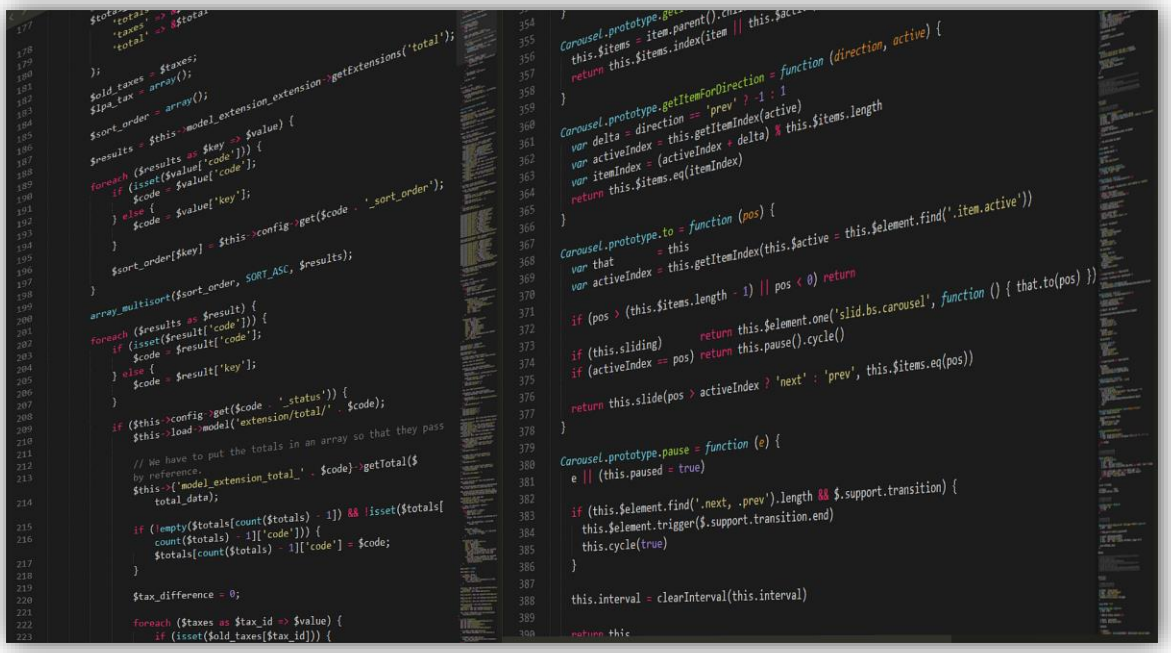

BASIC SYNTAX AND DATA TYPES

OBJECT ORIENTED PROGRAMMING I

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Introduction:

Java is a high-level programming language that is widely used in software development. It was created by James Gosling and his team at Sun Microsystems in the mid-1990s. Java is known for its simplicity, object-oriented features, platform independence, and wide-ranging applications. This chapter is aimed at beginners who want to learn about the basic syntax and data types of Java programming.

Basic Syntax of Java:

Java follows a syntax that is easy to understand and write. Here are some of the basic syntax rules:

- Java programs are written in a text editor and saved with the extension ".java"
- Each Java program must contain at least one class definition
- A class definition is made up of a class name, followed by a pair of curly braces
- The main method is the entry point for a Java program and is defined within the class definition
- Statements in Java end with a semicolon (;)
- White space (spaces, tabs, new lines) is ignored in Java code, but it is used to make the code more readable
- Comments can be added to Java code using the // or /* */ syntax. These comments are ignored by the compiler and are used to document the code for other developers.

Data Types in Java:

In Java, data types specify the kind of data that can be stored in a variable. Java has two categories of data types: primitive and reference types.

PRIMITIVE DATA TYPES:

Primitive data types are the building blocks of Java programs. They are simple and atomic and are not composed of other types. Java has eight primitive data types:

byte: a signed 8-bit integer (-128 to 127)

short: a signed 16-bit integer (-32,768 to 32,767)

int: a signed 32-bit integer (-2,147,483,648 to 2,147,483,647)

long: a signed 64-bit integer (-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807)

float: a single-precision floating-point number

double: a double-precision floating-point number

boolean: a value that can be either true or false

char: a single Unicode character (16-bit)

REFERENCE DATA TYPES:

Reference data types are used to refer to objects. They are composed of other types and can be created using the new keyword. Java has several built-in reference data types, such as:

String: a sequence of characters

Array: a collection of similar data types

Class: a reference to a class

Interface: a reference to an interface

Enum: a special type of class used to define a set of constants

Conclusion:

Java is a powerful programming language that has become a popular choice for software development due to its simplicity, platform independence, and wide-ranging applications. In this chapter, we have covered the basic syntax of Java and the various data types that can be used in Java programs. By understanding these fundamental concepts, you will be able to write simple Java programs and build a strong foundation for further learning.