

# Python Developers Survey 2023

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(untitled)

Hey Pythonista,

**This is the seventh iteration of the official Python Developers Survey. The aim of this survey is to help us understand how the world of Python development looks today and how it compares to last year.**

**The results of this survey serve as a major source of knowledge about the current state of the Python community, and we encourage you to support this initiative by taking 10–15 minutes to fill it out.**

**After the survey is over, we will publish the aggregated results and perform a random draw of 20 winners (from those who complete the survey in its entirety), who will each receive a \$100 Amazon Gift Card or a local equivalent.**

**Thank you for contributing to the community's efforts!**

**The survey is organized in partnership between the Python Software Foundation and JetBrains. It's hosted by JetBrains, so your responses will be subject to the JetBrains Survey Terms and Conditions.**

**\* Indicates a required question**

**[Survey Terms and Conditions](#)\***

**[ ] I have read and I accept these Terms and Conditions**

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**language**

**Page exit logic:** Skip / Disqualify Logic**IF:** #1 Question "Is Python the main language you use for your current projects?" is one of the following answers ("No, I don't use Python for my current projects") **THEN:** Jump to [page 17 - DEMOGRAPHICS](#)

**Logic:** Show/hide trigger exists.

**Is Python the main language you use for your current projects?\***

- ☐ Yes
- ☐ No, I use Python as a secondary language
- ☐ No, I don't use Python for my current projects

**What other language(s) do you use?\***

- ☐ None
- ☐ Java
- ☐ JavaScript
- ☐ C/C++
- ☐ PHP
- ☐ C#
- ☐ Ruby
- ☐ Bash / Shell
- ☐ Objective-C
- ☐ Go
- ☐ Visual Basic
- ☐ Scala
- ☐ SQL
- ☐ Kotlin
- ☐ R
- ☐ Swift
- ☐ Clojure
- ☐ Perl
- ☐ Rust
- ☐ Groovy
- ☐ TypeScript

☐ CoffeeScript

☐ HTML/CSS

☐ Julia

☐ Mojo

☐ Other, please specify:: \_\_\_\_\_ \*

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## **purpose**

**How long have you been programming in Python?\***

☐ Less than 1 year

☐ 1–2 years

☐ 3–5 years

☐ 6–10 years

☐ 11+ years

**How many years of professional coding experience do you have?\***

☐ Less than 1 year

☐ 1–2 years

☐ 3–5 years

☐ 6–10 years

☐ 11+ years

**For what purposes do you mainly use Python?\***

☐ Work

☐ Personal, educational, or side projects

☐ Both for work and personal projects

**What do you use Python for?\***

- ☐ Educational purposes
- ☐ MLOps
- ☐ Data engineering
- ☐ Academic research
- ☐ Data analysis
- ☐ Design / Data visualization
- ☐ DevOps / systems administration / writing automation scripts
- ☐ Software testing / Writing automated tests
- ☐ Software prototyping
- ☐ Web development
- ☐ Machine learning
- ☐ Mobile development
- ☐ Desktop development
- ☐ Computer graphics
- ☐ Network programming
- ☐ Game development
- ☐ Multimedia applications development (*apps handling various types of multimedia content, e.g. audio, graphics, etc.*)
- ☐ Embedded development
- ☐ Programming of web parsers / scrapers / crawlers
- ☐ Other, please specify:: \_\_\_\_\_ \*

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**Hidden Value: Roles count**

Value: [question("answer count"), id="219"]

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**(untitled)**

**Logic: Hidden unless: Roles count is greater than "1"**

Piping: Piped Values From Question 6. ( What do you use Python for?)

**What do you use Python for the most?\***

Piping: Piped From Question 6. ( What do you use Python for?)

**To what extent are you involved in the following activities?\***

	primary activity	secondary activity	hobby
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## open source

Logic: Show/hide trigger exists.

**In the past year, have you contributed to open source projects using Python?\***

☐ Yes

☐ No

Logic: Hidden unless: #8 Question "In the past year, have you contributed to open source projects using Python?" is one of the following answers ("Yes")

**In the past year, how would you describe your contributions to open source?\***

☐ Maintainer / Governance / Leadership

☐ Documentation / Examples / Educational

☐ Code

☐ Tests

☐ Triaging issues or feature requests

☐ Community building / Outreach

☐ Other, please specify:: \_\_\_\_\_ \*

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## Python version

**Logic: Show/hide trigger exists.**

**Which version of Python do you use the most?\***

- ☐ Python 3
- ☐ Python 2

**Logic: Hidden unless: #10 Question "Which version of Python do you use the most?" is one of the following answers ("Python 2")**

**Which version of Python 2 do you use the most?\***

- ☐ Python 2.7
- ☐ Python 2.6
- ☐ Python 2.5
- ☐ Python 2.4
- ☐ Python 2.3
- ☐ Python 2.2
- ☐ Python 2.1
- ☐ Python 2.0

