Primitive Type	What It Stores	Range
`byte`	8-bit integer	–128 to 127
`short`	16-bit integer	–32,768 to 32,767
`int`	32-bit integer	–2,147,483,648 to 2,147,483,647
`long`	64-bit integer	-2^{63} to $2^{63}-1$
`float`	32-bit floating-point	6 significant digits, (10^{-46}, 10^{38})
`double`	64-bit floating-point	15 significant digits, (10^{-324}, 10^{308})
`char`	Unicode character	
`boolean`	Boolean variable	`false` and `true`

Figure 1.2 The eight primitive types in Java

1.3.2 Constants

Integer constants can be represented in either *decimal*, *octal*, or *hexadecimal* notation.

Integer constants can be represented in either decimal, octal, or hexadecimal notation. Octal notation is indicated by a leading `0`; hexadecimal is indicated by a leading `0x` or `0X`. The following are all equivalent ways of representing the integer 37: `37`, `045`, `0x25`. Octal and hexadecimal integers are not used in this text. However, we must be aware of them so that we use leading `0`s only when we intend to.

A string constant consists of a sequence of characters enclosed by double quotes.

A *character constant* is enclosed with a pair of single quotation marks, as in `'a'`. Internally, this character sequence is interpreted as a small number. The output routines later interpret that small number as the corresponding character. A *string constant* consists of a sequence of characters enclosed within double quotation marks, as in `"Hello"`. There are some special sequences, known as *escape sequences*, that are used (for instance, how does one represent a single quotation mark?). In this text we use `'\n'`, `'\\'`, `'\''`, and `'\"'`, which mean, respectively, the newline character, backslash character, single quotation mark, and double quotation mark.

Escape sequences are used to represent certain character constants.

1.3.3 Declaration and Initialization of Primitive Types

A variable is named by using an *identifier*.

Any variable, including those of a primitive type, is declared by providing its name, its type, and optionally, its initial value. The name must be an *identifier*. An identifier may consist of any combination of letters, digits, and the underscore