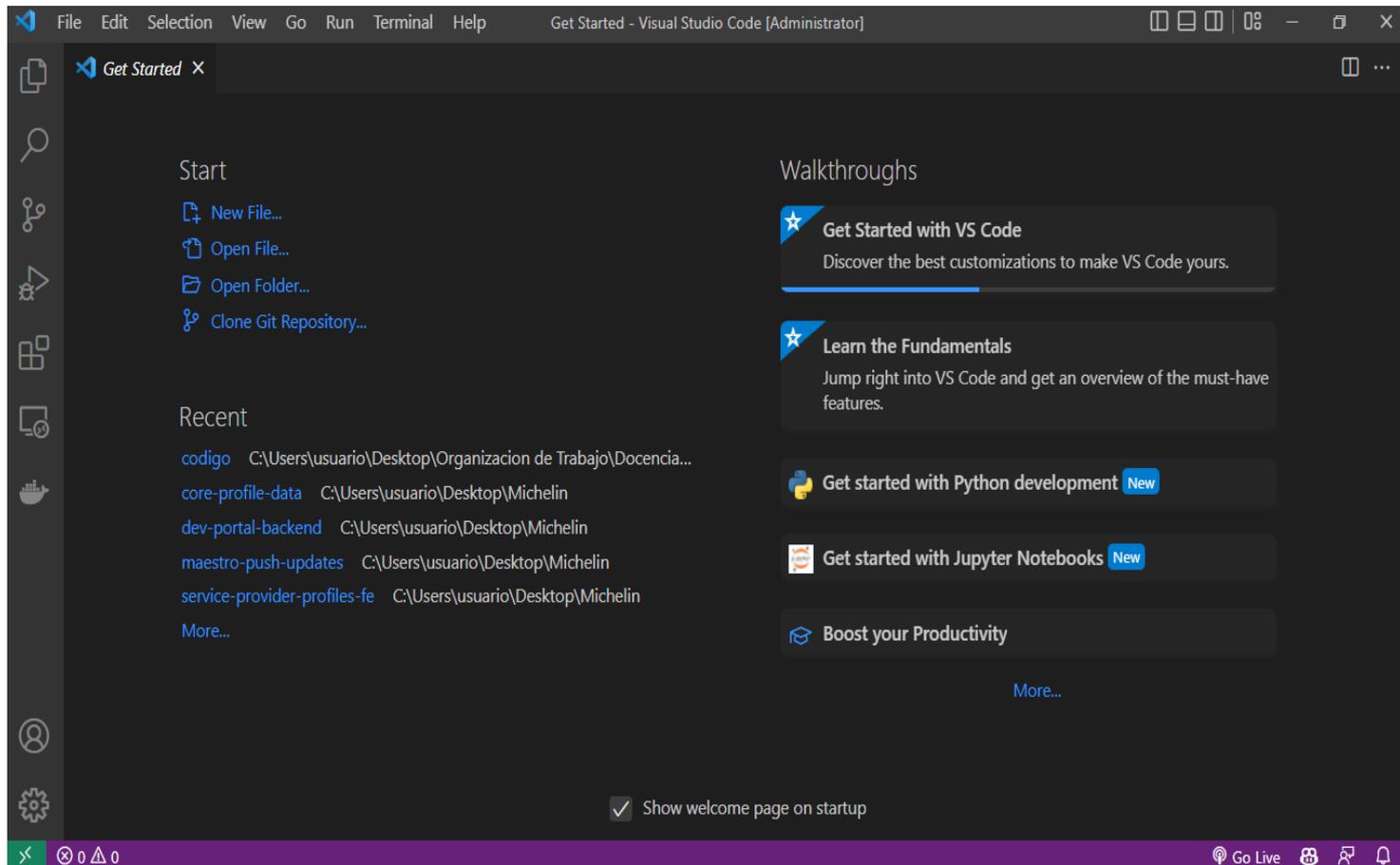
5. Determinar si python se ha instalado correctamente:

```
$ py --version
```

```
Administrador: Símbolo del sistema
C:\Users\usuario>py --version
Python 3.10.6
C:\Users\usuario>
```

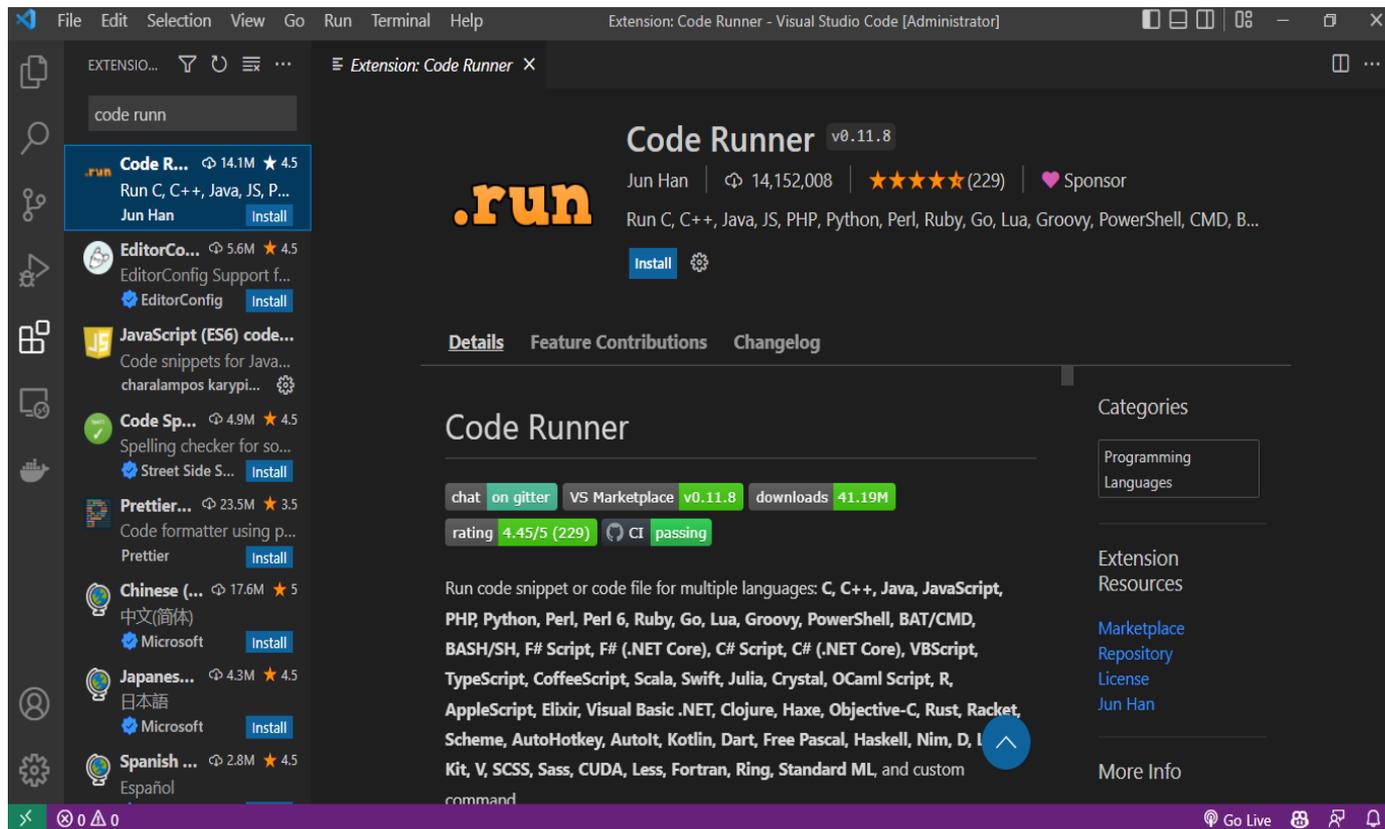
Instalación y Configuración de VS-Code y python

6. Abrir VS-Code:



Instalación y Configuración de VS-Code y python

7. Instalar paquete **Code Runner** (Opcional). Es una herramienta comoda para ejecutar código **python**.



The screenshot displays the Visual Studio Code interface with the 'Code Runner' extension page open. The extension is developed by Jun Han and is currently at version v0.11.8. It has a rating of 4.45/5 based on 229 reviews and has been downloaded 41.19M times. The extension is categorized under 'Programming Languages'. The description states that it allows running code snippets or files for a wide range of languages including C, C++, Java, JavaScript, PHP, Python, Perl, Ruby, Go, Lua, Groovy, PowerShell, and many others. The 'Install' button is visible, along with a gear icon for settings. The left sidebar shows a search for 'code runn' and lists several other extensions like 'EditorConfig', 'JavaScript (ES6) code snippets', 'Code Spell Checker', 'Prettier', and language packs for Chinese, Japanese, and Spanish.

