

# Boolean Data Type and Expressions

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# Objectives

- To declare **boolean** variables and write Boolean expressions using relational operators (§3.2).

# Outline

- boolean data type
- boolean operators and expressions

# boolean

- We often need to compare two values
  - Recall the exercise that computes GPA, what if we enter a letter grade?
    - `boolean isA = (grade == 'A')`
  - Does the student qualify for a scholarship?
    - `boolean isQualified = (gpa >= 3.0)`
  - The result of the comparison is one of the two values
    - `true`, `false`

# Relational Operators

- Java provides 6 relationship operators to compare two values

Java Operator	Mathematics Symbol	Name	Example (radius is 5)	Result
<	<	less than	<code>radius &lt; 0</code>	<code>false</code>
<=	≤	less than or equal to	<code>radius &lt;= 0</code>	<code>false</code>
>	>	greater than	<code>radius &gt; 0</code>	<code>true</code>
>=	≥	greater than or equal to	<code>radius &gt;= 0</code>	<code>true</code>
==	=	equal to	<code>radius == 0</code>	<code>false</code>
!=	≠	not equal to	<code>radius != 0</code>	<code>true</code>

Let's try them out ...

# Questions?