**Logic: Hidden unless: #10 Question "Which version of Python do you use the most?" is one of the following answers ("Python 3")**

**Which version of Python 3 do you use the most?\***

- ☐ Python 3.13 (*unreleased*)
- ☐ Python 3.12
- ☐ Python 3.11
- ☐ Python 3.10
- ☐ Python 3.9

- ☐ Python 3.8
- ☐ Python 3.7
- ☐ Python 3.6
- ☐ Python 3.5 or lower

**What do you typically use to upgrade your Python version?\***

- ☐ I don't update
- ☐ Somebody else manages Python updates for me
- ☐ Python.org
- ☐ Build from source
- ☐ Automatic upgrade via cloud provider
- ☐ Anaconda
- ☐ ActivePython
- ☐ Intel Distribution for Python
- ☐ OS-wide package-management tool (*via apt-get, yum, homebrew, etc.*)
- ☐ pyenv
- ☐ pythonz
- ☐ I use Docker containers
- ☐ Other, please specify:: \_\_\_\_\_ \*

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## Frameworks

**What web frameworks / libraries do you use?\***

- ☐ None
- ☐ Django
- ☐ Django REST Framework
- ☐ web2py
- ☐ Bottle
- ☐ CherryPy
- ☐ Flask

- ☐ Hug
- ☐ Pyramid
- ☐ Tornado
- ☐ Falcon
- ☐ FastAPI
- ☐ Requests
- ☐ aiohttp
- ☐ httpx
- ☐ Streamlit
- ☐ Starlette
- ☐ Quart
- ☐ Twisted
- ☐ Asyncio
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Which Python unit-testing frameworks / libraries do you use, if any?\***

- ☐ None
- ☐ pytest
- ☐ nose
- ☐ unittest
- ☐ doctest
- ☐ tox
- ☐ Hypothesis
- ☐ mock
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Which of the following frameworks / libraries do you use?\***

- ☐ None
- ☐ PyQt
- ☐ PyGTK
- ☐ wxPython
- ☐ Pillow
- ☐ Tkinter



- ☐ Pygame
  - ☐ Kivy
  - ☐ Six
  - ☐ Scrappy
  - ☐ BeautifulSoup
  - ☐ OpenCV-Python
  - ☐ Pydantic
  - ☐ PySide
  - ☐ attrs
  - ☐ Other, please specify:: \_\_\_\_\_ \*
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## Cloud

**Logic: Show/hide trigger exists.**

**Which of the following cloud platforms do you use?\***

- ☐ None
- ☐ Google Cloud Platform
- ☐ AWS
- ☐ Microsoft Azure
- ☐ Rackspace
- ☐ Heroku
- ☐ DigitalOcean
- ☐ Linode
- ☐ PythonAnywhere
- ☐ OpenShift
- ☐ OpenStack
- ☐ Tencent
- ☐ Alibaba
- ☐ Hetzner
- ☐ Oracle Cloud
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Show/hide trigger exists. Hidden unless: #17 Question "Which of the following cloud platforms do you use?" is one of the following answers ("Google Cloud Platform","AWS","Microsoft Azure","Rackspace","Heroku","DigitalOcean","Linode","PythonAnywhere","OpenShift","OpenStack","Tencent","Alibaba","Hetzner","Oracle Cloud","Other, please specify:")**

**How do you run code in the cloud (in the production environment)?\***

- ☐ In virtual machines
- ☐ Within containers
- ☐ On a platform-as-a-service (*such as Heroku or Google App Engine*)
- ☐ Serverless (*such as via AWS Lambda or Cloud Functions*)
- ☐ None
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Show/hide trigger exists. Hidden unless: #18 Question "How do you run code in the cloud (in the production environment)?" is one of the following answers ("Within containers")**

**Do you use Kubernetes for running your code in containers?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #19 Question "Do you use Kubernetes for running your code in containers?" is one of the following answers ("Yes")**

**Which of the following do you use?\***

- ☐ Amazon Elastic Kubernetes Service
- ☐ Azure Kubernetes Service
- ☐ Google Kubernetes Engine
- ☐ RedHat OpenShift
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Hidden unless: #17 Question "Which of the following cloud platforms do you use?" is one of the following answers ("Google Cloud Platform","AWS","Microsoft Azure","Rackspace","Heroku","DigitalOcean","Linode","PythonAnywhere","OpenShift","OpenStack","Tencent","Alibaba","Hetzner","Oracle Cloud","Other, please specify:")**

**How do you develop for the cloud?\***

- ☐ With local system interpreter
- ☐ Locally with virtualenv (or similar)
- ☐ In Docker containers
- ☐ In virtual machines
- ☐ Using WSL
- ☐ In remote development environments (*like Gitpod, GitHub Codespaces, etc.*)
- ☐ Directly in the production environment
- ☐ Other, please specify:: \_\_\_\_\_ \*

