Python Programming - Curriculum

Introduction

This document outlines the Python Programming curriculum, covering core topics and subtopics essential for learning Python.

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Topic 1: Variables and Data Types

Understanding Variables

Variables are containers for storing data values. In Python, you do not need to declare variables before using them.

Data Types in Python

Python supports various data types including int, float, string, list, tuple, and dictionary, each serving different purposes.

Topic 2: Control Structures

Conditional Statements

Conditional statements (if, elif, else) allow you to execute code blocks based on certain conditions.

Loops

Python provides several control structures like for and while loops to execute a block of code repeatedly until a condition is met.

Topic 3: Functions

Defining Functions

Functions are reusable blocks of code that perform a specific task. They are defined using the def keyword.

Lambda Functions

Lambda functions are small, anonymous functions defined with the lambda keyword. They can take any number of arguments but only have one expression.

Topic 4: Object-Oriented Programming

Classes and Objects

Python supports object-oriented programming (OOP). A class is a blueprint for creating objects (instances).

Inheritance

Inheritance allows you to define a class that inherits all the methods and properties from another class.

Topic 5: Modules and Packages

Modules

A module is a file containing Python definitions and statements. The module can be imported into other modules or the main program.

Packages

A package is a way of organizing related modules into a directory hierarchy.