

# System Setup



[gollnickdata.de](https://gollnickdata.de)

# System Setup

Programs and Environment



1. Install Python



Visual Studio Code

or



Cursor

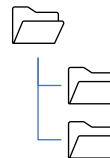
2. Install IDE



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

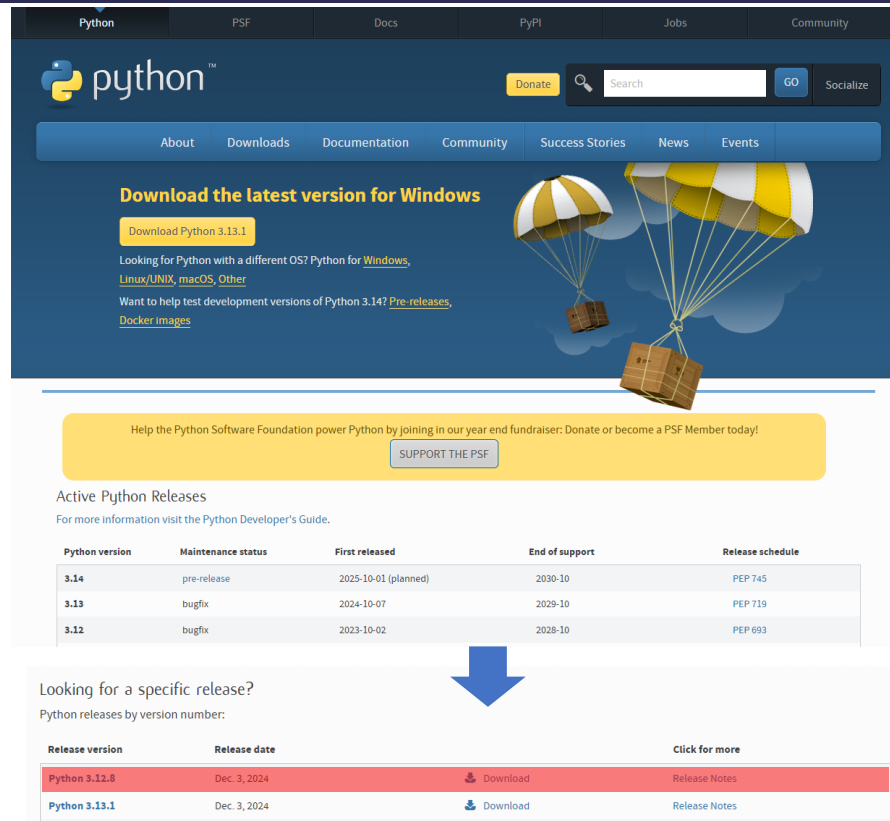
The screenshot displays the Firebase Studio web interface in a browser. The address bar shows the URL: `studio.firebase.google.com/mypoetrytest-73499963`. The interface is divided into several panels:

- EXPLORER:** A file tree on the left showing the project structure. It includes folders like `devnix`, `venv`, `code`, `scripts`, and `src`. A file named `20_model_chat_groq.py` is selected.
- Code Editor:** The central area shows the content of `20_model_chat_groq.py`. The code imports `ChatGroq` and `load_dotenv`, then creates a `ChatGroq` model instance and calls `invoke` with the prompt "What is a Huggingface?".
- INTERACTIVE:** A panel on the right showing the execution output. It displays the `system_fingerprint`, `finish_reason`, `usage_metadata`, and `total_tokens` for the model call.
- TERMINAL:** A panel at the bottom showing the command-line output of the `poetry` commands used to install the `langchain-groq` and `python-dotenv` packages.

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. The main content area features a large banner for downloading the latest version for Windows, with a 'Download Python 3.13.1' button. Below the banner, there's a section for 'Active Python Releases' with a table of release information. A blue arrow points from the 'Active Python Releases' section to a 'Looking for a specific release?' section, which shows a table of releases by version number.

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.

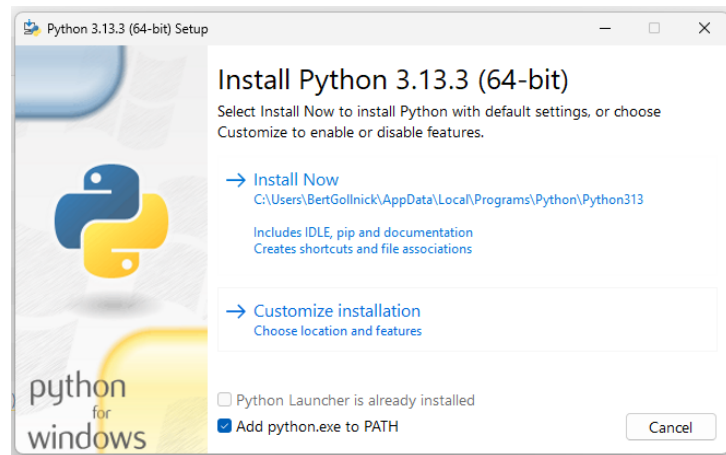
Python version	Maintenance status	First released	End of support	Release schedule
3.14	pre-release	2025-10-01 (planned)	2030-10	PEP 745
3.13	bugfix	2024-10-07	2029-10	PEP 719
3.12	bugfix	2023-10-02	2028-10	PEP 693

Looking for a specific release?

