

# Chapter 1:

**Compiler:** A program that translates a computer program written in one language into an equivalent program in another language (often from high-level language to machine language).

**Java Class Libraries:** The collection of preexisting Java code that provides solutions to common programming problems

**Binary to decimal:**

Convert 1011010110 to decimal.

$2^{16}$	$2^{15}$	$2^{14}$	$2^{13}$	$2^{12}$	$2^{11}$	$2^{10}$	$2^9$	$2^8$	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$
65536	32768	16384	8192	4096	2048	1024	512	256	128	64	32	16	8	4	2	1
							1	0	1	1	0	1	0	1	1	0

$2 + 4 + 16 + 64 + 128 + 512 = 726$

$0b1011010110 = 726$

**Decimal to binary:**

Convert 867 to binary.

$2^{11}$	$2^{10}$	$2^9$	$2^8$	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$
2048	1024	512	256	128	64	32	16	8	4	2	1
		$867 - 512 = 355$	$355 - 256 = 99$		$99 - 64 = 35$	$35 - 32 = 3$				$3 - 2 = 1$	$1 - 1 = 0$
		1	1	0	1	1	0	0	0	1	1

$867 = 0b1101100011$

**Escape Sequences:**

<code>\t</code>	tab
<code>\n</code>	new line
<code>\"</code>	quotation
<code>\\</code>	backslash

**Class naming convention:** start with a capital letter. When you are putting several words together capitalize the first letter of each word.

**Method naming convention:** start with a lowercase letter. When you are putting several words together capitalize the first letter of each word after the first.

**Compile-Time Errors:** Errors that occur when you violate the rules of writing syntax are known as Compile-Time errors. This compiler error indicates something that must be fixed before the code can be compiled.

**Run-Time Errors:** Errors which occur during program execution(run-time) after successful compilation are called run-time errors. One of the most common run-time errors is division by zero.

**Static Method:** A block of Java statements that is given a name.