**What operating system(s) does your development environment use?\***

- ☐ Windows
- ☐ Linux
- ☐ macOS
- ☐ BSD
- ☐ Other, please specify:: \_\_\_\_\_ \*

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## Data Science and ML

**Logic: Show/hide trigger exists.**

**Do you work on data exploration and processing?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #23 Question "Do you work on data exploration and processing?" is one of the following answers ("Yes")**

**Which tools do you use for data exploration and processing?\***

- ☐ None
- ☐ Airflow
- ☐ Spark
- ☐ Kubeflow
- ☐ Prefect
- ☐ Dask
- ☐ Luigi
- ☐ Dagster
- ☐ NumPy
- ☐ pandas
- ☐ Polars
- ☐ Ray
- ☐ An in-house solution
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Hidden unless: #23 Question "Do you work on data exploration and processing?" is one of the following answers ("Yes")**

**Which tools do you use for data versioning?\***

- ☐ None
- ☐ DVC
- ☐ Pachyderm
- ☐ Delta lake
- ☐ An in-house solution
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Show/hide trigger exists.**

**Do you work on creating dashboards?\***

☐ Yes

☐ No

**Logic: Hidden unless: #26 Question "Do you work on creating dashboards?" is one of the following answers ("Yes")**

**Which libraries do you use for creating dashboards?\***

☐ None

☐ Plotly Dash

☐ Panel

☐ Voila

☐ Streamlit

☐ Gradio

☐ Other, please specify: \_\_\_\_\_ \*

**Logic: Show/hide trigger exists.**

**Do you train or generate predictions from ML models?\***

☐ Yes

☐ No

**Logic: Hidden unless: #28 Question "Do you train or generate predictions from ML models?" is one of the following answers ("Yes")**

**Which frameworks do you use for ML model training or prediction?\***

☐ None

☐ PyTorch

☐ PyTorch Lightning

☐ Huggingface Transformers

☐ TensorFlow

☐ Keras

☐ Apache MXNet

☐ Jax

- ☐ Sklearn
- ☐ DeepSpeed
- ☐ SciPy
- ☐ SciKit-Learn
- ☐ Theano
- ☐ NLTK
- ☐ Gensim
- ☐ spaCy
- ☐ Huggingface Diffusers
- ☐ XGBoost
- ☐ CatBoost
- ☐ LightGBM
- ☐ H2Oai
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Hidden unless: #28 Question "Do you train or generate predictions from ML models?" is one of the following answers ("Yes")**

**Which experiment tracking tools do you use?\***

- ☐ None
- ☐ Tensorboard
- ☐ MLFlow
- ☐ Weights & Biases
- ☐ CometML
- ☐ NeptuneML
- ☐ An in-house solution
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Hidden unless: #28 Question "Do you train or generate predictions from ML models?" is one of the following answers ("Yes")**

**Which platforms do you use for training?\***

- ☐ None
- ☐ Amazon Sagemaker

- ☐ AzureML
- ☐ VertexAI
- ☐ Databricks
- ☐ Dataiku
- ☐ MosaicML
- ☐ Kubeflow
- ☐ Metaflow
- ☐ Dask
- ☐ Ray
- ☐ Jupyter Notebook
- ☐ Cloud VMs with SSH
- ☐ An in-house solution
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Show/hide trigger exists.**

**Do you work on ML deployment and inference?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #32 Question "Do you work on ML deployment and inference?" is one of the following answers ("Yes")**

**Which platforms or tools do you use for deployment and inference?\***

- ☐ None
- ☐ Amazon Sagemaker
- ☐ AzureML
- ☐ VertexAI
- ☐ Databricks
- ☐ Dataiku
- ☐ MosaicML
- ☐ MLFlow
- ☐ Nvidia Triton

- ☐ Kubeflow
- ☐ Huggingface
- ☐ Seldon
- ☐ Bento
- ☐ An in-house solution
- ☐ Other, please specify:: \_\_\_\_\_ \*

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## Tools ( DB, orm, big data)

**Logic: Show/hide trigger exists.**

**Do you practice collaborative development?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #34 Question "Do you practice collaborative development?" is one of the following answers ("Yes")**

**Which tools do you use for collaborative development in Python?**

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**What ORM tool(s) do you use together with Python, if any?\***

- ☐ I don't do database development
- ☐ Raw SQL
- ☐ Django ORM
- ☐ SQLAlchemy
- ☐ Peewee



- ☐ Dejavu
- ☐ PonyORM
- ☐ SQLAlchemy
- ☐ Tortoise ORM
- ☐ SQLModel
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Which database(s) do you regularly use, if any?\***