Instalación y Configuración de VS-Code y python

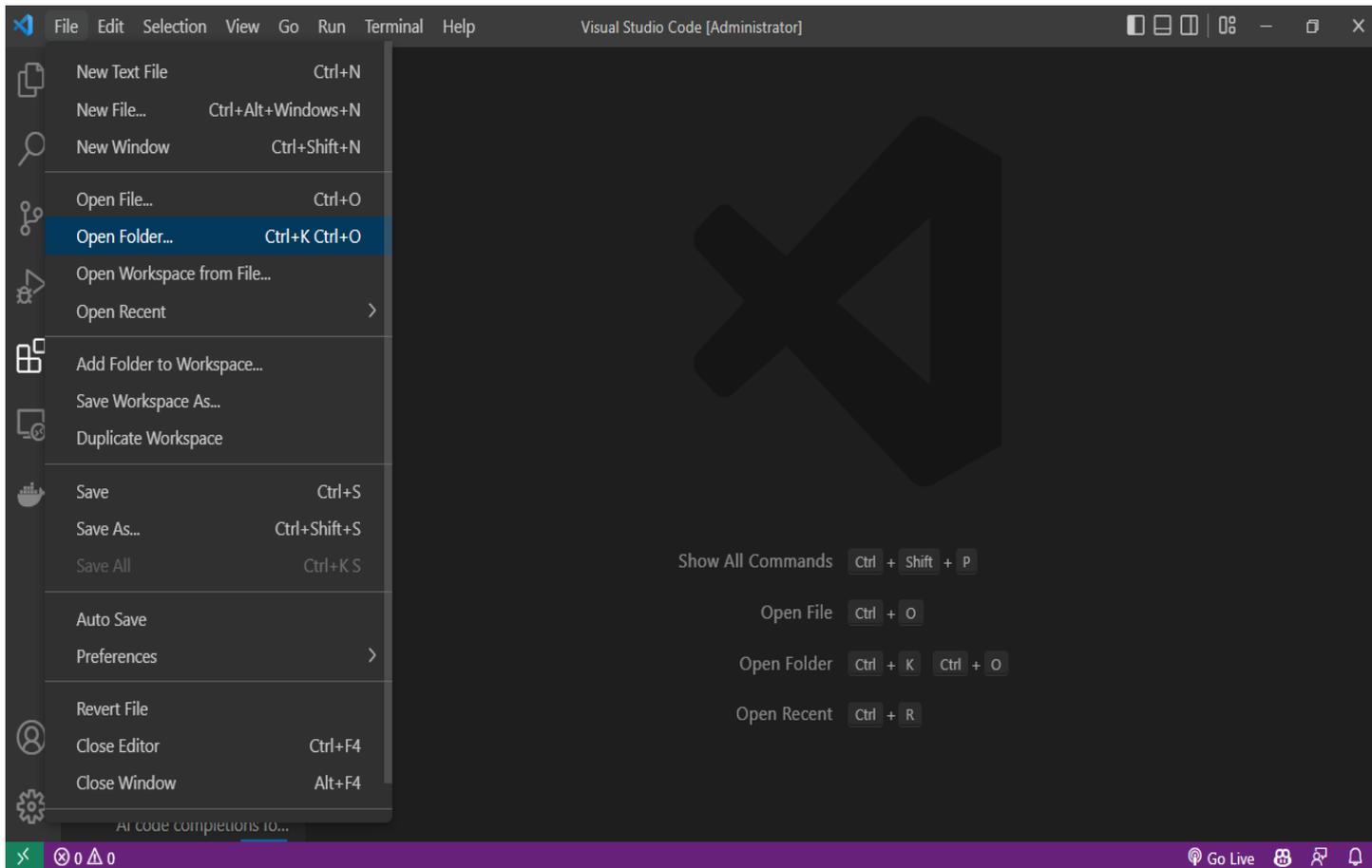


8. Instalar la extensión de python para VS-Code (Mandatorio):

The screenshot displays the Visual Studio Code interface with the Python extension installed. The left sidebar shows the 'Extension: Python' search results, with the 'Python' extension by Microsoft selected. The main panel shows the details for the 'Python' extension (v2022.12.0), including the Microsoft logo, a star rating of 501, and buttons for 'Disable', 'Uninstall', and 'Switch to Pre-Release Version'. The extension is described as providing IntelliSense (Pylance), linting, debugging, and Jupyter Notebook support. The 'Details' tab is active, showing the title 'Python extension for Visual Studio Code' and a description: 'A Visual Studio Code extension with rich support for the Python language (for all actively supported versions of the language: >=3.7), including features such as IntelliSense (Pylance), linting, debugging, code navigation, code formatting, refactoring, variable explorer, test explorer, and more!'. The 'Support for vscode.dev' section notes that the extension offers some support when running on vscode.dev. The right sidebar shows the 'Categories' section with 'Programming Languages' selected, and other categories like 'Debuggers', 'Linters', 'Formatters', 'Other', 'Data Science', 'Machine Learning', and 'Notebooks'. The bottom status bar shows 'Go Live' and other icons.

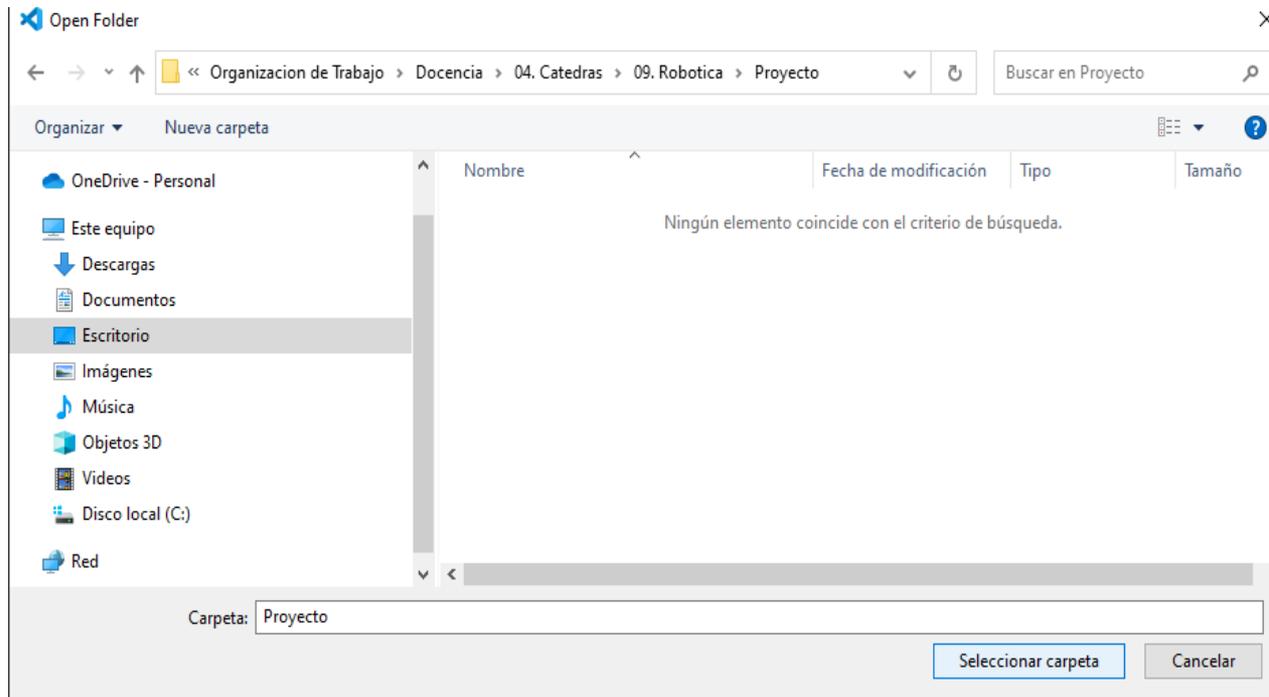
Instalación y Configuración de VS-Code y python

