

Model 1 Relational Operators

In the meta activity, you determined the top three attributes by comparing percentages. We can declare variables to represent these percentages in Java:

```
double written = 82.0;    // Communication skills (written)
double problem = 80.9;    // Problem-solving skills
double teamwork = 78.7;   // Ability to work in a team
```

In the table below, determine the result of each expression and identify the operator. The first five rows are completed for you. (Optional: Use *JShell* to check your work.)

Expression	Result	Operator
written	82.0	none
written > problem	true	>
problem < teamwork	false	<
teamwork = 79.5	79.5	=
teamwork == 78.7	false	==
82.0 < written	false	<
82.0 > written	false	>
82.0 == written	true	==
problem == written	false	==
teamwork == problem	false	==
teamwork = problem	80.9	=
teamwork == problem	true	==
teamwork	80.9	none

Questions (15 min)

Start time:

1. A *relational operator* compares two values; the result is either **true** or **false**. Identify the three relational operators used in the table above.

> < ==

2. Explain why the same expression `teamwork == problem` resulted with two different values in the table.

The line `teamwork = problem` assigned the value of `problem` to `teamwork`, making the two variables equal. They started out not being equal, but they ended up with the same value.

3. What is the difference between = and == in Java?

The = operator assigns a value to a variable, and the == operator compares two values.

4. The != relational operator means “not equals”. Give an example of a boolean expression that uses != and evaluates to false.

5 != 5 is false (because they *are* equal)

5. The >= relational operator means “greater than or equal to”. Give an example of a boolean expression that uses >= and evaluates to true.

5 >= 5 is true (because they *are* equal)

6. Java has six relational operators. Only five have been shown, but you should be able to guess the sixth. List all six below, and explain briefly what each one means.

< is less than	> is greater than	== is equal to
<= is less than or equal to	>= is greater than or equal to	!= is not equal to