

# Bahasa Pemrograman Python

Sederhana, Fleksibel, dan Kuat

Program Studi Teknologi Informasi



# Sejarah Python



Python diciptakan oleh Guido van Rossum pada akhir 1980-an.



Python 1.0 dirilis pada tahun 1991 dengan fitur seperti fungsionalitas modul dan manajemen memori otomatis.



Python 2.x (2000): Peningkatan kompatibilitas dan pengenalan fitur baru.



Python 3.x (2008): Pembaruan besar dengan penghapusan beberapa fitur lama.



# Filosofi Python

## Zen of Python:

- Beautiful is better than ugly.
- Explicit is better than implicit.
- Simple is better than complex.

Python berfokus pada keterbacaan kode sehingga mendukung kolaborasi tim.



# Popularitas Python



PYTHON MENJADI BAHASA PEMROGRAMAN YANG PALING DICARI (TIOBE INDEX 2024).



DIGUNAKAN OLEH PERUSAHAAN BESAR SEPERTI GOOGLE, NETFLIX, DAN FACEBOOK.



KOMUNITAS PYTHON SANGAT AKTIF DENGAN BANYAK SUMBER DAYA GRATIS.

# Python vs Java

Python lebih sederhana dan ringkas, cocok untuk prototipe cepat.

Java lebih baik untuk aplikasi yang membutuhkan performa tinggi.

Python mendukung tipe data dinamis; Java menggunakan tipe data statis.

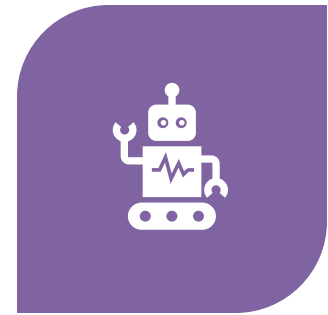
# Python vs C++



PYTHON LEBIH MUDAH DIPELAJARI  
DIBANDINGKAN C++.



C++ UNGGUL DALAM APLIKASI  
YANG MEMBUTUHKAN PERFORMA  
TINGGI (GAME, SISTEM REAL-TIME).



PYTHON SERING DIGUNAKAN  
UNTUK AI, ANALISIS DATA, DAN  
PENGEMBANGAN APLIKASI.

# Kontribusi Python di Dunia Teknologi

Digunakan dalam berbagai bidang teknologi seperti:

- Data science: Pandas, NumPy.
- Machine learning: TensorFlow, PyTorch.
- Web development: Django, Flask.
- Otomasi: Python scripting dan Selenium.

# Kelebihan Python

Multiplatform: Dapat dijalankan di Windows, macOS, Linux, dll.

Banyak Library siap pakai untuk berbagai kebutuhan.

Mudah dipelajari, cocok untuk pemula dan profesional.



# Kekurangan Python

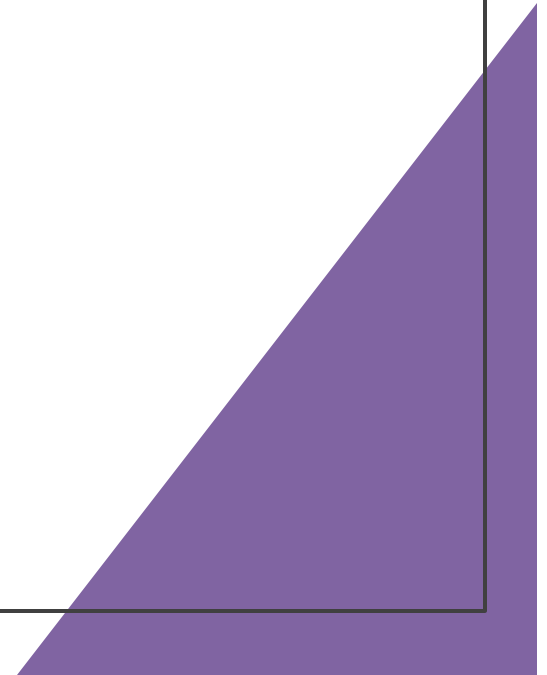
Relatif lebih lambat dibandingkan bahasa compiled seperti C/C++.

Tidak optimal untuk pengembangan aplikasi besar.

Kinerja lebih rendah di lingkungan dengan batasan memori.

# Contoh Kode Python - Dasar

```
print("Hello, Python!")  
for i in range(3):  
    print(f"Nomor: {i}")
```



# Contoh Kode Python - Analisis Data

```
import pandas as pd
```

```
data = {'Nama': ['Ali', 'Budi', 'Citra'], 'Umur': [25, 30, 22]}
```

```
df = pd.DataFrame(data)
```

```
print(df)
```



# Contoh Kode Python - Machine Learning

```
from sklearn.linear_model import LinearRegression  
import numpy as np
```

```
X = np.array([[1], [2], [3]])  
y = np.array([1, 2, 3])
```

```
model = LinearRegression()  
model.fit(X, y)  
print("Koefisien:", model.coef_)
```

# Bagaimana Memulai Python



Unduh dan instal Python dari [python.org](https://python.org).



Gunakan IDE seperti **VSCode**, PyCharm, atau Jupyter Notebook.



Mulai dengan tutorial dasar untuk pemahaman konsep.

# Tips Belajar Python



FOKUS PADA DASAR  
SEPERTI TIPE DATA DAN  
STRUKTUR KONTROL.



