

```

1 package com.publiccept;
2
3 public class Main {
4
5     public static void main(String[] args) {
6
7         /**
8          * int
9          */
10        // int = width of 32 bits
11        int myValue = 10_000;
12
13        int myMinIntValue = Integer.MIN_VALUE;
14        int myMaxIntValue = Integer.MAX_VALUE;
15        System.out.println("Integer min. Value = " + myMinIntValue); // -2147483648
16        System.out.println("Integer max. Value = " + myMaxIntValue); // 2147483647
17        System.out.println("Busted MAX Value (\\"Overflow\\") = " + (myMaxIntValue + 1)); // -2147483648
18        System.out.println("Busted MIN Value (\\"Underflow\\") = " + (myMinIntValue - 1)); // 2147483647
19
20        int myMaxIntTest = 2_147_483_647; // easy to read with underscore (Java 7+)
21
22
23        /**
24         * byte
25         */
26        // byte = width of 8
27        byte myMinByteValue = Byte.MIN_VALUE;
28        byte myMaxByteValue = Byte.MAX_VALUE;
29        System.out.println("Byte MIN Value = " + myMinByteValue); // -128
30        System.out.println("Byte MAX Value = " + myMaxByteValue); // 127
31
32
33        /**
34         * short
35         */
36        // short = width of 16
37        short myMinShortValue = Short.MIN_VALUE;
38        short myMaxShortValue = Short.MAX_VALUE;
39        System.out.println("Short MIN Value = " + myMinShortValue); // -32768
40        System.out.println("Short MAX Value = " + myMaxShortValue); // 32767
41
42
43        /**
44         * long
45         */
46        // long = width of 64
47        // long myLongValue = 100; // technically wrong
48        long myLongValue = 100L; // Upper-case L at the end needed to tell the computer that it's a long value
49        long myMinLongValue = Long.MIN_VALUE;
50        long myMaxLongValue = Long.MAX_VALUE;
51        System.out.println("Long MIN Value = " + myMinLongValue); // -9_223_372_036_854_775_808
52        System.out.println("Long MAX Value = " + myMaxLongValue); // 9_223_372_036_854_775_807
53
54        // error "Integer number too large", as default number is Integer in Java!
55        // long bigLongLiteralValue = 2_147_483_647_234; // assign int value to long var
56        long bigLongLiteralValue = 2_147_483_647_234L; // assign long with Literal [L]
57
58        System.out.println("Literal big long value = " + bigLongLiteralValue);
59
60
61        /**
62         * Casting
63         */
64        // short bigShortLiteralValue = 32768; // error: "incompatible types: required short, found int"
65        short bigShortLiteralValue = 32767;
66
67        int myTotal = (myMinIntValue / 2);
68
69        // byte myNewByteValue = (myMinByteValue / 2); // error: expressions in parenthesis are treated as int in Java
70        byte myNewByteValue = (byte) (myMinByteValue / 2); // casting of byte within parenthesis
71
72        short myNewShortValue = (short) (myMinShortValue / 2); // casting again
73        // advice always take an integer instead of the real need of another data type
74
75    }
76 }
77

```