

# System Setup



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# System Setup

Programs and Environment: Local



1. Install Python



Visual Studio Code

or



Cursor

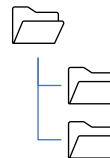
2. Install IDE



3. Install git



4. Config &  
Get Course Material



5. Set up Environment



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# System Setup

Programs and Environment: Cloud



Allows coding in the  
browser

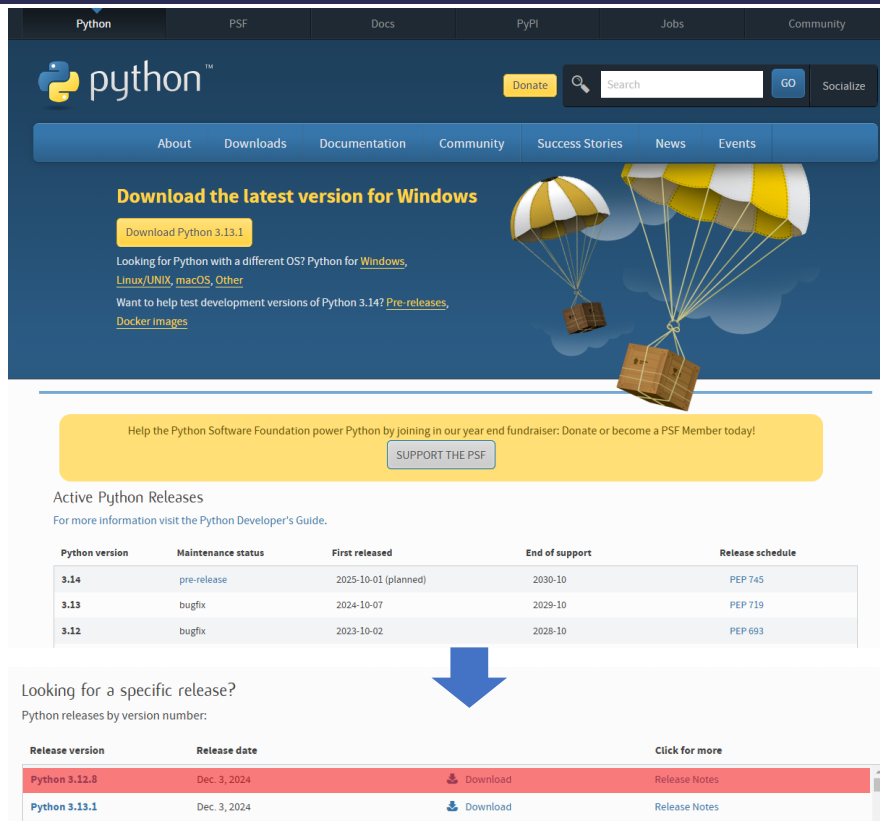
The screenshot displays the Firebase Studio web interface in a browser. The address bar shows the URL: `studio.firebase.google.com/mypoetrytest-73499963`. The interface is divided into several panels:

- EXPLORER:** A file tree on the left showing the project structure. It includes folders like `devnix`, `venv`, `code`, `scripts`, and `my-first-mcp-server`. A file named `20_model_chat_groq.py` is selected.
- Code Editor:** The central area showing the Python code for `20_model_chat_groq.py`. The code imports `ChatGroq` and `load_dotenv`, then creates a `ChatGroq` model and invokes it with the prompt "What is a Huggingface?".
- INTERACTIVE:** A panel on the right showing the execution of the code. It displays the output of the `model.invoke` call, which returns a JSON object containing the response and metadata.
- TERMINAL:** A panel at the bottom showing the output of the terminal. It displays the commands used to install the `langchain-groq` and `python-dotenv` packages using `poetry add`.

URL: <https://studio.firebase.google.com/mypoetrytest-73499963>

# System Setup

## Python Installation



The screenshot shows the Python.org website. At the top, there's a navigation bar with links: Python, PSF, Docs, PyPI, Jobs, and Community. Below this is a search bar and a 'Donate' button. A secondary navigation bar contains links: About, Downloads, Documentation, Community, Success Stories, News, and Events. The main content area features a large banner for 'Download the latest version for Windows' with a 'Download Python 3.13.1' button. Below the banner, there's text about downloading for other OSes and links to pre-releases and Docker images. A yellow box encourages supporting the PSF. Below that, a table lists 'Active Python Releases' with columns for version, maintenance status, first released, end of support, and release schedule. A large blue arrow points from this table to a section titled 'Looking for a specific release?' which shows a list of releases by version number, including Python 3.12.8 and 3.13.1, each with a 'Download' button and a link to 'Release Notes'.

Download the latest version for Windows

Download Python 3.13.1

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

Want to help test development versions of Python 3.14? [Pre-releases](#), [Docker images](#)

Help the Python Software Foundation power Python by joining in our year end fundraiser: Donate or become a PSF Member today!

