

INTRODUCTION NOTES

- Every program begins with a class name, and that class name must match the file name

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

The file name for this must be Main.java

- As a rule, Java uses **camelCase**
- When using 'system' in java, it must always be a **capital S** because Java is **case sensitive**
- **print()** functions do not print on new line, they combine onto a single line
- **println()** functions print onto separate lines
- **\n** prints a blank line (sometimes you need to write **\n\n** due to IDE settings)
- There are 5 main types of variables:
 - **String** – letters and words
 - **Integer** – whole numbers
 - **Float** – Decimal numbers (the value should end in "f")
 - **Boolean** – True or False
 - **Char** – individual characters such as A or B ***SINGLE QUOTES USED***
- You must declare a variable before creating it and assigning a value to it
- More in depth variables:
 - **Byte** – stores whole numbers from -128 to 127 inclusive
 - **Short** – stores whole numbers from -32768 to 32767 inclusive
 - **Long** – stores whole numbers from -9223372036854775808 to 9223372036854775807. The value should end in "L"
 - **Double** – used for fractional numbers with around 16 digits (float is only 6-7 digits). The value should end in "d"
- Type casting is when you assign a value of one data type to another type. There is 2 types:
 - **Widening Casting (automatically)** - converting a smaller type to a larger type size **byte -> short -> char -> int -> long -> float -> double**
 - **Narrowing Casting (manually)** - converting a larger type to a smaller size type **double -> float -> long -> int -> char -> short -> byte**
- The first value in a string is index 0