9. Abrir la carpeta de donde se va a encontrar el código del proyecto:



Instalación y Configuración de VS-Code y python

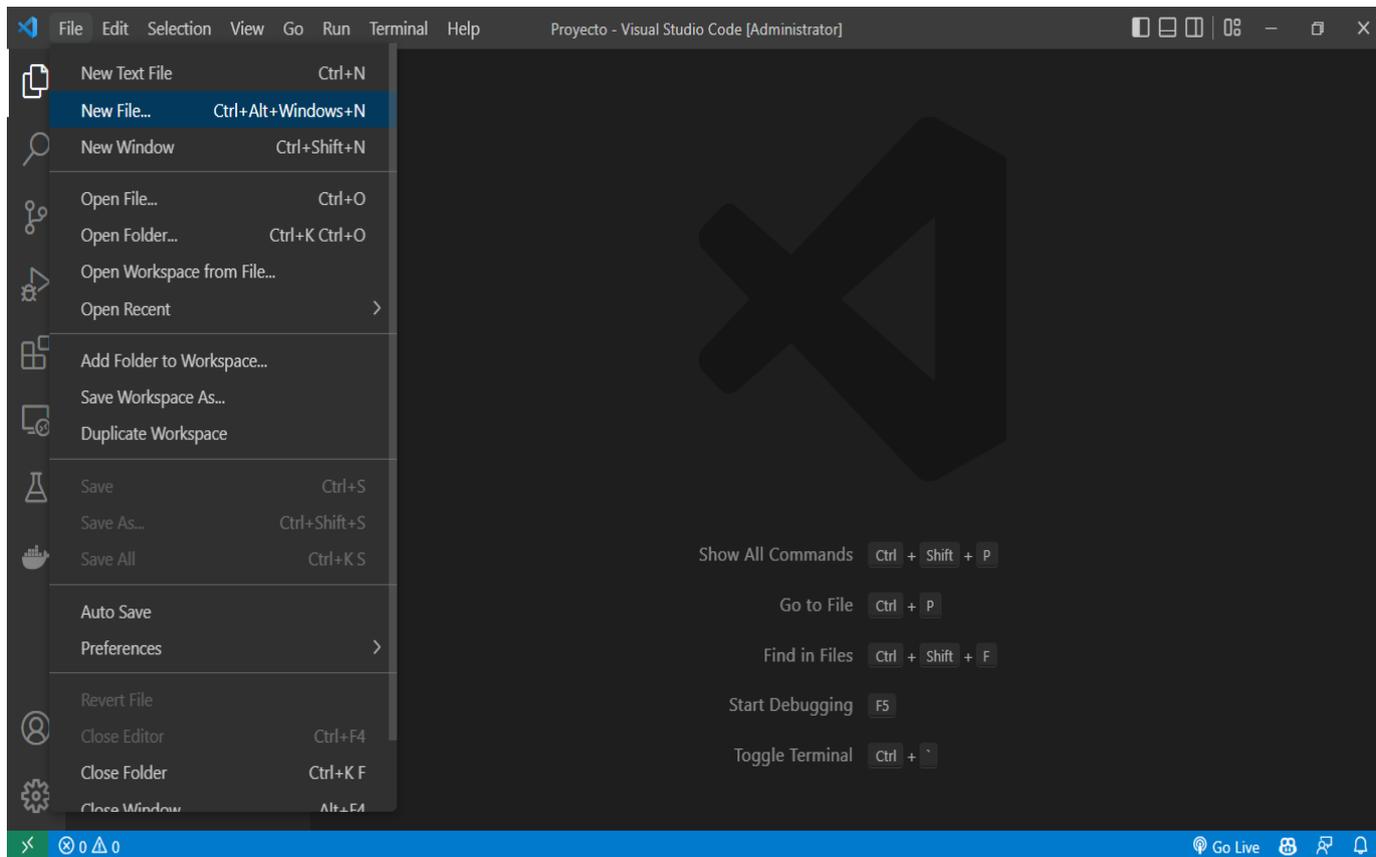
9. Abrir la carpeta de donde se va a encontrar el código del proyecto:



