there are no Dumb Questions

Q: I noticed there is a cancel button on the prompt dialog box. What gets returned from the prompt function if the user hits cancel?

A: If you click cancel in the prompt dialog box then prompt returns the value null rather than a string. Remember that null means "no value", which is appropriate in this case because you've cancelled without entering a value. We can use the fact that the value returned from prompt is null to check to see if the user clicked cancel, and if they did, then we could, say, end the game. We're not doing that in our code, but keep this idea in the back of your mind as we might use it later in the book.

Q: You said that prompt always returns a string. So how can we compare a string value, like "0" or "6", to numbers, like 0 and 6?

A: In this situation, JavaScript tries to convert the string in guess to a number in order to do the comparisons, guess < 0 and guess > 6. As long as you enter only a number, like 4, JavaScript knows how to convert the string "4" to the number 4 when it needs to. We'll come back to the topic of type conversion in more detail later.

Q: What happens if the user enters something that isn't a number into the prompt? Like "six" or "quit"?

A: In that case, JavaScript won't be able to convert the string to a number for the comparison. So, you'd be comparing "six" to 6 or "quit" to 6, and that kind of comparison will return false, which will lead to a MISS. In a more robust version of battleship, we'll check the user input more carefully and make sure they've entered a number first.

Q: With the OR operator, is it true if only one or the other is true, or can both be true?

A: Yes, both can be true. The result of the OR operator (||) is true if either of the tests is true, or if both are true. If both are false, then the result is false.

Q: Is there an AND operator?

A: Yes! The AND operator (&&) works similarly to OR, except that the result of AND is true only if both tests are true.

Q: What's an infinite loop?

A: Great question. An infinite loop is one of the many problems that plague programmers. Remember that a loop requires a conditional test, and the loop will continue as long as that conditional test is true. If your code never does anything to change things so that the conditional test is false at some point, the loop will continue forever. And ever. Until you kill your browser or reboot.

Two-minute Guide to Boolean Operators

A boolean operator is used in a boolean expression, which results in a true or false value. There are two kinds of boolean operators: comparison operators and logical operators.

Comparison Operators

Comparison operators compare two values. Here are some common comparison operators:

- `<` means "less than"
- `>` means "greater than"
- `==` means "equal to"
- `===` means "exactly equal to" (we'll come back to this one later!)
- `<=` means "less than or equal to"
- `>=` means "greater than or equal to"
- `!=` means "not equal to"

Logical Operators

Logical operators combine two boolean expressions to create one boolean result (true or false). Here are two logical operators:

- `||` means OR. Results in true if *either* of the two expressions is true.
- `&&` means AND. Results in true if *both* of the two expressions are true.

Another logical operator is NOT, which acts on one boolean expression (rather than two):

- `!` means NOT. Results in true if the expression is false.