- ☐ None
- ☐ DB2
- ☐ MS SQL Server
- ☐ MySQL
- ☐ Oracle Database
- ☐ PostgreSQL
- ☐ SQLite
- ☐ Cassandra
- ☐ Couchbase
- ☐ HBase
- ☐ MongoDB
- ☐ Neo4j
- ☐ Redis
- ☐ Amazon Redshift
- ☐ h2
- ☐ MariaDB
- ☐ DynamoDB
- ☐ BigQuery
- ☐ ClickHouse
- ☐ Apache Pinot
- ☐ Apache Druid
- ☐ Spanner
- ☐ Firebase Realtime Database
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Show/hide trigger exists.**

**Do you work with big data?\***

- ☐ Yes
- ☐ No
- ☐ Tough to say

**Logic: Hidden unless: #38 Question "Do you work with big data?" is one of the following answers ("Yes","Tough to say")**

**Which one of these big data frameworks do you work with?\***

- ☐ PySpark
- ☐ PyFlink
- ☐ Great Expectations
- ☐ PyDeequ
- ☐ Other, please specify:: \_\_\_\_\_ \*
- ☐ None

**Logic: Hidden unless: #38 Question "Do you work with big data?" is one of the following answers ("Yes","Tough to say")**

**While working with big data, do you work with a cloud or with a self-hosted solution?\***

- ☐ Cloud
- ☐ Self-hosted
- ☐ Both
- ☐ None

**Which Continuous Integration (CI) system(s) do you regularly use?\***

- ☐ None
- ☐ AppVeyor
- ☐ AWS CodePipeline / AWS CodeStar
- ☐ Azure DevOps

- ☐ Bamboo
- ☐ Bitbucket Pipelines
- ☐ CircleCI
- ☐ CruiseControl
- ☐ GitHub Actions
- ☐ Gitlab CI
- ☐ Google Cloud Build
- ☐ Jenkins / Hudson
- ☐ JetBrains Space
- ☐ TeamCity
- ☐ Travis CI
- ☐ A custom tool
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Which configuration management tools do you use, if any?\***

- ☐ None
- ☐ Salt
- ☐ Puppet
- ☐ Chef
- ☐ Ansible
- ☐ A custom solution
- ☐ Other, please specify:: \_\_\_\_\_ \*

**What systems and languages do you use to create and build documentation?\***

- ☐ None
- ☐ Sphinx
- ☐ Wiki
- ☐ Postman
- ☐ Swagger (OpenAPI)
- ☐ MKDocs
- ☐ Doxygen
- ☐ Other systems, please specify:: \_\_\_\_\_ \*

☐ rST

☐ Markdown

☐ Other language, please specify::

\*

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## main IDE

**Logic: Show/hide trigger exists.**

**What is the main editor you use for your current Python development?\***

☐ None

☐ PyCharm Professional Edition

☐ PyCharm Community Edition

☐ Sublime Text

☐ Vim

☐ Atom

☐ Visual Studio Code

☐ Eclipse with PyDev

☐ JupyterLab

☐ Jupyter Notebook

☐ IntelliJ IDEA

☐ NotePad++

☐ IDLE

☐ Emacs

☐ Python Tools for Visual Studio (*PTVS*)

☐ DataSpell

☐ Spyder

☐ Neovim

☐ Nano

☐ Wing IDE

☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Hidden unless: #44 Question "What is the main editor you use for your current Python development?" is one of the following answers ("Visual Studio Code")**

**Do you use VS Code Data Wrangler?\***

- ☐ Yes
- ☐ No
- ☐ I'm not sure

**Logic: Hidden unless: #44 Question "What is the main editor you use for your current Python development?" is one of the following answers ("Visual Studio Code")**

**Do you use Jupyter support provided by Visual Studio Code?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #44 Question "What is the main editor you use for your current Python development?" is one of the following answers ("IntelliJ IDEA")**

**Do you use Jupyter support provided by IntelliJ IDEA?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #44 Question "What is the main editor you use for your current Python development?" is one of the following answers ("PyCharm Professional Edition")**

**Do you use Jupyter support provided by PyCharm Professional Edition?\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #44 Question "What is the main editor you use for your current Python development?" is one of the following answers ("DataSpell")**

**Do you use Jupyter support provided by DataSpell?\***

☐ Yes

☐ No

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## IDE satisfaction

**Logic: Hidden unless: #44 Question "What is the main editor you use for your current Python development?" is not one of the following answers ("None")**

**Piping: Piped Values From Question 44. (What is the main editor you use for your current Python development?)**

**What editors/IDEs do you use for Python development in addition to [question('value'), id='298']?\***

☐ None

☐ Other, please specify:: \_\_\_\_\_ \*

**Do you regularly work on multiple projects at the same time?\***

☐ No, I only work on one project

☐ Yes, I work on one main and several side projects

☐ Yes, I work on many different projects

**Logic: Hidden unless: IsMobile**

**When developing in Python, how often do you ...? (Optional)**

	Often	From time to time	Never or Almost never
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Use autocompletion in your editor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use a debugger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refactor your code	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use version control systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use code linting <i>(programs that analyze code for potential errors)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use Python virtual environments for your projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use SQL databases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use NoSQL databases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Run / debug or edit code on remote machines <i>(remote hosts, VMs, etc.)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use a Python profiler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write tests for your code	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use code coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Use type hinting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use Continuous Integration tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use issue trackers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Page entry logic:** This page will show when: #44 Question "What is the main editor you use for your current Python development?" is not one of the following answers ("None")

## IDE questions

**What are your primary reasons for using [question('value'), id='298'] as your main IDE or editor? (Optional)**

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**Logic:** Show/hide trigger exists.