Python releases by version number:

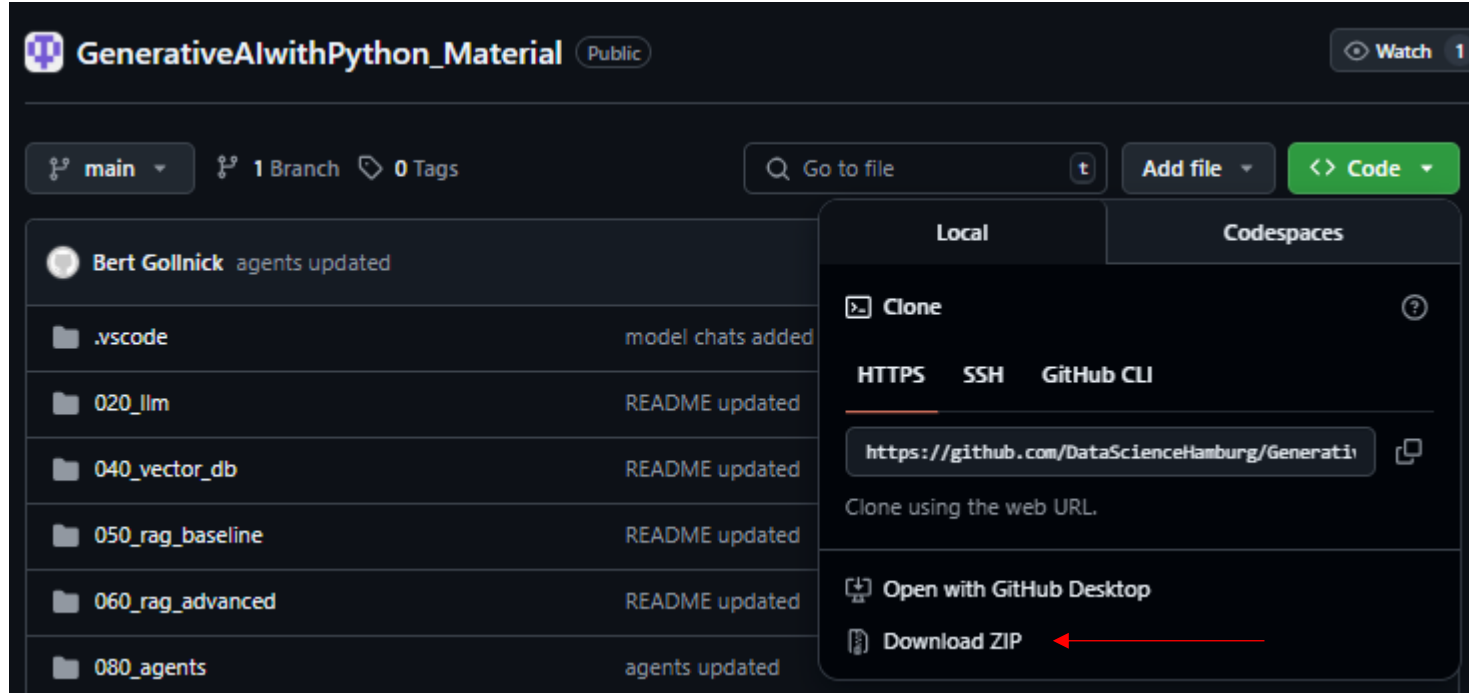
Release version	Release date	Click for more
Python 3.12.8	Dec. 3, 2024	<a href="#">Download</a> <a href="#">Release Notes</a>
Python 3.13.1	Dec. 3, 2024	<a href="#">Download</a> <a href="#">Release Notes</a>

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



# System Setup

Git – Option 1 (beginner)



The screenshot shows the GitHub interface for the repository **GenerativeAIwithPython\_Material**, which is public. The repository has 1 branch (main) and 0 tags. The file list on the left includes:

- Bert Gollnick** agents updated
- .vscode** model chats added
- 020\_llm** README updated
- 040\_vector\_db** README updated
- 050\_rag\_baseline** README updated
- 060\_rag\_advanced** README updated
- 080\_agents** agents updated

The 'Clone' dropdown menu is open, showing options for cloning the repository. The 'Local' tab is selected, and the 'Clone' button is highlighted. The 'HTTPS' option is selected, and the URL `https://github.com/DataScienceHamburg/Generati` is displayed. A red arrow points to the 'Download ZIP' option.

