Introduction to Python

- Abdullah Zayed

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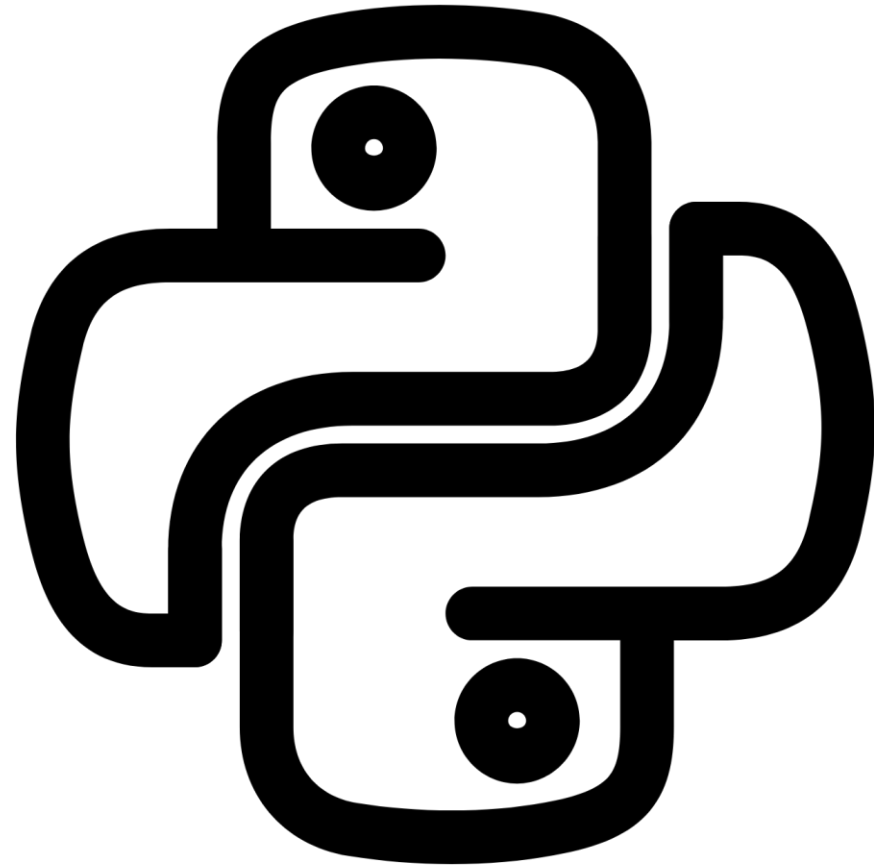
Agenda

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Why Python

How Python Works

How to Run Python

Python Variable

Python Data Type

What is Python?

Python is a high-level Programming Language.

Python is like talking to your computer in simple, friendly language rather than shouting instructions in complicated codes.

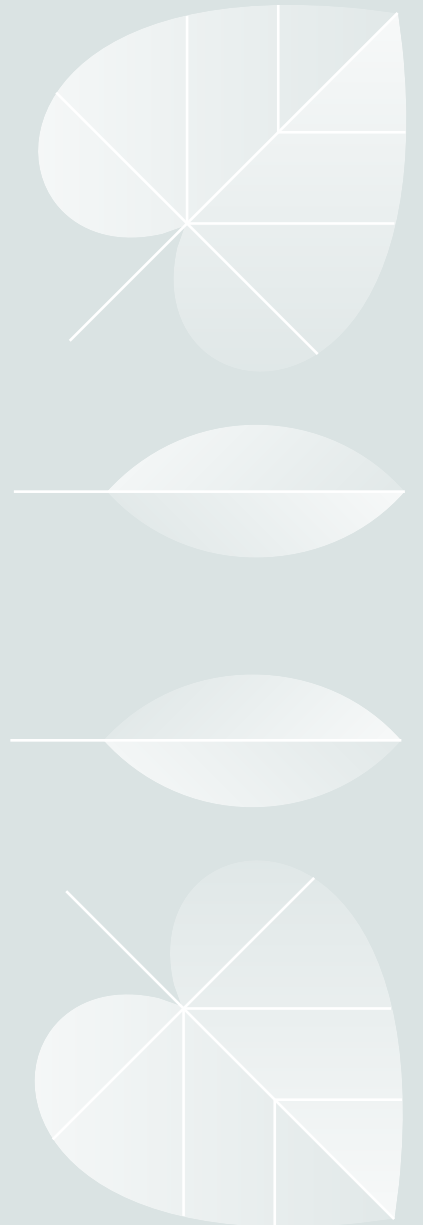# Python Creator

GUIDO VAN ROSSUM

When Python?