**How likely is it that you would recommend [question('value'), id='298'] to a friend or colleague?**

Not at all likely

☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10

Extremely likely

**Logic:** Hidden unless: #54 Question "



How likely is it that you would recommend [question('value'), id='298'] to a friend or colleague?

" is one of the following answers ("0","1","2","3","4","5","6","7","8","9")

If you have any additional comments about [question('value'), id='298'], please share it here:

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## Python Packaging

Which of the following tools do you use to isolate Python environments between projects?\*

☐ venv (*standard library*)

☐ virtualenv (Python package)

☐ virtualenvwrapper

☐ Hatch

☐ Poetry

☐ Pipenv

☐ Conda

☐ I do not use any tools to isolate Python environments

☐ Other, please specify:: \_\_\_\_\_

Which tools do you use to manage dependencies?\*

☐ Pip

☐ Conda

☐ Pipenv

☐ Poetry

☐ PDM

- ☐ Hatch
- ☐ pip-tools
- ☐ Other, please specify:: \_\_\_\_\_
- ☐ None

**What format(s) is your application dependency information stored in?\***

- ☐ requirements.txt
- ☐ pyproject.toml
- ☐ Pipfile
- ☐ hatch.toml
- ☐ environment.yml
- ☐ setup.py
- ☐ setup.cfg
- ☐ Other, please specify:: \_\_\_\_\_
- ☐ I don't store dependency information

**Where do you install packages from? \***

- ☐ PyPI
- ☐ A local source
- ☐ An internal mirror of PyPI
- ☐ A private Python Package Index
- ☐ Anaconda
- ☐ Other Conda channels (*conda-forge or similar*)
- ☐ GitHub
- ☐ Artifactory
- ☐ GitLab
- ☐ From Linux distribution
- ☐ Other, please specify:: \_\_\_\_\_

**Logic: Show/hide trigger exists.**

**Do you develop and publish Python packages?\***

- ☐ Yes
- ☐ No
- ☐ I'm not sure

**Logic: Hidden unless: #60 Question "Do you develop and publish Python packages?" is one of the following answers ("Yes")**

**Which tools do you use to publish packages of your Python libraries?\***

- ☐ Flit
- ☐ Hatch
- ☐ PDM
- ☐ Twine
- ☐ Poetry
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Do you use a virtual environment (e.g. virtualenv) in containers (e.g. Docker)? \***

- ☐ Yes
- ☐ No
- ☐ I don't use containers for Python development
- ☐ Other, please specify:: \_\_\_\_\_ \*

**Do you work with a monorepo, i.e. a single repository containing several packages / services, each with its own independently managed dependencies?\***

- ☐ Yes
- ☐ No

**Logic: Show/hide trigger exists.**

**Do you build binary modules for Python using another language? (like C, C++, Rust, or Go)\***

- ☐ Yes
- ☐ No

**Logic: Hidden unless: #64 Question "Do you build binary modules for Python using another language? (like C, C++, Rust, or Go)" is one of the following answers ("Yes")**

**Which language(s) do you use for building binary modules for Python?\***

- ☐ C
  - ☐ C++
  - ☐ Rust
  - ☐ Go
  - ☐ Fortran
  - ☐ Assembly
  - ☐ C# / .NET
  - ☐ Other, please specify:: \_\_\_\_\_ \*
- 

## **edu and news**

**Logic: Show/hide trigger exists.**

**Where do you typically learn about new tools and technologies that are relevant to your Python development?\***

- ☐ None
- ☐ Python.org
- ☐ Documentation and APIs
- ☐ Books
- ☐ Blogs
- ☐ Podcasts
- ☐ YouTube
- ☐ Stack Overflow
- ☐ AI Tools
- ☐ Online coding schools and MOOCs (*Codecademy, JetBrains Academy, Coursera, edX, Udacity, etc.*)
- ☐ Paid trainer / consultant / mentor

☐ Conferences / events

☐ Tech magazines / printed media

☐ Other, please specify:: \_\_\_\_\_ \*

**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("Blogs")**

**What are your favorite Python-related blogs?**

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**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("Podcasts")**

**What are your favorite Python-related podcasts?**

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**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("YouTube")**

**What are your favorite Python-related YouTube channels / creators?**

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**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("AI Tools")**

**What AI Tools do you use?**

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**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("Online coding schools and MOOCs (*Codecademy, JetBrains Academy, Coursera, edX, Udacity, etc.*)")**

