Special Topic 5.4

Lazy Evaluation of Boolean Operators

The `&&` and `||` operators in Java are computed using *lazy* (or *short circuit*) evaluation. In other words, logical expressions are evaluated from left to right, and evaluation stops as soon as the truth value is determined. When an *and* is evaluated and the first condition is false, then the second condition is skipped—no matter what it is, the combined condition must be false. When an *or* is evaluated and the first condition is true, the second condition is not evaluated, because it does not matter what the outcome of the second test is. Here is an example:

```
if (input != null && Integer.parseInt(input) > 0) . . .
```

If `input` is `null`, then the first condition is false, and thus the combined statement is false, no matter what the outcome of the second test. The second test is never evaluated if `input` is `null`, and there is no danger of parsing a `null` string (which would cause an exception).

If you do need to evaluate both conditions, then use the `&` and `|` operators (see Appendix B). When used with Boolean arguments, these operators always evaluate both arguments.