EKSPLORASI PUSTAKA  
YANG RELEVAN DENGAN  
BIDANG ANDA.



BERGABUNG DENGAN  
KOMUNITAS PYTHON  
UNTUK BELAJAR BERSAMA.



# Kesimpulan


Python adalah bahasa yang fleksibel dan kuat.

Cocok untuk berbagai aplikasi dari pemula hingga profesional.

Berinvestasi dalam belajar Python adalah langkah yang cerdas.

# Persiapan Sertifikasi

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Course | Instructor-led

Learn fundamental concepts of computer programming and start building coding skill...

Dec 03, 2024 - Dec 20, 2024

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**Python Essentials 1 (PE1) Course Final Exam**

Python Essentials 1

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**PE1: Module 2 Module Exam**

Python Essentials 1

# Halaman Utama Kelas

**Networking Academy** Python Essentials 1

Course Outline Resources

Search course outline

**PE1: Module 1. Introduction to Python and Computer Programming** 5%

**1.0. Welcome to Python Essentials 1** 1 / 4

- 1.0.1 Learn Python - the language of today and tomorrow
- 1.0.2 About the course
- 1.0.3 Syllabus
- 1.0.4 Prepare for the PCEP-30-0x exam

1.1. Section 1 - Introduction to Programming 0 / 7

1.2. Section 2 - Introduction to Python 0 / 9

1.3. Section 3 - Downloading and Installing Python 0 / 5

1.4. Module 1 Completion - Module Test 100 Pts

**PE1: Module 2. Python Data Types, Variables, Operators, and Basic I/O Operations**

**PE1: Module 3. Boolean Values, Conditional Execution, Loops, Lists and List Processing, Logical and Bitwise**

1.0 Welcome to Python Essentials 1

Scroll to begin

**1.0.1 Learn Python - the language of today and tomorrow**

This course is the first in a two-course **Python Essentials** series. It covers everything you need to know to start designing, writing, running, debugging, and improving Python programs at the foundational level. It also fully prepares you for the **PCEP - Certified Entry-**

# Exam Terbuka dan Terkunci

Terbuka

The screenshot displays the 'Python Essentials' course outline on the Cisco Networking Academy platform. It features a search bar and two tabs: 'Course Outline' and 'Resources'. The course outline is divided into three main sections: 'PE1: Module 2. Python Data Types, Variables, Operators, and Basic I/O Operations', 'PE1: Module 3. Boolean Values, Conditional Execution, Loops, Lists and List Processing, Logical and Bitwise Operations', and 'PE1: Module 4. Functions, File I/O, and Error Handling'. The '1.4. Module 1 Completion - Module Test' is highlighted with a green border and labeled 'Terbuka' (Open), showing a score of 0/9 and 100 points. The '2.7. Module 2 Completion - MODULE TEST' is highlighted with a red border and labeled 'Tertutup' (Closed), showing a score of 0/13 and a lock icon. Other sections include '1.2. Section 2 - Introduction to Python' (0/9), '1.3. Section 3 - Downloading and Installing Python' (0/5), '2.1. Section 1 - The "Hello, World!" Program' (0/15), '2.2. Section 2 - Python literals' (0/8), '2.3. Section 3 - Operators - data manipulation tools' (0/5), '2.4. Section 4 - Variables' (0/12), '2.5. Section 5 - Comments' (0/5), and '2.6. Section 6 - Interaction with the user' (0/13).

Networking Academy | Python Essentials

Course Outline | Resources

Search course outline

1.2. Section 2 - Introduction to Python 0 / 9

1.3. Section 3 - Downloading and Installing Python 0 / 5

1.4. Module 1 Completion - Module Test 0 / 9 100 Pts

**PE1: Module 2. Python Data Types, Variables, Operators, and Basic I/O Operations**

2.1. Section 1 - The "Hello, World!" Program 0 / 15

2.2. Section 2 - Python literals 0 / 8

2.3. Section 3 - Operators - data manipulation tools 0 / 5

2.4. Section 4 - Variables 0 / 12

2.5. Section 5 - Comments 0 / 5

2.6. Section 6 - Interaction with the user 0 / 13

2.7. Module 2 Completion - MODULE TEST 0 / 13

**PE1: Module 3. Boolean Values, Conditional Execution, Loops, Lists and List Processing, Logical and Bitwise Operations**

Tertutup

# Type Soal

What is machine code?

- A low-level programming language consisting of binary digits/bits that the computer reads and understands
- A low-level programming language consisting of hexadecimal digits that make up high-level language instructions
- A high-level programming language consisting of instruction lists that humans can read and understand
- A medium-level programming language consisting of the assembly code designed for the computer processor

What is **true** about compilation? (Select **two** answers)

- The code is converted directly into machine code executable by the processor
- It tends to be slower than interpretation
- Both you and the end user must have the compiler to run your code
- It tends to be faster than interpretation

# Exam Wajib Dikerjakan

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Minimal  
mendapatkan nilai  
80

☰  Assessment

☰  PE1: Module 1 Module Exam

☰  PE1: Module 2 Module Exam

☰  PE1: Module 3 Module Exam

☰  PE1: Module 4 Module Exam

☰  Python Essentials 1 (PE1) Course Final Exam

☰  End of Course Survey

**Terima Kasih**