- Web Development

- Software Development

- Game Development

- Machine Learning & AI

- Data Science

Why Python?

Most Popular - Python is like a Swiss Army knife—it has tools for every situation!

Easy to Understand - Think of Python as a conversation with your computer, while Java or C is more like legal paperwork.

Why Python?

```java
Java
1 class Main {
2     public static void main(String[] args) {
3         System.out.println("Hello, World!");
4     }
5 }
```

```c
C
1 #include <stdio.h>
2 int main() {
3     printf("Hello, World!");
4     return 0;
5 }
```

```csharp
C#
1 public class Program
2 {
3     public static void Main(string[] args)
4     {
5         System.Console.WriteLine("Hello, World!");
6     }
7 }
```
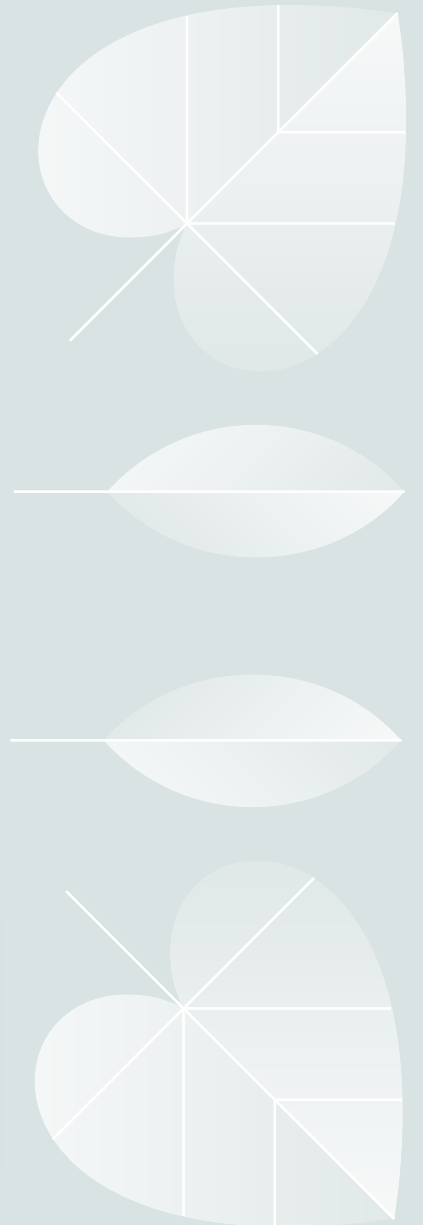
```python
Python
1 print("Hello World!")
```