# System Setup

Git – Option 2 (advanced)

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/GenerativeKlmitPython\_Material.git
```



# System Setup

VS Code Extension




**Jupyter**

🕒 789ms

Jupyter notebook support, inte...

ms-toolsai

⚙️



**Python**

🕒 36ms

Static type checking for Python

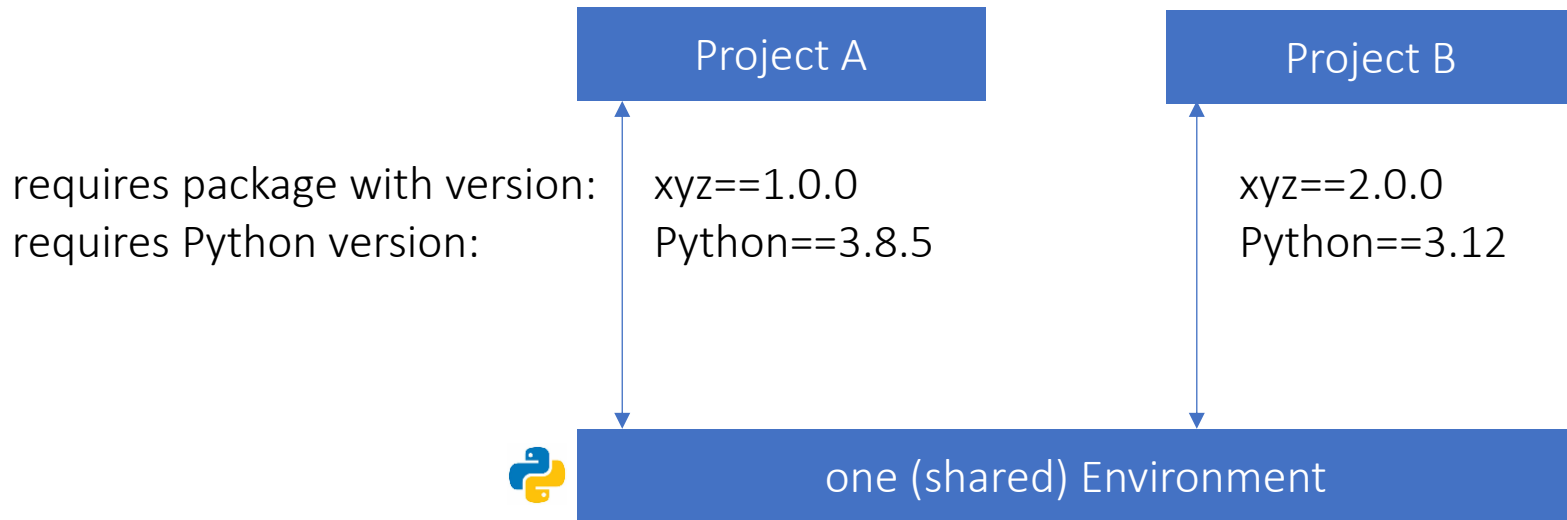
🛡️ Anysphere

⚙️



# System Setup

Environment: Problem



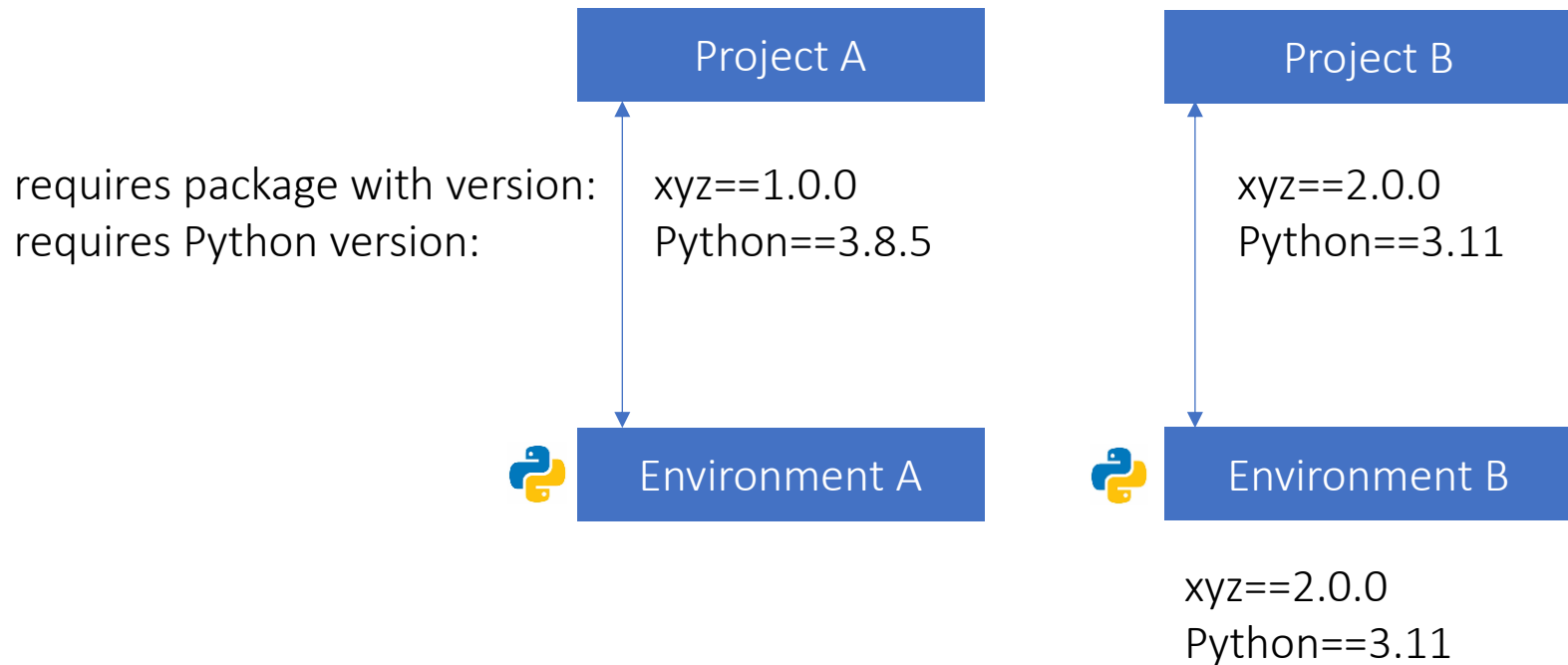
package xyz can be available only in one version  
Python only available in one version





# 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

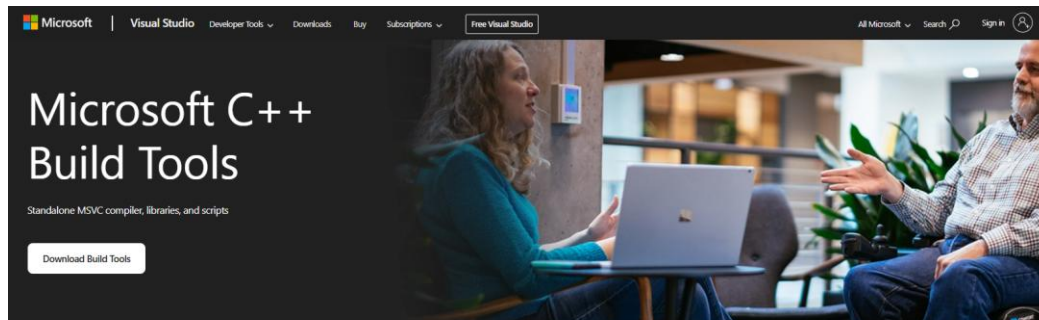


# System Setup

Python Environment – venv

Windows: install C++ Build Tools

Mac: use faiss-cpu



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

## OpenAI API Key

Personal

Course\_VectorDbRagAgents

Playground

Dashboard

SETTINGS

Your profile

ORGANIZATION

General

API keys

Admin keys

Members

Projects

Billing

Limits

Usage

Data controls

Verifications

PROJECT

General

API keys

Members

Limits

Billing

Overview

Payment methods

Billing history

Preferences

Pay as you go

Credit balance ⓘ

\$7.75

Auto recharge is off

When your credit balance reaches \$0, your API requests will stop working. Enable automatic recharge to automatically keep your balance topped up.

Enable auto recharge

Add to credit balance

Cancel plan

Payment methods

Add or change payment method

Preferences

Manage billing information

Pricing

View pricing and FAQs

Billing history

View past and current invoices

Usage limits

Set monthly spend limits

Create new secret key

Owned by

You

Service account

This API key is tied to your user and can make requests against the selected project. If you are removed from the organization or project, this key will be disabled.

Name

Optional

My Test Key

Project

Select project

Permissions

All

Restricted

Read Only

Cancel

Create secret key