



Computer Science Virtual Learning

PLTW Computer Science Principles

May 5, 2020

Lesson: May 5, 2020

Using If Statements in Microsoft MakeCode: Option for The Create Performance Task

Learning Target:

Develop an algorithm for implementation in a program. Sequencing, selection, selection, and iteration are building blocks of algorithms.

Selection uses a Boolean Condition to determine which of the the two parts of an algorithm is used.

Every algorithm can be constructed using only sequencing, structuring, and iteration.

Introduction

Watch This Video, Reviewing the Concept of Boolean Expressions:



Practice: Flowcharts

In everyday conversation, it is common to interchange the words “when” and “if,” as in “If the user presses the button, execute this function.” The English language is tricky. We often say “if” the button is clicked when really we mean “when” a button is clicked. This can cause confusion because “if” has a well-defined meaning in programming. How are conditionals (if statements) different from events?

Here is one way to think about it:

- Events are setup by a programmer, but triggered by the computer at any moment in time.
- If statements are a way a programmer can have her code make a decision during the normal flow of execution to do one thing or another.

Practice: Flowcharts

An if statement is evaluated when the code reaches a particular line and uses a true/false condition (like a comparison between values e.g., `score == 5`), to decide whether to execute a block of code.

Transition

- As we begin to write event-driven programs with if-statements we need to be clear about what we mean, or what we intend our programs to do.
- Sometimes when you say "if" you mean "when" and vice-versa. Just be on the lookout.
- Click [here](#) and make a copy of the flow chart activity.
- Work through the activity and create a flow chart for the 5 conditional statements.

Practice: Makecode

Watch This Video over using if-statements in Microsoft MakeCode, which is an optional program that you can use for the Create Performance Task. You can easily link to the Makecode Arcade [here](#).



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Practice: Reflection

Open a page in the Computer science Notebook, and revisit your reflection from the previous day.

What did you find useful about Microsoft Makecode?

Is this an application that you could use for your Create Performance Task? Why or Why not? Do you feel differently than you did yesterday?