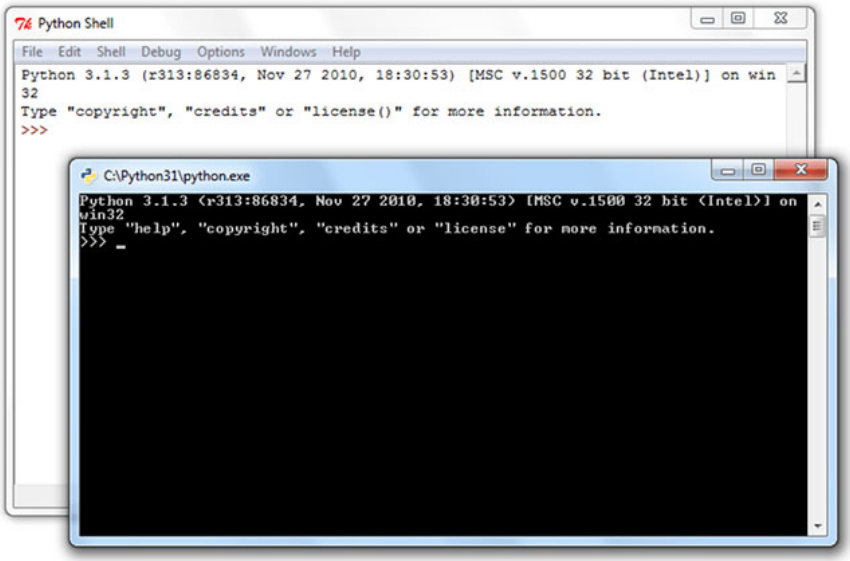
Python - Powerful and intuitive programming language

Python is a free programming language developed by the Python Software Foundation for computers. This open source tool is a programming language that can be used to develop and create various programs.

With Python, users can work more efficiently and integrate systems more effectively.

Along with JavaScript, Python is one of the most popular programming platforms and is preferred by developers due to its wide support, compatibility, and ease of implementation across various types of tasks and programming requirements. . Python also integrates with other languages, such as C and C++ quite well.

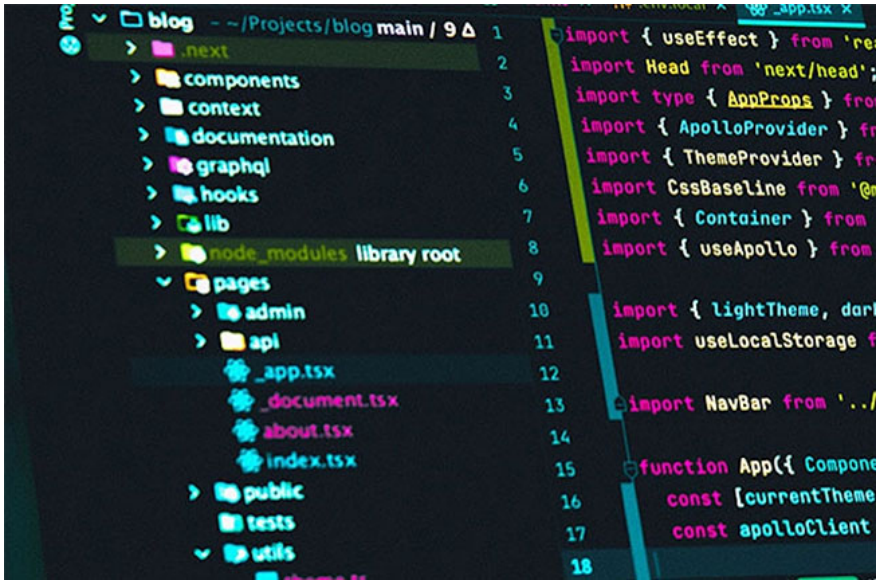


What is Python?

Python was first developed in the late 1980s by Guido van Rossum at Centrum Wiskunde & Informatica (CWI) in the Netherlands. The core philosophy behind the concept of Python is that it serves as a programming language that is simple yet functional, complex yet completely understandable to all users, and compact yet Highly adaptable for many different types of uses.

Today, Python is hailed as a high-level programming language used in developing programs and many other use cases, including web design and creating system scripts. Python includes data structures, dynamic binding, and many other features that make it suitable for creating complex applications, as well as serving as a tool for connecting different components together.

The great thing about Python is that it is built on a solid and compact foundation, but can be extended and adapted for different applications through the use of modules. There are thousands of third-party modules available for this language in the Python Package Index, also known as PyPI. It contains standards and libraries in many fields, such as web development and data science.



New features in Python 3.11

Python 3.11's changelog includes a nearly endless list of bug fixes, improvements, and additions, most of which you'll probably never notice. However, several important new features can significantly improve your Python workflow when stable releases are available. These new features are outlined below.

1. Improve speed

The first significant change that will get data scientists excited is the speed improvement - the standard benchmark suite runs about 25% faster than version 3.10. Python docs require 3.11 which can be up to 60% faster in some cases.

2. More specific error messages

Another interesting feature of Python 3.11 is more specific error messages that help pinpoint the exact location of the error. Instead of returning a 100-line traceback that ends with a difficult-to-interpret error message, Python 3.11 shows the exact expression that caused the error.

3. Exception notes

'Explicit is better than implicit'.

The above sentence is the second line of Zen of Python, a list of 20 design principles of Python. This represents the rule that Python code should be as clear as possible.