Instalación y Configuración de VS-Code y python

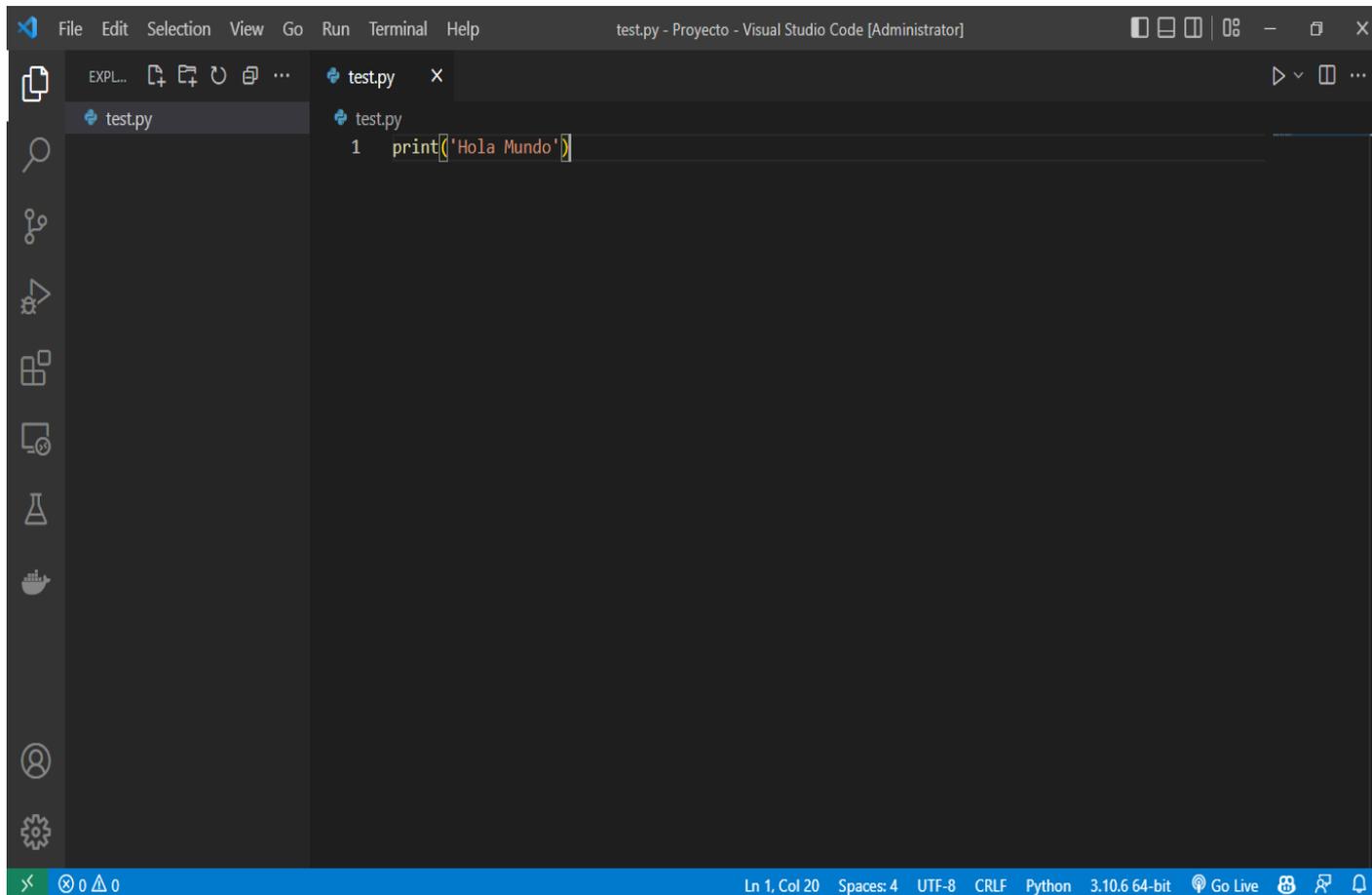


10. Crear un nuevo archivo con extensión **py** (python code):



Instalación y Configuración de VS-Code y python

11. Editar el código del archivo **py** (python code):



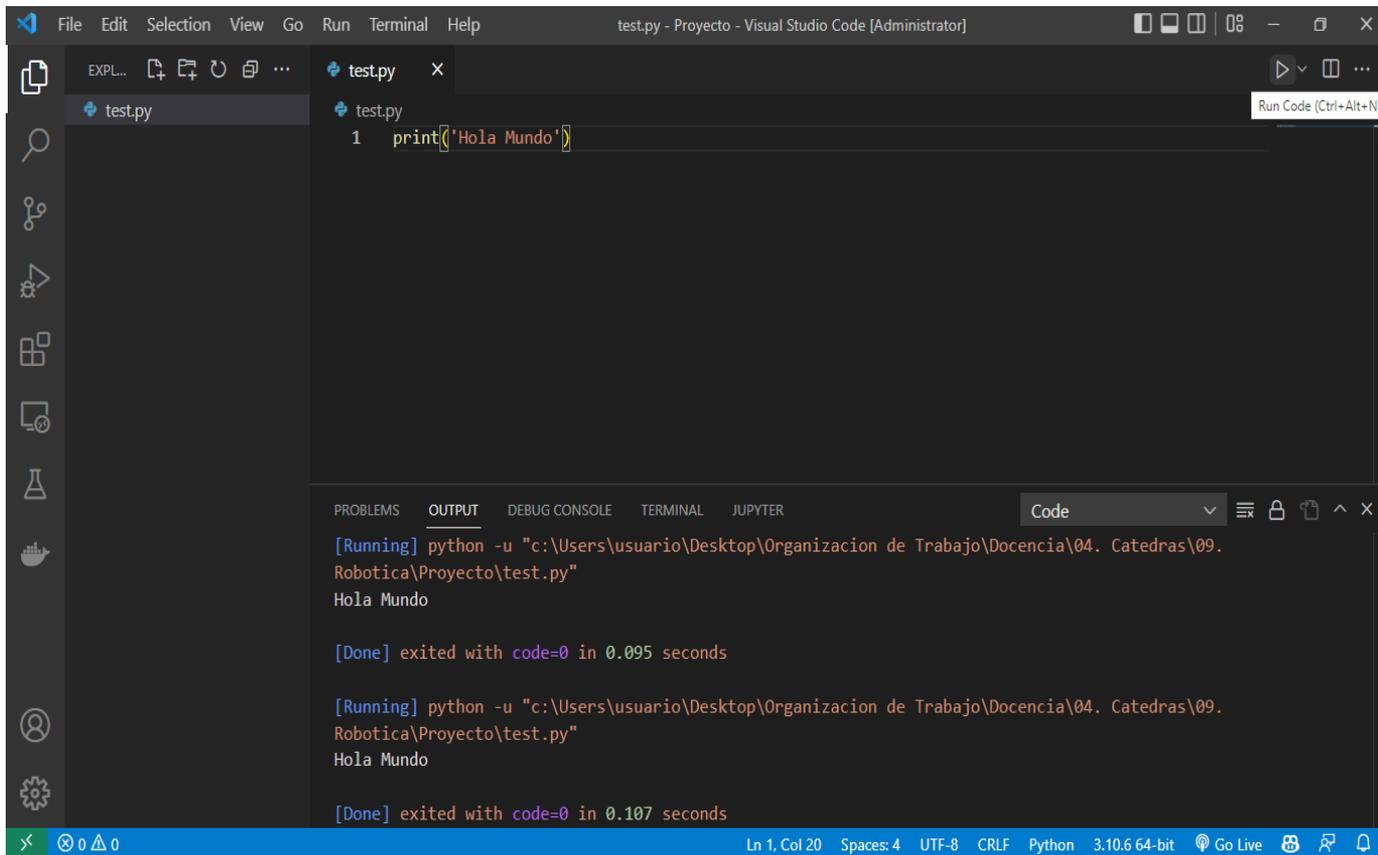
The screenshot shows the Visual Studio Code interface. The title bar reads "test.py - Proyecto - Visual Studio Code [Administrator]". The menu bar includes "File", "Edit", "Selection", "View", "Go", "Run", "Terminal", and "Help". The Explorer sidebar on the left shows a file named "test.py". The main editor area displays the following code:

```
test.py
1 print('Hola Mundo')
```

The status bar at the bottom indicates "Ln 1, Col 20", "Spaces: 4", "UTF-8", "CRLF", "Python", "3.10.6 64-bit", "Go Live", and other icons.

Instalación y Configuración de VS-Code y python

12. Ejecutar el código con **Code Runner**:



The screenshot shows the Visual Studio Code interface with a Python file named 'test.py' open. The code in the file is:

```
1 print('Hola Mundo')
```

