

Introduction to Python

Python is a beginner-friendly programming language that is easy to read and write. It is widely used in web development, data science, automation, and artificial intelligence.

1. Printing Messages

The `print()` function is used to display messages on the screen.

```
print("Hello, world!")
```

2. Variables and Data Types

Variables store information that can be used later.

```
name = "Alice" # String
age = 13       # Integer
height = 1.6   # Float
is_student = True # Boolean
```

3. User Input

The `input()` function allows users to enter information.

```
name = input("What is your name? ")
print("Hello, " + name + "!")
```

4. Basic Operations

Python can perform mathematical operations like addition, subtraction, multiplication, and division.

```
x = 10
y = 3

print(x + y) # Addition
print(x - y) # Subtraction
print(x * y) # Multiplication
print(x / y) # Division
print(x % y) # Modulus (remainder)
```

5. Conditional Statements

The `if` statement allows you to make decisions in your code.

```
age = 13
if age >= 18:
    print("You are an adult.")
else:
    print("You are a minor.")
```

6. Loops

Loops help repeat a block of code multiple times.

a) `for` loop

```
for i in range(5):
    print("Iteration", i)
```

b) `while` loop

```
count = 0
while count < 5:
    print("Count is", count)
    count += 1
```

7. Functions

Functions allow us to reuse code by defining reusable blocks.

```
def greet(name):
    print("Hello, " + name + "!")

greet("Alice")
greet("Bob")
```

These are the basic concepts of Python. As you progress, you will learn about more advanced topics like lists, dictionaries, and object-oriented programming!