SUPPORT THE PSF

Active Python Releases

For more information visit the [Python Developer's Guide](#).

Python version	Maintenance status	First released	End of support	Release schedule
3.14	pre-release	2025-10-01 (planned)	2030-10	PEP 745
3.13	bugfix	2024-10-07	2029-10	PEP 719
3.12	bugfix	2023-10-02	2028-10	PEP 693

Looking for a specific release?

Python releases by version number:

Release version	Release date		Click for more
Python 3.12.8	Dec. 3, 2024	<a href="#">Download</a>	<a href="#">Release Notes</a>
Python 3.13.1	Dec. 3, 2024	<a href="#">Download</a>	<a href="#">Release Notes</a>

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

# System Setup

Git

1. Download Git and Install: <https://git-scm.com/downloads>

2. Configure git

```
git config --global user.name "John Doe"
```

```
git config --global user.email johndoe@example.com
```

3. Clone Repo:

```
git clone https://github.com/DataScienceHamburg/Python_ML_DS_Material.git
```

Oder Download als ZIP:

[https://github.com/DataScienceHamburg/Python\\_ML\\_DS\\_Material](https://github.com/DataScienceHamburg/Python_ML_DS_Material)



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# System Setup

VS Code Extension



**Jupyter**

🕒 789ms

Jupyter notebook support, inte...

ms-toolsai



**Pylance**

🕒 552ms

A performant, feature-rich lang...