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Python Versions

- Python 2

- Python 3

Python Software Foundation manages these Versions.
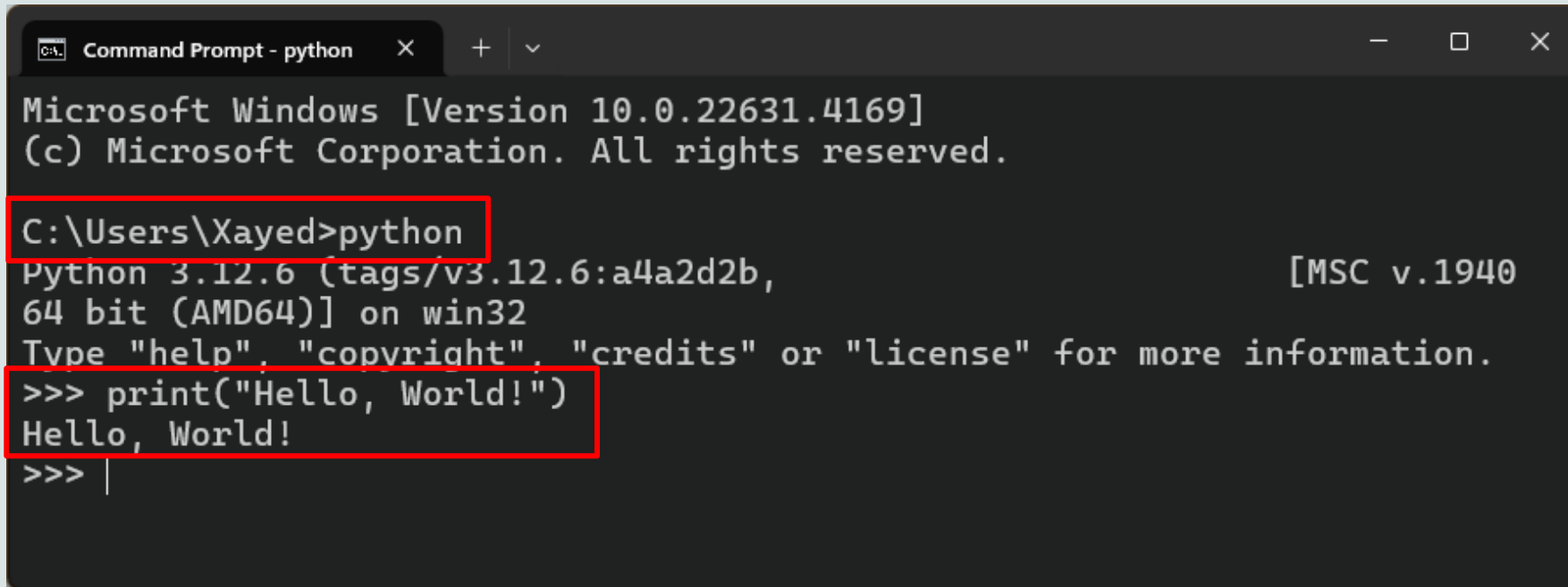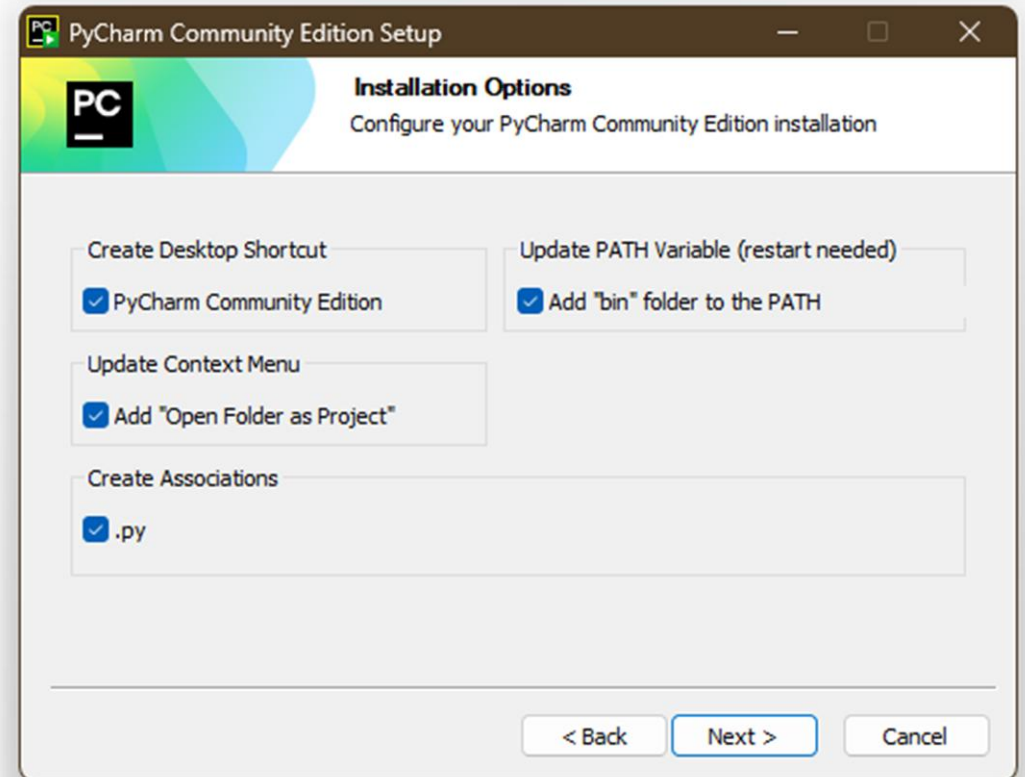
Installing Python