**What online coding schools and MOOCs do you attend?**

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**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("Conferences / events")**

**What are your favorite Python-related conferences / events?**

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**Logic: Hidden unless: #66 Question "Where do you typically learn about new tools and technologies that are relevant to your Python development?" is one of the following answers ("Tech magazines / printed media")**

**What are your favorite tech magazines / printed media?**

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## DEMOGRAPHICS

**Logic: Show/hide trigger exists.**

**How do you spend most of your time working? \***

- ☐ As part of a team
- ☐ On your own project(s) independently
- ☐ As an external consultant or trainer

**Logic: Hidden unless: #74 Question "How do you spend most of your time working? " is one of the following answers ("As part of a team")**

**How many people are in your project team?\***

- ☐ 2–7 people
- ☐ 8–12 people
- ☐ 13–20 people
- ☐ 21–40 people
- ☐ More than 40 people

**Logic: Show/hide trigger exists.**

**What is your employment status?\***

- ☐ Fully employed by a company / organization
- ☐ Partially employed by a company / organization
- ☐ Self-employed (*a person earning income directly from one's own business, trade, or profession*)
- ☐ Freelancer (*a person pursuing a profession without a long-term commitment to any one employer*)
- ☐ Working student
- ☐ Student
- ☐ Currently unemployed
- ☐ Retired
- ☐ Other, please specify: \_\_\_\_\_ \*

**Logic: Hidden unless: #76 Question "What is your employment status?" is one of the following answers ("Fully employed by a company / organization", "Partially employed by a company / organization", "Self-employed (*a person earning income directly from one's own business, trade, or profession*)", "Working student")**

**How many people work for your company / organization?\***

- ☐ Just me
- ☐ 2–10
- ☐ 11–50
- ☐ 51–500
- ☐ 501–1,000
- ☐ 1,001–5,000
- ☐ More than 5,000
- ☐ Not sure

**Logic: Hidden unless: #76 Question "What is your employment status?" is one of the following answers ("Fully employed by a company / organization", "Partially employed by a company / organization", "Self-employed (*a person earning income directly from one's own business, trade, or profession*)", "Working student")**

**Which of the following industries best describes your company's business?**

**Logic: Show/hide trigger exists.**



**Choose one from the list:\***

- ☐ Accounting / Finance / Insurance
- ☐ Administration / Management
- ☐ Banking / Real Estate / Mortgage Financing
- ☐ Business / Strategic Management
- ☐ Construction / Architecture
- ☐ Customer Support
- ☐ Design
- ☐ Education / Training
- ☐ Human Resources
- ☐ Information Technology / Software Development
- ☐ Law
- ☐ Logistics/ Transportation
- ☐ Machinery
- ☐ Manufacturing
- ☐ Marketing
- ☐ Medicine / Health
- ☐ Non-profit
- ☐ Publishing
- ☐ Restaurants / Hospitality
- ☐ Sales / Distribution / Business Development
- ☐ Science
- ☐ Security
- ☐ Service/ Maintenance
- ☐ Other

**Logic: Hidden unless: Question "Choose one from the list:" is one of the following answers ("Other")**

Other, please specify:: \_\_\_\_\_

**Logic: Hidden unless: (#76 Question "What is your employment status?" is one of the following answers ("Fully employed by a company / organization", "Partially employed by a company / organization", "Self-employed (*a person earning income directly from one's own business, trade, or profession*)", "Working student") AND Question "Choose one from the list:" is one of the following answers ("Information Technology / Software Development"))**

**Which of the following industries do you develop for?**

**Logic: Show/hide trigger exists.**

**Choose one from the list:\***

- ☐ Accounting / Finance / Insurance
- ☐ Administration / Management
- ☐ Banking / Real Estate / Mortgage Financing
- ☐ Business / Strategic Management
- ☐ Construction / Architecture
- ☐ Customer Support
- ☐ Design
- ☐ Education / Training
- ☐ Human Resources
- ☐ Information Technology / Software Development
- ☐ Law
- ☐ Logistics/ Transportation
- ☐ Machinery
- ☐ Manufacturing
- ☐ Marketing
- ☐ Medicine / Health
- ☐ Non-profit
- ☐ Publishing
- ☐ Restaurants / Hospitality
- ☐ Sales / Distribution / Business Development
- ☐ Science
- ☐ Security
- ☐ Service / Maintenance
- ☐ Other

**Logic: Hidden unless: Question "Choose one from the list:" is one of the following answers ("Other")**

Other, please specify:\*

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## Company 2

**Logic: Hidden unless: #76 Question "What is your employment status?" is one of the following answers ("Fully employed by a company / organization", "Partially employed by a company / organization", "Self-employed (*a person earning income directly from one's own business, trade, or profession*)", "Freelancer (*a person pursuing a profession without a long-term commitment to any one employer*)", "Working student")**