To reinforce this design, Python 3.11 introduces exception annotations (PEP 678). Now, inside your except clauses, you can call the **add_note()** function and pass a custom message when you get an error.

4. New import feature

Static typed languages ??help make your code readable and easy to debug. Correctly defining variable types, input functions, and outputs can save you hours of debugging time and make it easier for others to read your code. Adding import comments will also allow modern IDEs to display function definitions as you type their names, making it easier for others to understand your functions.

5. Improvements to the standard libraries

There are a few more quality improvements to the standard libraries. First of all, two long-awaited functions are added to the math module.

Outstanding advantages of Python

Simple and easy to read

Although the number of programming languages ??and development platforms available on the market is increasing today, there are some key factors that make Python stand out from other options. As mentioned earlier, simplicity and readability are paramount. Its language structure Python has similarities with English and some elements from mathematics, making it easy to read code - whether it's written by you or someone else.

High scalability

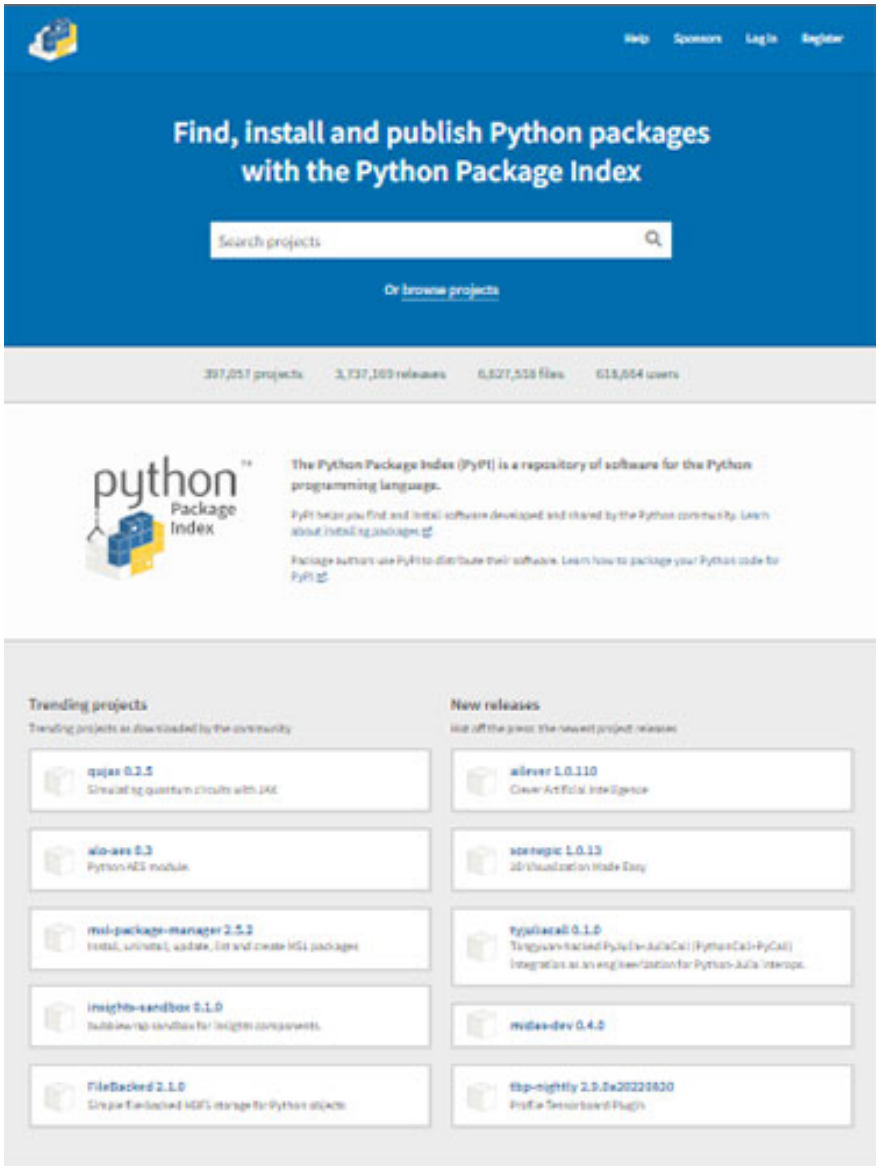
Another point in favor of Python is its high reliability and scalability. Python is ideal for beginners because of its fast performance, ease of use, and doesn't take much time to get used to. Python can also be used in many different types of projects, and developers can choose between multiple object-oriented or procedural programming modes, along with support for different data types.

Runs on most major platforms

Finally, there is the widespread popularity of Python. It runs on most major platforms (including Windows 11) available on the market. Python has built a strong community, providing guidance and contributions to its already robust toolbox. Before you jump in and start coding, first consider the field you are entering as this particular language is not suitable for mobile app development.

Simple, reliable and highly adaptable

Overall, Python is one of the best programming languages ??to learn and helps you get started with program development. It focuses on simplicity and readability making it easy for beginners and experts alike to understand and adapt to a variety of scenarios and use cases. Furthermore, the growing Python Package Index has all the essential tools you will need for more efficient programming.



Advantage

1. simple and easy to use
2. Reliable performance and scalable functionality
3. Python Package Index offers thousands of third-party modules
4. Strong and dedicated community of developers

Defect

1. Not suitable for mobile application development

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