WHAT TO FOCUS ON

Python 3.12.6 (64-bit) Setup

Install Python 3.12.6 (64-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

🛡 **Install Now**
C:\Users\Xayed\AppData\Local\Programs\Python\Python312

Includes IDLE, pip and documentation
Creates shortcuts and file associations

→ **Customize installation**
Choose location and features

☑ Use admin privileges when installing py.exe
☑ Add python.exe to PATH

Cancel

python
for
windows

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Running Python from Terminal

Python's interactive mode lets you write code line by line in the terminal.
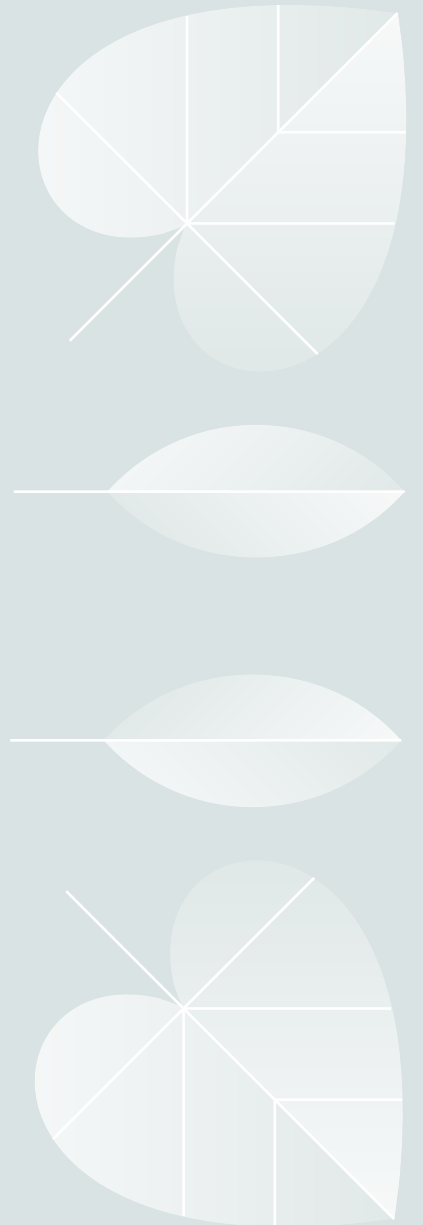
Installing PyCharm for Python

WHAT TO FOCUS ON

PyCharm Community Edition Setup

Installation Options

Configure your PyCharm Community Edition installation

Create Desktop Shortcut

☑ PyCharm Community Edition

Update PATH Variable (restart needed)

☑ Add "bin" folder to the PATH

Update Context Menu

☑ Add "Open Folder as Project"

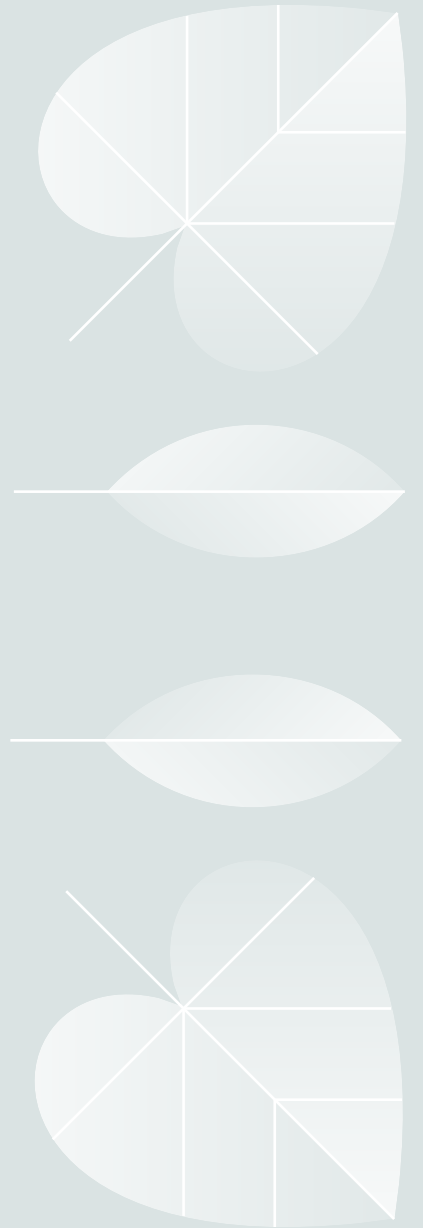Create Associations

☑ .py

< Back   Next >   Cancel

Run Your First Python Code

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NOW, HOW CAN WE RUN OUR CODE?

