Chapter 1: Introduction to Python

1.1 What is Python?

Python is a high-level, interpreted programming language known for its simplicity and readability. It is widely used in web development, data analysis, artificial intelligence, scientific computing, and many other fields.

1.2 History and Evolution of Python

1989: Created by Guido van Rossum and first released as Python 0.9.0.

2000: Python 2.0 was released, introducing new features like list comprehensions and garbage collection.

2008: Python 3.0 was released, which was not fully backward-compatible with Python 2.x.

Python continues to evolve with regular updates and improvements.

1.3 Setting Up the Python Environment

To start coding in Python, you'll need to set up a local environment on your computer. The most common way to do this is by installing Python from python.org.

Steps to Install Python:

1. Download the latest version of Python for your operating system (Windows, Mac OS, Linux).
2. Run the installer and follow the instructions.
3. Make sure to check the option to add Python to your system's PATH during installation.

1.4 Python Syntax and Basic Commands

Let's start with a simple Python script:

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

Key points:

- Python code is interpreted line by line.
- The print function is used to output text to the screen.

- Python uses indentation to define code blocks, instead of braces {}.

1.5 Writing Your First Python Script

Now let's write a Python script that takes input from the user and displays a personalized message:

```
# Take input from the user

name = input("Enter your name: ")


# Display a personalized message

print("Hello, " + name + "! Welcome to Python.")
```

Explanation:

- The input function is used to take input from the user.
- The + operator is used to concatenate strings.
- The print function is used to display the output.