Figure 6.0 Variables of primitive type.

The primitive types you need to know are:

- **int** (ignore **byte**, **short**, **long** for now)
- **double** (ignore **float** for now)
- **char**
- **boolean**

Numbers should be declared **double** if they have a fractional part;
int if they do not:

```
int i = 7;
double x = 4.567;
```

Characters are declared **char**; each **char** represents a single character:

```
char c = 'h';
```

Strings are made up of single characters (recall the **String** type is **not** primitive):

```
char c = "hello".charAt(4);      // assigns 'o' to c
```

Characters are delineated by single quotes, strings by double quotes.

Characters are ordered:

1. 'A' …'Z', 'a' …'z', '0' …'9' are contiguous
2. ' ' (blank) comes "before" all printable characters

which allows us to do things like

```
char c = (char) ('h' + 2);      // assigns 'j' to c
                                // an example of a cast
```

Booleans represent "truth values"—**true** or **false**—usually they appear in expressions like:

```
number < 0                   // true if number is less than 0
number < 0 && sum < 100      // true if number is less than 0 and sum is less than 100
number < 0 || sum < 100      // true if number is less than 0 or sum is less than 100
```

Booleans are seldom explicity declared; instead they are used inside a statement (we'll see how soon).