Python Variable

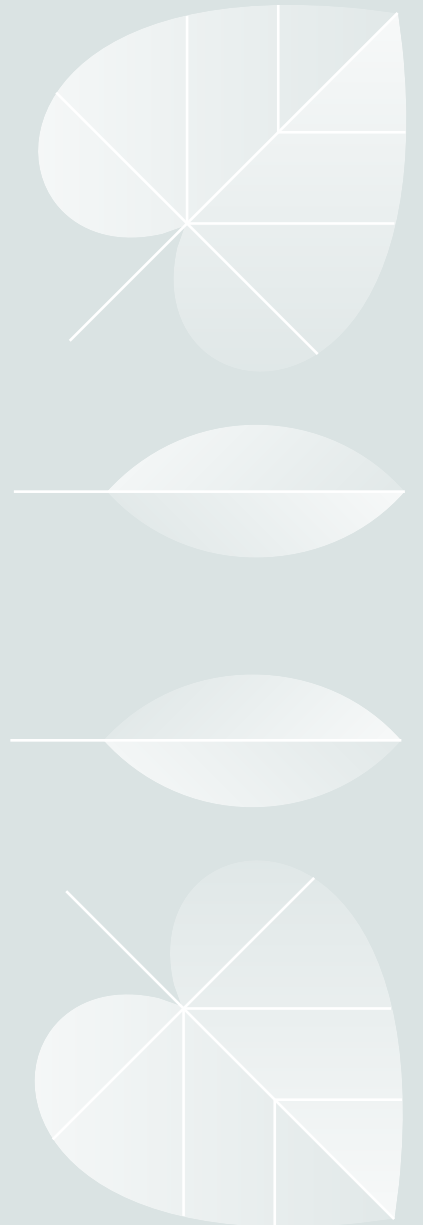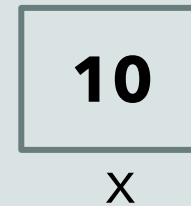The variable is simply a magic box that can contain only one item at a time.

It is like a labeled box where you keep something, and you can change what's inside later.

Python Variable

```
main.py

x = 10
```

10

x

Python Variable

```
main.py

x = 10
y = 20
```

10

x

20

y

Python Variable

```
main.py

x = 10
y = 20
y = 30
```

10
x

30
y

Variable Naming Rules for Python

- Can only contain alpha-numeric characters and underscores.

- Must start with a letter or the underscore character.

- Must not be a reserved keyword.

- Variable names are case-sensitive.

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Python Basic Data Types

- Text Types: **str**

- Numeric Types: **int**, **float**, complex

- Sequence Types: list, tuple, range

- Mapping Type: dict

- Boolean Type: **bool**

Taking Input in Python

ITS TIME TO TAKE INPUT & MAKE THE APP
PERFECT

Type Conversion / Casting in Python

Type Conversion is converting one data type to another.

Two types of type conversion:

- Explicit Conversion (Manual Conversion)

- Implicit Conversion (Automatic Conversion)

Type Conversion / Casting in Python

```
Explicit
1 a = 15
2 print(type(a))
3
4 b = int(a)
5 print(type(b))
```

```
Implicit
1 a = 15
2 print(type(a))
3
4 b = a + 3.14
5 print(type(b))
```