The Code Runner extension is used to execute the code. The output console shows the following command and output:

```
[Running] python -u "c:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto\test.py"
Hola Mundo

[Done] exited with code=0 in 0.095 seconds

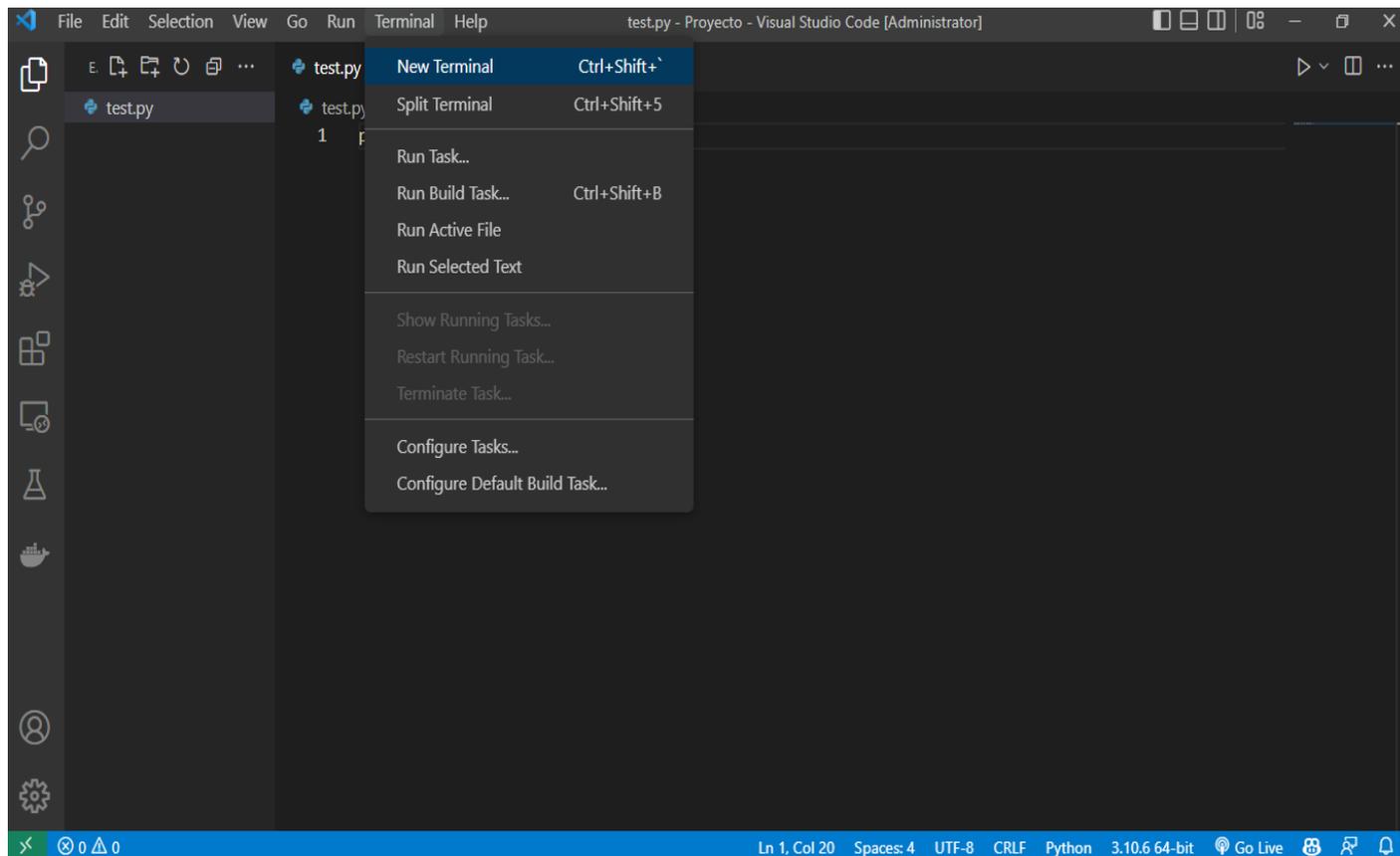
[Running] python -u "c:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto\test.py"
Hola Mundo

[Done] exited with code=0 in 0.107 seconds
```

The status bar at the bottom indicates the current file is at line 1, column 20, with 4 spaces, UTF-8 encoding, CRLF line endings, Python 3.10.6 64-bit, and the Go Live extension is active.

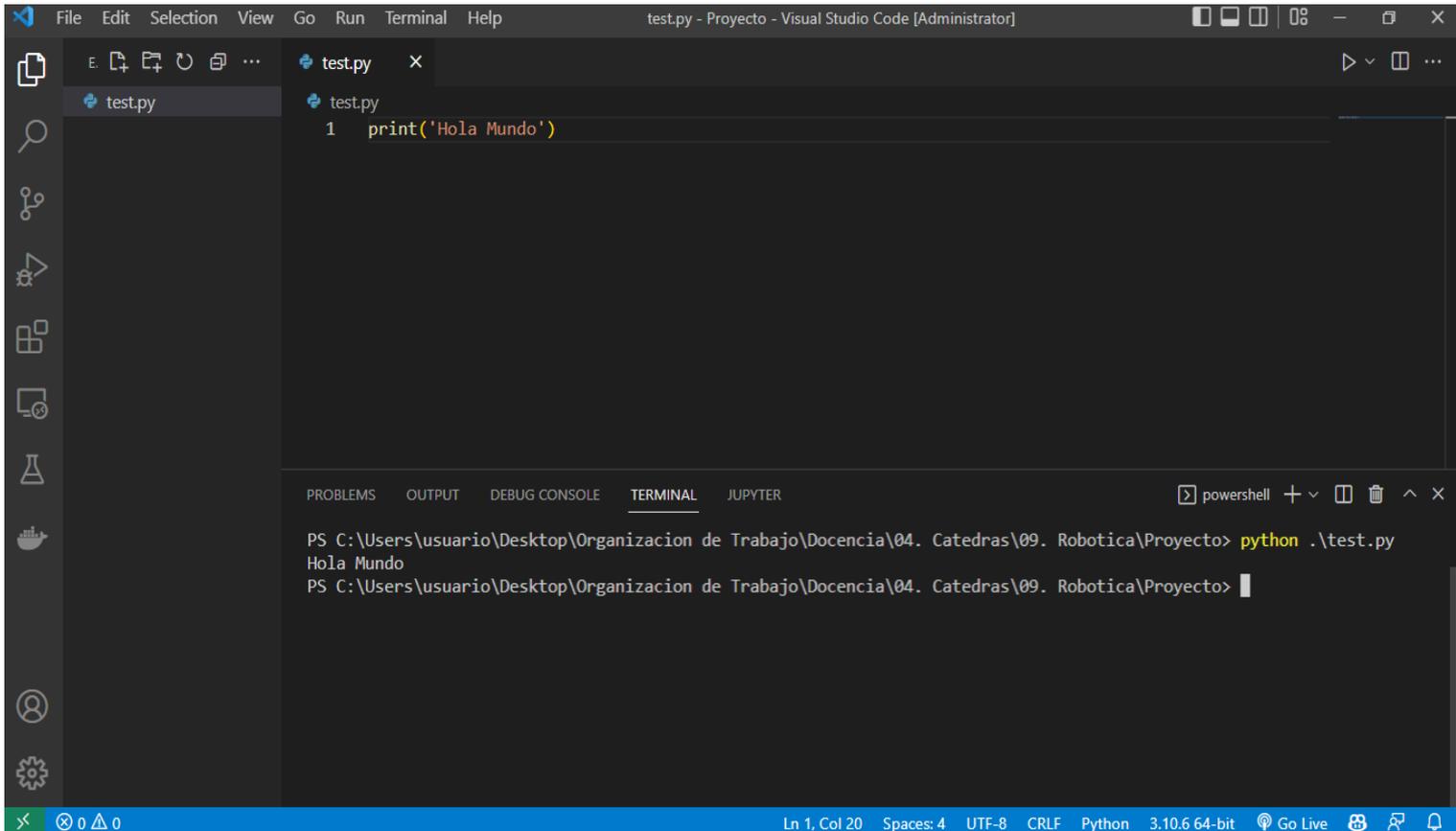
Instalación y Configuración de VS-Code y python

12. Otra opción para la ejecución de códigos python desde terminal:



Instalación y Configuración de VS-Code y python

12. Otra opción para la ejecución de códigos python desde terminal:



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `test.py` with the following code:

```
1 print('Hola Mundo')
```

