

Module 14: Logical Operators

*Intro to Computer Science 1 - C++
Professor Scott Frees*

Textbook

The following topic is covered in section 3.10 of the text

Logical Operators

<boolean expression> && <boolean expression> -> boolean value

<boolean expression> || <boolean expression> -> boolean value

! <boolean expression> -> boolean value

Truth tables

AND	A	B	<u>A && B</u>
	TRUE	TRUE	TRUE
	TRUE	FALSE	FALSE
	FALSE	TRUE	FALSE
	FALSE	FALSE	FALSE

OR	A	B	<u>A B</u>
	TRUE	TRUE	TRUE
	TRUE	FALSE	TRUE
	FALSE	TRUE	TRUE
	FALSE	FALSE	FALSE

NOT	A	<u>!A</u>
	TRUE	FALSE
	FALSE	TRUE

Programming Example 14

- In order to qualify for a particular loan, lets assume you must earn over \$60K a year **or** earn over \$35K **and** have worked at your current job for over 5 years.
 - Write program that asks for user's salary and years at current job.
 - Output whether or not they qualify.

Operator Precedence

Parenthesis

!, - (negation)

*, / , %

+, -

<, <=, >=, >

==, !=

&&

||

=

Highest Precedence



Lowest Precedence

Practice Problems

Case Study problems 3.11 and 3.12 are particularly useful for studying purposes!

Problems 3.21-3.31 (Page 93-94) are also valuable

Lab 05

A shipping company determines how much it charges its customers based on weight of the package and distance shipped.

Prices are determined by the following table

Weight of Package (kg)	Rate per 500 miles
2 kg and under	\$1.10
Over 2 kg but not more than 6kg	\$2.20
Over 6 kg but not more than 10kg	\$3.70
Over 10 kg but not more than 20kg	\$4.80

Allow a user to enter the weight and distance, compute price.