**Which of the following best describes your job role(s)?\***

- ☐ DBA
- ☐ Architect
- ☐ QA engineer
- ☐ Developer / Programmer
- ☐ Technical writer
- ☐ Technical support
- ☐ Data analyst
- ☐ Data scientist
- ☐ ML engineer / MLOps
- ☐ Academic researcher
- ☐ Data engineer
- ☐ Business analyst
- ☐ Team lead
- ☐ Product manager
- ☐ CIO / CEO / CTO
- ☐ Systems analyst
- ☐ Other, please specify: \_\_\_\_\_ \*

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## Demographics

**Could you tell us your age range?\***

- ☐ 17 or younger
- ☐ 18–20

- ☐ 21–29
- ☐ 30–39
- ☐ 40–49
- ☐ 50–59
- ☐ 60 or older

**Gender: (Optional)**

- ☐ Male
- ☐ Female
- ☐ Non-binary, genderqueer, or gender non-conforming
- ☐ Prefer not to say
- ☐ Other, please specify:: \_\_\_\_\_

**What is your country or region?\***

- ☐ Afghanistan
- ☐ Albania
- ☐ Algeria
- ☐ American Samoa
- ☐ Andorra
- ☐ Angola
- ☐ Anguilla
- ☐ Antarctica
- ☐ Antigua and Barbuda
- ☐ Argentina
- ☐ Armenia
- ☐ Aruba
- ☐ Australia
- ☐ Austria
- ☐ Azerbaijan
- ☐ Bahamas
- ☐ Bahrain
- ☐ Bangladesh
- ☐ Barbados

- ☐ Belarus
- ☐ Belgium
- ☐ Belize
- ☐ Benin
- ☐ Bermuda
- ☐ Bhutan
- ☐ Bolivia
- ☐ Bosnia and Herzegovina
- ☐ Botswana
- ☐ Brazil
- ☐ British Indian Ocean Territory
- ☐ Brunei
- ☐ Bulgaria
- ☐ Burkina Faso
- ☐ Burundi
- ☐ Cambodia
- ☐ Cameroon
- ☐ Canada
- ☐ Cape Verde
- ☐ Cayman Islands
- ☐ Central African Republic
- ☐ Chad
- ☐ Chile
- ☐ China Mainland
- ☐ Christmas Island
- ☐ Cocos (Keeling) Islands
- ☐ Colombia
- ☐ Comoros
- ☐ Congo, Democratic Republic of the
- ☐ Congo, Republic of the
- ☐ Cook Islands
- ☐ Costa Rica
- ☐ Cote d'Ivoire
- ☐ Croatia
- ☐ Cuba

- ☐ Curacao
- ☐ Cyprus
- ☐ Czech Republic
- ☐ Denmark
- ☐ Djibouti
- ☐ Dominica
- ☐ Dominican Republic
- ☐ Ecuador
- ☐ Egypt
- ☐ El Salvador
- ☐ Equatorial Guinea
- ☐ Eritrea
- ☐ Estonia
- ☐ Eswatini
- ☐ Ethiopia
- ☐ Falkland Islands (Malvinas)
- ☐ Faroe Islands
- ☐ Fiji
- ☐ Finland
- ☐ Finland: Aland Islands
- ☐ France
- ☐ French Guiana
- ☐ French Polynesia
- ☐ French Southern Territories
- ☐ Gabon
- ☐ Gambia
- ☐ Georgia
- ☐ Germany
- ☐ Ghana
- ☐ Gibraltar
- ☐ Greece
- ☐ Greenland
- ☐ Grenada
- ☐ Guadeloupe
- ☐ Guam

- ☐ Guatemala
- ☐ Guernsey
- ☐ Guinea
- ☐ Guinea-Bissau
- ☐ Guyana
- ☐ Haiti
- ☐ Holy See (Vatican City State)
- ☐ Honduras
- ☐ Hong Kong
- ☐ Hungary
- ☐ Iceland
- ☐ India
- ☐ Indonesia
- ☐ Iran
- ☐ Iraq
- ☐ Ireland
- ☐ Isle of Man
- ☐ Israel
- ☐ Italy
- ☐ Jamaica
- ☐ Japan
- ☐ Jersey
- ☐ Jordan
- ☐ Kazakhstan
- ☐ Kenya
- ☐ Kiribati
- ☐ Kosovo
- ☐ Kuwait
- ☐ Kyrgyzstan
- ☐ Lao People's Democratic Republic
- ☐ Latvia
- ☐ Lebanon
- ☐ Lesotho
- ☐ Liberia
- ☐ Libya