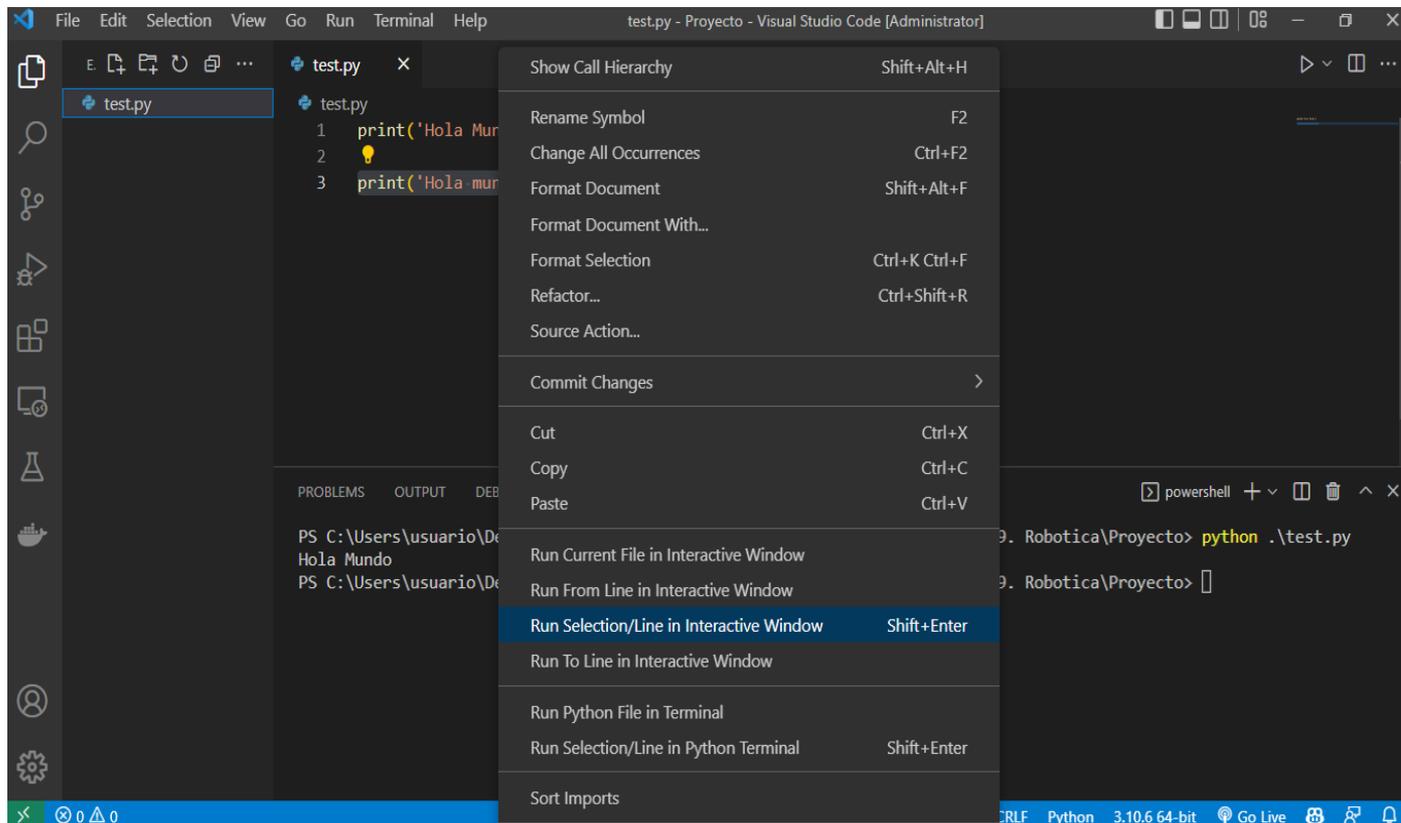
The terminal window at the bottom shows the execution of the script:

```
PS C:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto> python .\test.py  
Hola Mundo  
PS C:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto>
```

The status bar at the bottom indicates the current file is `Ln 1, Col 20`, using `UTF-8` encoding, `CRLF` line endings, and `Python 3.10.6 64-bit` interpreter.

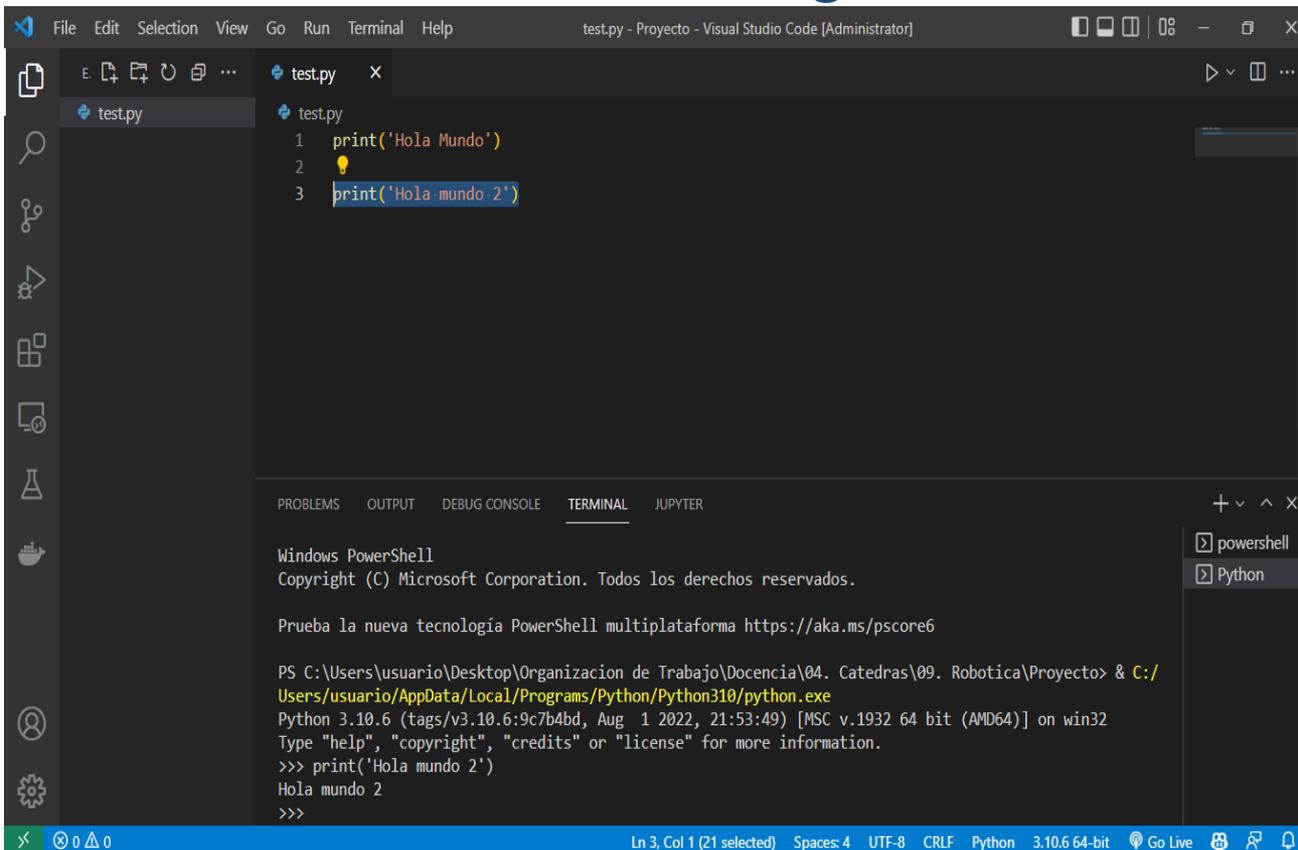
Instalación y Configuración de VS-Code y python

12. Otra opción para la ejecución de códigos python desde el interprete interactivo seleccionando líneas de código:



Instalación y Configuración de VS-Code y python

12. Otra opción para la ejecución de códigos python desde el interprete interactivo seleccionando líneas de código:



The screenshot shows the Visual Studio Code interface with a Python file named 'test.py' open. The file contains three lines of code:

```
1 print('Hola Mundo')
2
3 print('Hola mundo 2')
```

The third line is selected. The terminal window at the bottom shows the execution of the code using the Python interpreter:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

