**Java Basics**

* Define the scope of variables
* Define the structure of a Java class
* Create executable Java applications with a main method; run a Java program from the command line; produce console output
* Import other Java packages to make them accessible in your code
* Compare and contrast the features and components of Java such as: platform independence, object orientation, encapsulation, etc.

.java (platform independent) 🡪 compile (platform independent) 🡪 bytecode (platform independent) 🡪 jvm 🡪 machine code (platform dependent)

JDK – JRE + development tool

JRE – JVM + library classes

JVM –

Int a = 10 ; a – variable, 10 – literal

**A screenshot of a computer

Description automatically generated**

By default Integral value is int

Decimal - 0 to 9 , int x = 10;

Octal - 0 to 7, must start with 0, int x = 010

Hexadecimal - 0 to 9, a to f - 0X10; Note: case sensitivity does not matter in hexadecimal value

Note: there is no way to assign explicitly a byte type or short type.

Byte b = 100b; - invalid , Short s = 100s; - invalid

To Decimal we can assign each type of value – octal, hexadecimal, decimal.

By default, floating value is double

Note: floating point literal only accept decimal , hexadecimal and octal can’t be assigned to the floating point literals.

In other case, integral literal, octal decimal and hexa can be assigned to integral literals.

Exponential form – it is always double

Double d = 1.2e3;  1.2\*10^3  1.2\*1000 1200.0

Byte 🡪 short 🡪

Int🡪 long🡪 float🡪 double

Char🡪

Int [4] x; - not allowed at the time of declaration we are not allowed to specify the size.

Note: if you want to specify dimension before variable this facility is only available for the first variable

Int [] x = new int [3];

Sop(x); // [[1@hashcode

Int []x;

X = {10,20,30} // invalid – all the decleration should be in single line for shortcut method