Python is Dynamically Typed Language

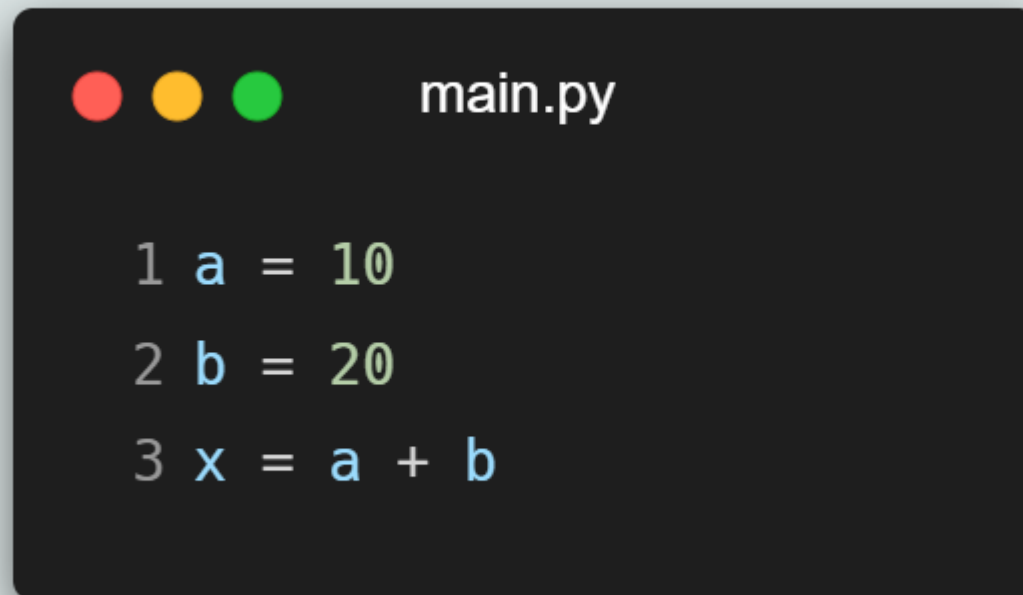Python assigns types automatically on variables based on the value.
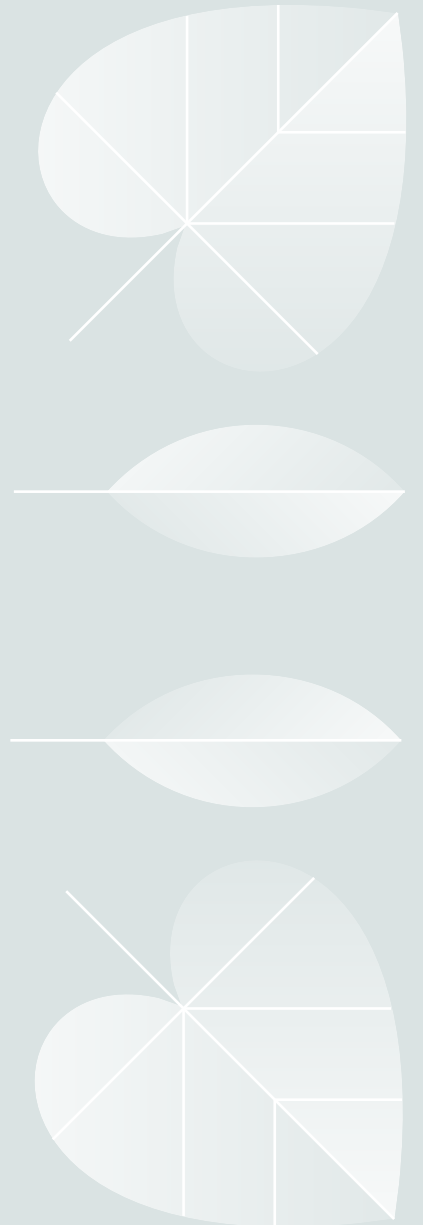
It even replaces the old type.

```
main.py

1 a = 15
2 print(type(a))
3
4 a = "hello"
5 print(type(a))
```