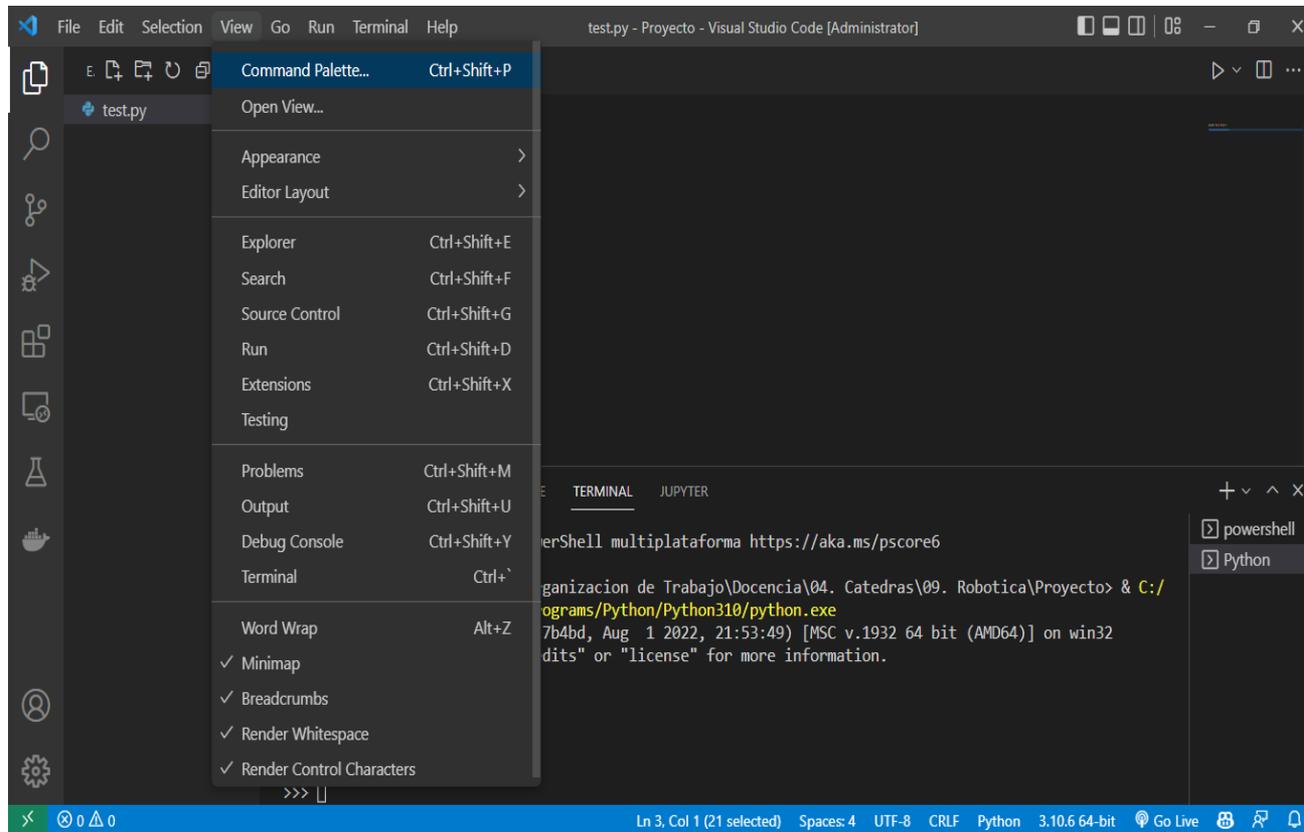
Prueba la nueva tecnología PowerShell multiplataforma https://aka.ms/pscore6

PS C:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto> & C:/Users/usuario/AppData/Local/Programs/Python/Python310/python.exe
Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print('Hola mundo 2')
Hola mundo 2
>>>
```

The status bar at the bottom indicates the current file is 'test.py', line 3, column 1, with 21 characters selected. The Python version is 3.10.6 64-bit.

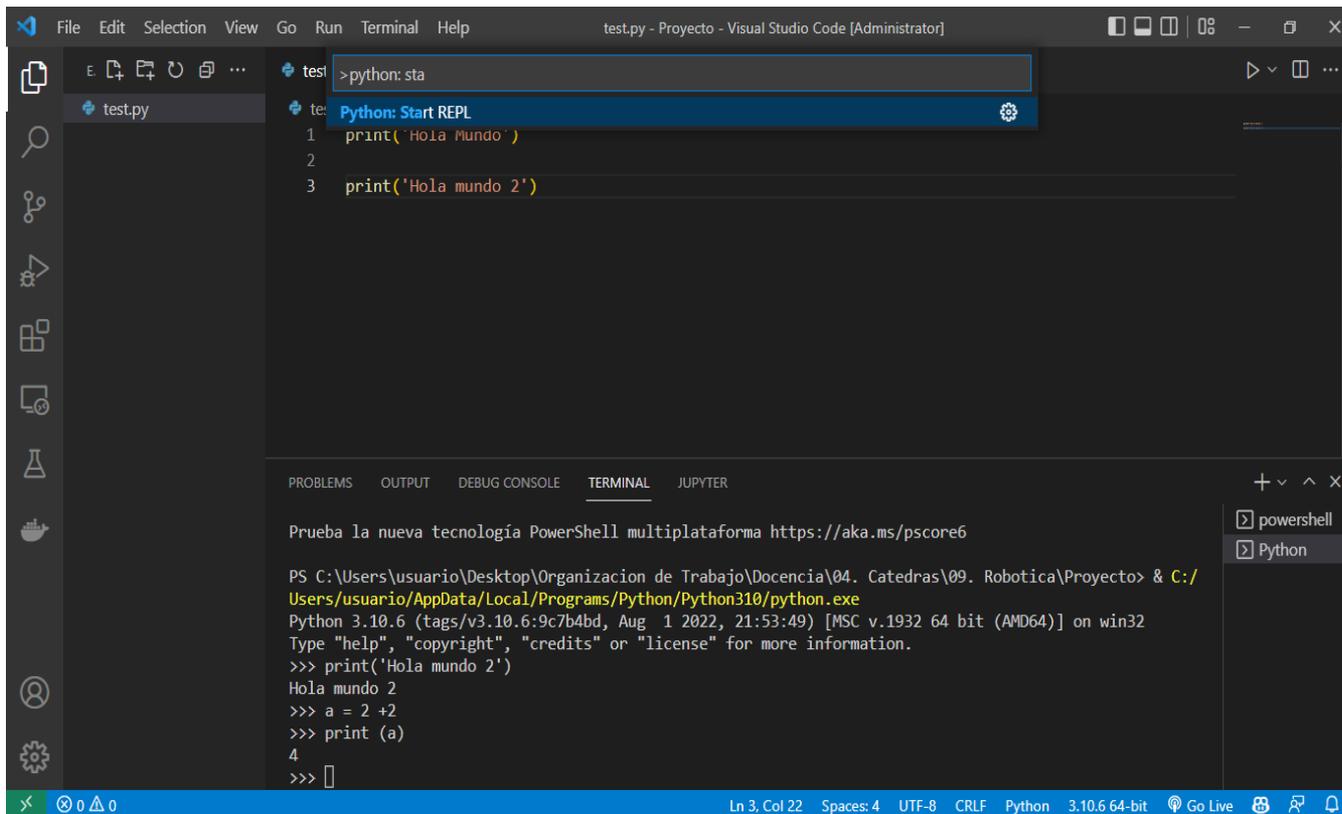
Instalación y Configuración de VS-Code y python

13. Utilizar el interprete interactivo como depurador (debugger):



Instalación y Configuración de VS-Code y python

13. Utilizar el interprete interactivo como depurador (debugger):



The screenshot shows the Visual Studio Code interface with a Python file named 'test.py' open. The code in the editor is:

```
1 print('Hola Mundo')
2
3 print('Hola mundo 2')
```

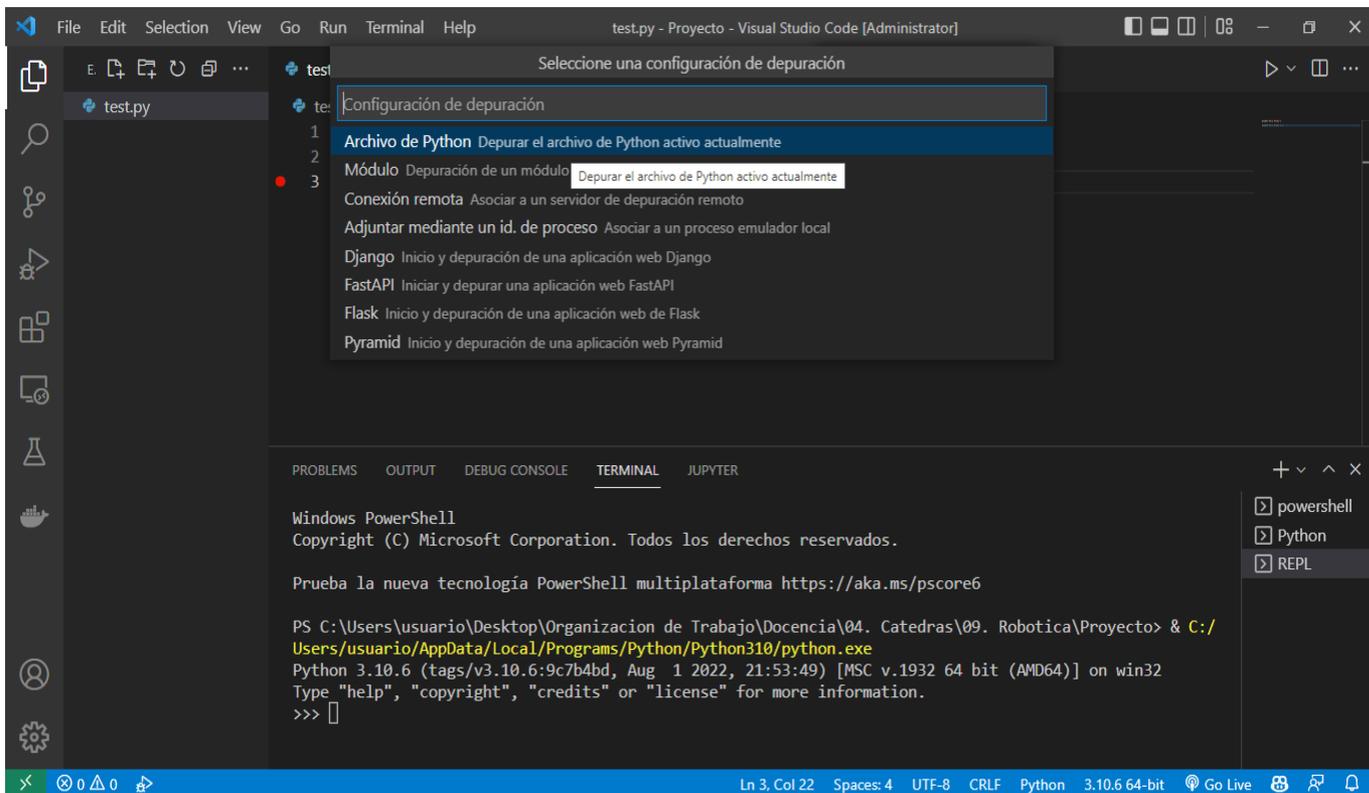
The terminal at the bottom shows the execution of the script:

```
PS C:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto> & C:/Users/usuario/AppData/Local/Programs/Python/Python310/python.exe
Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print('Hola mundo 2')
Hola mundo 2
>>> a = 2 + 2
>>> print(a)
4
>>>
```

The Python REPL is also visible, showing the command prompt and the output of the script.

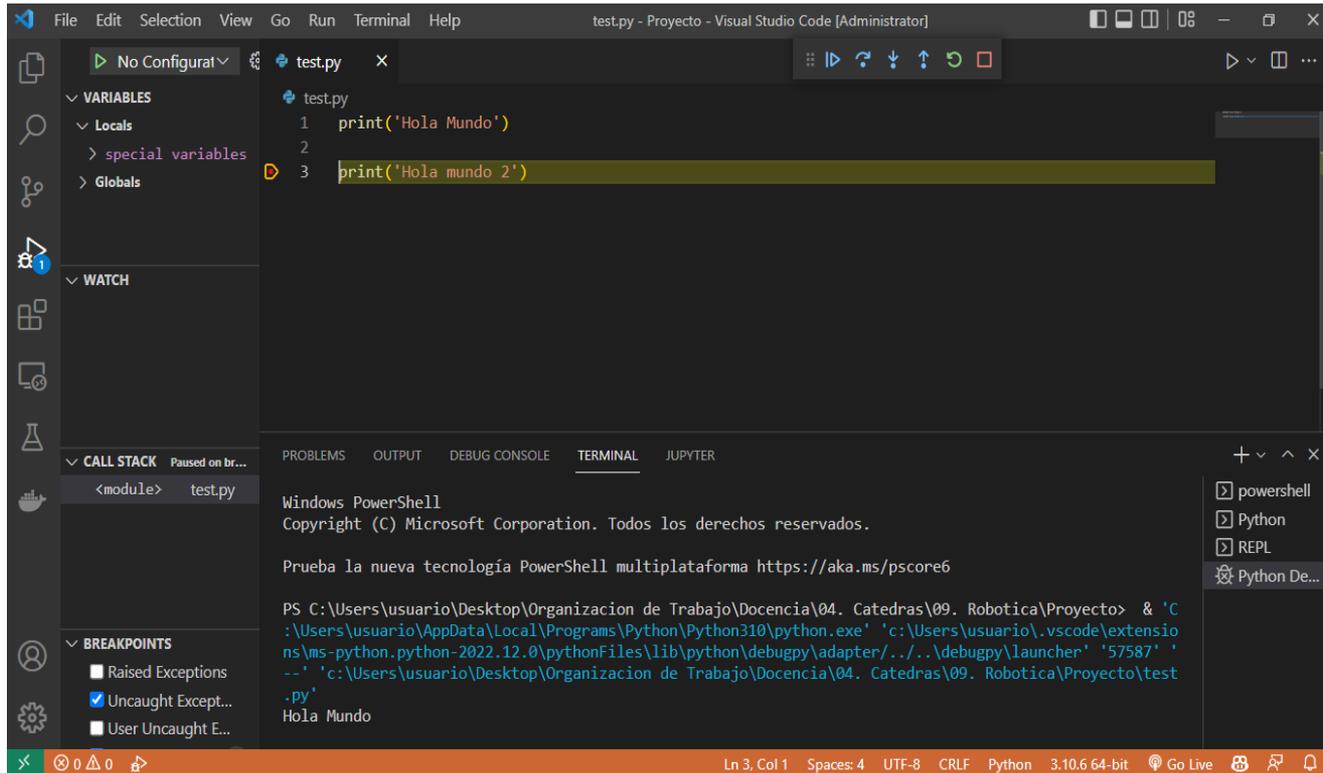
Instalación y Configuración de VS-Code y python

13. Utilizar el interprete interactivo como depurador (debugger):



Instalación y Configuración de VS-Code y python

13. Utilizar el interprete interactivo como depurador (debugger):



```
test.py
1 print('Hola Mundo')
2
3 print('Hola mundo 2')
```

Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Prueba la nueva tecnología PowerShell multiplataforma <https://aka.ms/pscore6>

```
PS C:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto> & 'C:\Users\usuario\AppData\Local\Programs\Python\Python310\python.exe' 'c:\Users\usuario\.vscode\extensions\ms-python.python-2022.12.0\pythonFiles\lib\python\debugpy\adapter\..\debugpy\launcher' '57587' '--' 'c:\Users\usuario\Desktop\Organizacion de Trabajo\Docencia\04. Catedras\09. Robotica\Proyecto\test.py'
```

Hola Mundo

Ln 3, Col 1 Spaces: 4 UTF-8 CRLF Python 3.10.6 64-bit Go Live