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Programming Language

Python

Python (<i>programminglanguage</i>)	
Full Name	Python
Short Name	Python
Description	A scripting language that is often used by software developers to add programmability to their applications, such as engineering-analysis tools or animation software.
Company	Unkown
Web	Yes
Mobile	No
Enterprise	Yes
Embedded	No

What is Python?

Python is a high-level programming language that is widely used for web development, data analysis, artificial intelligence, scientific computing, and more. It was first released in 1991 by Guido van Rossum.

What are some features of Python?

Python includes features such as dynamic typing, automatic memory management, and support for object-oriented, functional, and procedural programming. It also includes built-in libraries and frameworks for a wide range of tasks, including web development, data analysis, and scientific computing.

How is Python used in web development?

Python is commonly used in web development for server-side scripting, creating dynamic web pages, and interacting with databases and other web services. It can be used with a wide range of web frameworks, including Django, Flask, and Pyramid.

What are some popular Python frameworks and libraries?

Some popular Python frameworks and libraries for web development include Django, Flask, Pyramid, and Bottle. For data analysis and scientific computing, popular libraries include NumPy, Pandas, Matplotlib, and SciPy.

Is Python a compiled or interpreted language?

Python is an interpreted language, meaning that code is executed by an interpreter rather than

compiled into machine code like in a compiled language such as C++.

What is pip?

Pip is the package installer for Python, which allows developers to easily install and manage external libraries and packages for their Python projects. It uses a command-line interface to search, install, upgrade, and uninstall packages.

What is the difference between Python 2 and Python 3?

Python 2 and Python 3 are two major versions of the Python language, with Python 3 being the most recent. The main differences between the two are syntax and features, with Python 3 being more consistent and efficient in some areas, but not fully backward compatible with Python 2. Many new libraries and frameworks are now only available for Python 3.

What are some advantages of using Python?

Some advantages of using Python include its ease of use, readability, and large standard library. It is also a versatile language that can be used for a wide range of applications, and has a large and active community of developers.

How is Python used in data analysis and scientific computing?

Python is commonly used in data analysis and scientific computing for tasks such as data manipulation, visualization, and statistical analysis. It can be used with libraries such as NumPy, Pandas, Matplotlib, and SciPy to perform these tasks efficiently.

What is the difference between a list and a tuple in Python?

In Python, a list is a mutable sequence of elements, while a tuple is an immutable sequence of elements. This means that the elements of a list can be changed after it is created, while the elements of a tuple cannot be changed.

What is a lambda function in Python?

A lambda function in Python is a small anonymous function that can take any number of arguments, but can only have one expression. It is used when a function is needed for a short period of time and does not need to be named.

What is a virtual environment in Python?

A virtual environment in Python is a self-contained environment that allows developers to install and manage dependencies and packages for a specific project without affecting the system-wide installation of Python or other projects. It is created using the venv module in Python.

How is Python used in artificial intelligence and machine learning?

Python is commonly used in artificial intelligence and machine learning for tasks such as data preprocessing, model training, and model deployment. It can be used with libraries such as TensorFlow, Keras, PyTorch, and Scikit-learn to perform these tasks efficiently.

Snippet from [Wikipedia: Python \(programming language\)](#)

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

Python is dynamically typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly procedural), object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library.

Guido van Rossum began working on Python in the late 1980s as a successor to the ABC programming language and first released it in 1991 as Python 0.9.0. Python 2.0 was released in 2000. Python 3.0, released in 2008, was a major revision not completely backward-compatible with earlier versions. Python 2.7.18, released in 2020, was the last release of Python 2.

Python consistently ranks as one of the most popular programming languages, and has gained widespread use in the machine learning community.

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GitHub Topics

- <https://github.com/topics/python>

Python is a dynamically-typed garbage-collected programming language developed by Guido van Rossum in the late 80s to replace ABC. Much like the programming language Ruby, Python was designed to be easily read by programmers. Because of its large following and many libraries, Python can be implemented and used to do anything from webpages to scientific research.

GitHub Trending

- <https://github.com/trending/python?since=monthly>

Hello World

```
import sys
sys.stdout.write("Hello, world!\n")
```

Source: [Wikibooks](#)

Benefits

- Community
- Open-source
- Productivity speed
- Data Structures
- Well-structured and clean code
- Third-Party Modules

External links:

- https://blog.feedspot.com/python_rss_feeds/

See also: [Programming Languages](#)

[programminglanguage](#), [dev-ml](#), [ai](#), [python](#)

ToDo

- Dask - <https://www.nvidia.com/en-us/glossary/data-science/dask/>
- Variables
- Control structures
- Functions
- Object-oriented programming (OOP)
- Classes
- Inheritance
- Polymorphism
- Encapsulation
- Iterators
- Generators
- Decorators
- Built-in data types
- Lists
- Tuples

- Dictionaries
- Sets
- Modules
- Packages
- Exception handling
- File handling
- Regular expressions
- Database connectivity
- GUI programming
- Web frameworks (e.g., Django, Flask)
- Data science libraries (e.g., NumPy, Pandas, Matplotlib)

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