First notes COM1321.

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Introduction

Object Orientated Programming

A language is said to be object orientated when it aims to implement real-world entities like inheritance, encapsulation, polymorphism etc.

It uses classes and objects to break down codes into chunks to make it easier to read, reuse and edit.

The OOP language we will be using is called JAVA

1.classes and objects.

Class

-a class is a blueprint for creating an object.

It is made up objects which perform similar functions

Syntax for creating a class:

Access_Specifier class class_Name{

//objects

}

Object

-an object is an instance of a class.

It is made up of code that performs a unified purpose.

It has state (data) and behavior(code).

State refers to the properties of an object, this can be variables in the object that contain data that can be added, changed or removed.

Behavior refers to actions that the object can take.

2.java Syntax.

A syntax is a set of rules that we follow when writing a code.

This is an example of a simple java code that prints out “hello world”.

Public:

```
public class helloWorld {
  public static void main(String[] args) {
    System.out.println("Hello World");
  }
}
```

This code consists of a class called helloWorld , a main method and a printing method which prints Hello World.

It uses a pre-coded method called the System.out.println to print data.

3. Java JDK, JRE and JVM

JDK- an abstract machine that enables your computer to run a Java program.

When you write your code, you write it using java syntax, but the computer only knows its native machine code.

That is where the compiler and JDK come in

Compiler- a program that converts java program into a machine-code.

The Java compiler first compiles your Java code to bytecode. Then, the JVM translates bytecode into native machine code.

What is JRE?

is a software package that provides Java class libraries, Java Virtual Machine (JVM), and other components

What is JDK?

is a software development kit required to develop applications in Java.

4.JAVA DATATYPES

1. Boolean type.
2. byte type.
3. short type.
4. int type.
5. long type.
6. double type.
7. float type.
8. Char type.
9. String type

These are the most important ones for this level of study. Although you must know them all.

Char type - stores single characters, such as 'a' or 'B'. Char values are surrounded by single quotes

String type - a string is a sequence of characters. stores text, such as "Hello".

int type - stores integers (whole numbers), without decimals, such as 123 or –123

double type- stores numbers, with decimals, such as 19.99 or -19.99

Examples

Initialize a variable to store a single character.

Char letter= ‘x’;

Initialize a variable to store a word.

String word=”i love coding”;

Initialize a variable to store a non-decimal number;

Int number=5;

Initialize a variable to store a decimal number

Double decimal=3.4;

5.variables

Variable- is a storage container that holds data.

Variables can hold data of a certain data type