- ☐ Liechtenstein
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Macedonia
- ☐ Macao
- ☐ Madagascar
- ☐ Malawi
- ☐ Malaysia
- ☐ Maldives
- ☐ Mali
- ☐ Malta
- ☐ Marshall Islands
- ☐ Martinique
- ☐ Mauritania
- ☐ Mauritius
- ☐ Mayotte
- ☐ Mexico
- ☐ Micronesia
- ☐ Moldova
- ☐ Monaco
- ☐ Mongolia
- ☐ Montenegro
- ☐ Montserrat
- ☐ Morocco
- ☐ Mozambique
- ☐ Myanmar
- ☐ Namibia
- ☐ Nauru
- ☐ Nepal
- ☐ Netherlands
- ☐ New Caledonia
- ☐ New Zealand
- ☐ Nicaragua
- ☐ Niger
- ☐ Nigeria



- ☐ Niue
- ☐ Norfolk Island
- ☐ North Korea
- ☐ North Macedonia
- ☐ Northern Mariana Islands
- ☐ Norway
- ☐ Oman
- ☐ Pakistan
- ☐ Palau
- ☐ Palestinian Territories
- ☐ Panama
- ☐ Papua New Guinea
- ☐ Paraguay
- ☐ Peru
- ☐ Philippines
- ☐ Pitcairn
- ☐ Poland
- ☐ Portugal
- ☐ Puerto Rico
- ☐ Qatar
- ☐ Reunion
- ☐ Romania
- ☐ Russian Federation
- ☐ Rwanda
- ☐ Saint Helena
- ☐ Saint Kitts and Nevis
- ☐ Saint Lucia
- ☐ Saint Pierre and Miquelon
- ☐ Saint Vincent and the Grenadines
- ☐ Samoa
- ☐ San Marino
- ☐ Sao Tome and Principe
- ☐ Saudi Arabia
- ☐ Senegal
- ☐ Serbia

- ☐ Seychelles
- ☐ Sierra Leone
- ☐ Singapore
- ☐ Slovakia
- ☐ Slovenia
- ☐ Solomon Islands
- ☐ Somalia
- ☐ South Africa
- ☐ South Georgia and the South Sandwich Islands
- ☐ South Korea
- ☐ South Sudan
- ☐ Spain
- ☐ Spain: Canary Islands
- ☐ Sri Lanka
- ☐ Sudan
- ☐ Suriname
- ☐ Svalbard and Jan Mayen
- ☐ Sweden
- ☐ Switzerland
- ☐ Syria
- ☐ Taiwan
- ☐ Tajikistan
- ☐ Tanzania
- ☐ Thailand
- ☐ Timor-Leste
- ☐ Togo
- ☐ Tokelau
- ☐ Tonga
- ☐ Trinidad and Tobago
- ☐ Tunisia
- ☐ Türkiye
- ☐ Turkmenistan
- ☐ Turks and Caicos Islands
- ☐ Tuvalu
- ☐ Uganda

- ☐ Ukraine
  - ☐ United Arab Emirates
  - ☐ United Kingdom
  - ☐ United States
  - ☐ Uruguay
  - ☐ Uzbekistan
  - ☐ Vanuatu
  - ☐ Venezuela
  - ☐ Vietnam
  - ☐ Virgin Islands, British
  - ☐ Virgin Islands, U.s.
  - ☐ Wallis and Futuna
  - ☐ Western Sahara
  - ☐ Yemen
  - ☐ Zambia
  - ☐ Zimbabwe
- 

**What did you think about this survey? We would be happy to hear your feedback:**

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**Please provide us with your contact details (Optional):**

**Logic: Hidden unless: QUESTION NOT FOUND! is one of the following answers [NO OPTIONS SET]**

Name::

Validation: %s format expected

Email address::

## Would you like to ...?

- ☐ Receive the results of this survey
- ☐ Participate in Python Developers Survey 2024
- ☐ Participate in JetBrains research studies

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## Full

Logic: Hidden unless: #1 Question "Is Python the main language you use for your current projects?" is one of the following answers ("Yes", "No, I use Python as a secondary language")

## Thank you for sharing with us!

We will soon announce the winners by email.

The results of this survey will be published on the Python Software Foundation and JetBrains website and announced on social media. Keep an eye on [www.python.org](http://www.python.org) and follow [@ThePSF](#) and [@jetbrains](#) on X or PSF on the [Mastodon](#).

**Contribute to the PSF's Recurring Giving Campaign.** The PSF is a non-profit organization entirely supported by its sponsors, members, and the public: <https://www.python.org/psf/donations/>

Check the findings of our [Python Developers Survey 2022](#).

If there's anything you'd like to discuss with us concerning this survey, please email us at [surveys@jetbrains.com](mailto:surveys@jetbrains.com).

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## Disqualification

Logic: Hidden unless: #1 Question "Is Python the main language you use for your current projects?" is one of the following answers ("No, I don't use Python for my current projects")

## Thank you for sharing with us!

As this survey is targeted at Python developers, we have no further questions for you today.

If you know any Python developers who may be interested in taking the survey, feel free to share the link with them.

Keep an eye on [www.python.org](https://www.python.org) and follow [@ThePSF](#) and [@jetbrains](#) on X or PSF on the [Mastodon](#).

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