

# Short Circuit Logic (SCL)

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## Link to Ed Lesson

A link to the lesson can be found [here](#).

## What is Short Circuit Logic?

- Combining TWO or MORE **conditions** together.
- Execution of **consecutive conditions** depends on the **logical operator** (&&, ||, ! for eg) and **boolean value** of the FIRST condition.

## Logical Operators

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### What are logical operators?

- *Logical operators* compare boolean conditions and **returns values TRUE or FALSE**.
- The most common *Logical operators* in programming languages are:
  - && (AND) - Both conditions must evaluate to **TRUE**
  - || (OR) - One condition must evaluate to **TRUE**
  - ! (NOT) - Returns the opposite value

## Truth Table

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### && logical operator variations (AND)

Only when **BOTH CONDITIONS** are **true** will the return be true. All other && combinations will return false.

1. true && true

=> true

2. true && false

=> false

3. false && true

=> false

4. false && false

=> false

### || logical operator variations (OR)

Only **ONE CONDITION** needs to be **true** in order to return a **value of true**.

1. true || true

=> true

2. true || false

=> true

3. false || true

=> true

4. false || false

=> false

## ! logical operator variations (NOT)

The !(NOT) operator will always return the opposite of the value it refers to.

1. !true

=> false

2. !false

=> true