Python Statement

A statement is a line / multiple lines of code giving a single instruction to your computer.
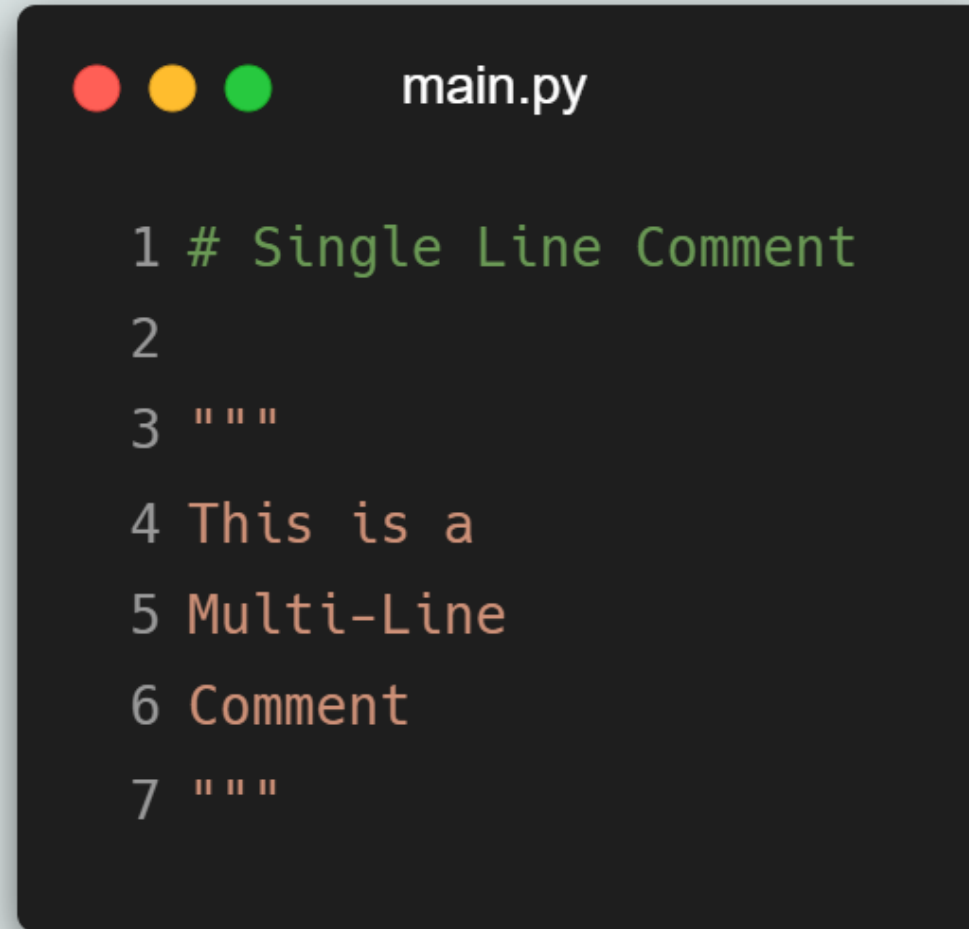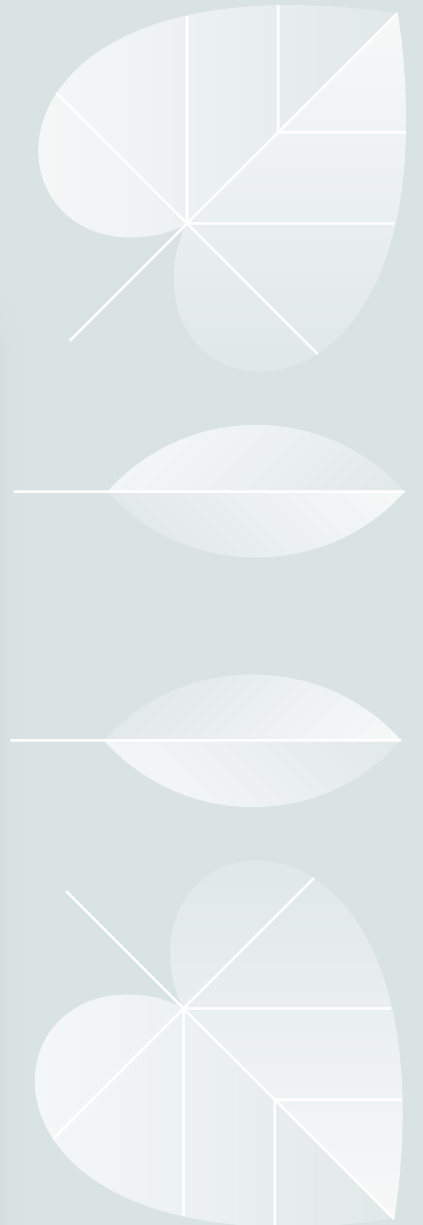
```python
1 a = 10
2 b = 20
3 x = a + b
```

main.py

Python Comment

Two types:

- Single Line Comment

- Multi-Line Comment

Comments are only used to describe a block of code.

```python
main.py
1 # Single Line Comment
2
3 """
4 This is a
5 Multi-Line
6 Comment
7 """
```

Thank you

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