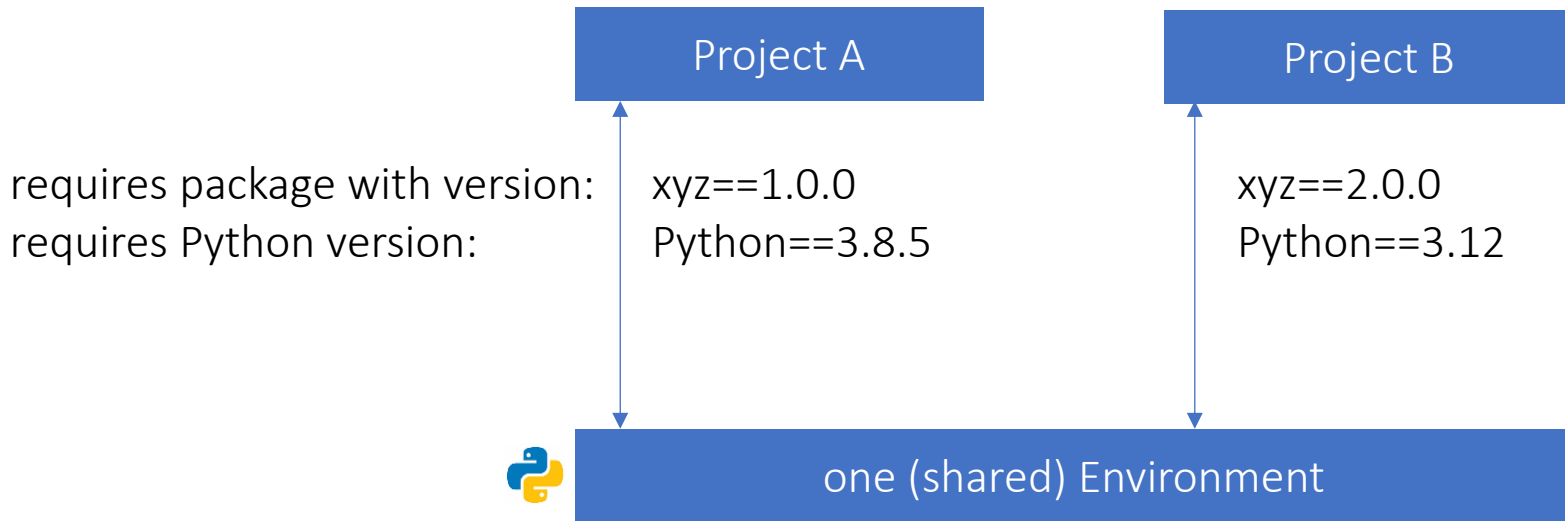
ms-python



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# System Setup

Environment: Problem

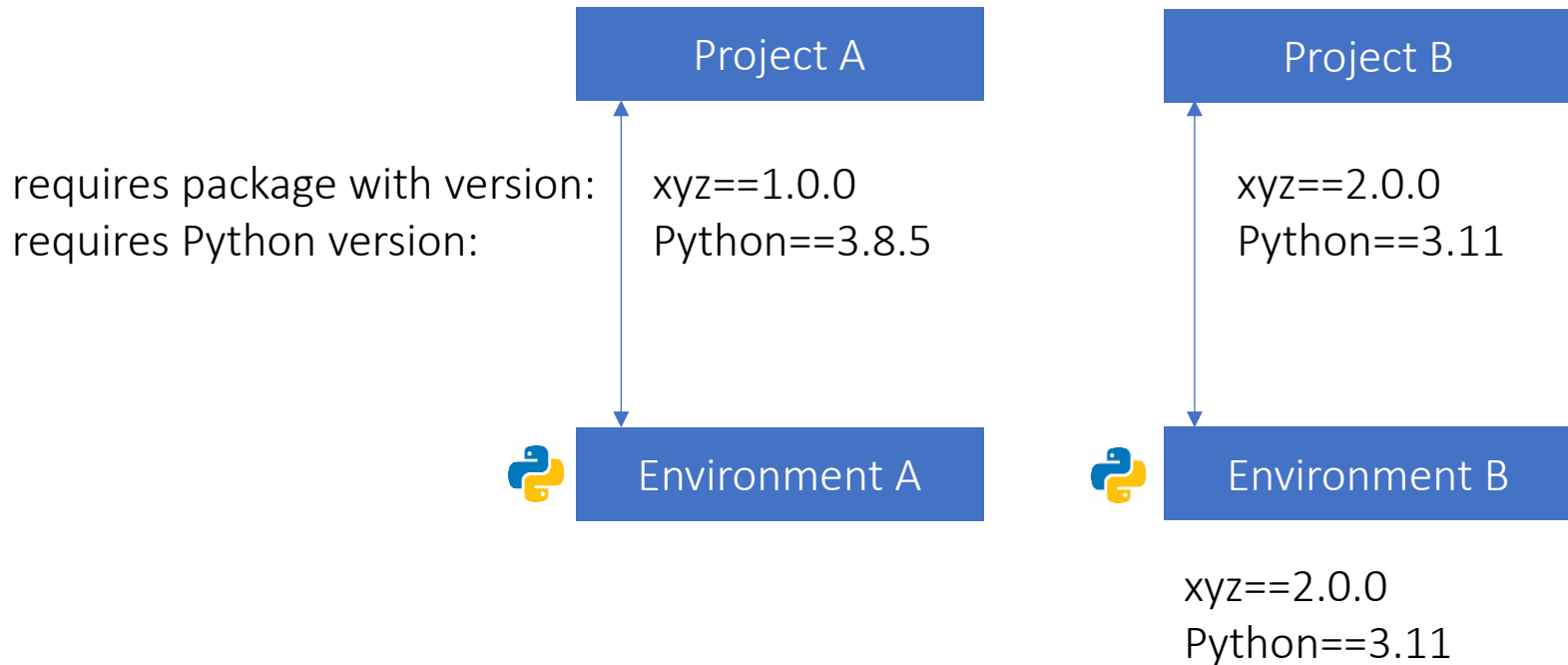


package xyz can be available only in one version  
Python only available in one version



# System Setup

Environment: Solution





# System Setup

## Python Environment

An Environment is an isolated bundle of packages and Python versions.

It allows to

- avoid conflicts of packages
- easy setup for a project on another computer
- Available Environments:

Conda  
(requires Anaconda  
installation)

venv

Poetry

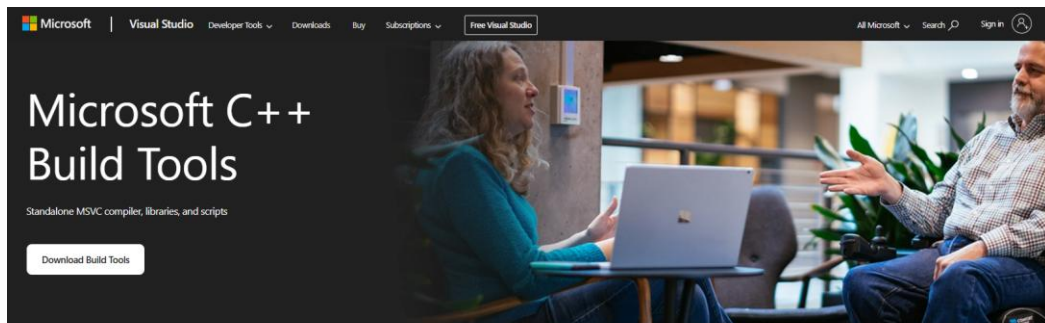
uv



# System Setup

## Python Environment

### Windows: install C++ Build Tools



The Microsoft C++ Build Tools provides MSVC toolsets via a scriptable, standalone installer without Visual Studio. Recommended if you build C++ libraries and applications targeting Windows from the command-line (e.g. as part of your continuous integration workflow). Includes tools shipped in Visual Studio 2015 Update 3, Visual Studio 2017, Visual Studio 2019, and latest version of Visual Studio 2022.

[Walkthrough: Compiling a Native C++ Program on the Command Line](#) →

How you can use the Build Tools

<https://visualstudio.microsoft.com/visual-cpp-build-tools/>



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# System Setup

## Python Environment – uv

- use **uv** as environment
  1. pip install uv
  2. uv sync

- set up from scratch

`uv init`

`uv python install 3.12`

`uv venv`

`.venv\Scripts\activate`

`uv add langchain`

