Manipulation of Data Part 3

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Expression

A valid sequence of operand(s) and operator(s) that reduces (or _evaluates_) to a single value.

Operator

A language-specific syntactical token (usually a symbol) that causes an action to be taken on one or more operands.

Operand

A value that receives the operator's action.

Precedence

Determines the order in which the operators are allowed to manipulate the operands. Higher precedence goes first.

Associativity

Determines the order in which the operators of the same precedence are allowed to manipulate the operands.

Statement

Within "C++" a line of code ending in a semicolon.

Consider the Statement

answer = 2 < 3 && 4 >= 5;

Mark the Operator(s)
(using an exclamation point or line)

answer = 2 < 3 && 4 >= 5;
!   !   !   !

Identify the Precedence
(using numbers with 1 being highest)

answer = 2 < 3 && 4 >= 5;
       !   !   !   !
       3   1   2   1

Identify Associativity
(using letters with 'a' being first)

answer = 2 < 3 && 4 >= 5;

     !   !   !   !

    3   1a   2   1b

Evaluation

The process of letting the operator(s) do their action to the operand(s).

Evaluation – Step 1
(this changes to the next slide)

answer = 2 < 3 && 4 >= 5;

    !   !   !   !

    3   1a   2   1b

Evaluation – Step 2
(this changes to the next slide)

answer = 1 && 4 >= 5;

   !   !   !

   3   2   1b

Evaluation – Step 3
(this changes to the next slide)

answer = 1 && 0;

      !   !

      3   2

Evaluation – Step 4
(this changes to the next slide)

answer = 0;
!
3

Evaluation – Done
(the variable answer is assigned the value of '0' meaning false)

answer = 0;

The End