Computer Science Virtual Learning

HS Computer Science A

April 13th, 2020

Lesson: <mark>What is a Variable?</mark>

Objective/Learning Target:

Understanding what a Variable is and the differences between the types of variables

Bell Ringer Activity

Watch the following video: Click Here

What is a Variable?

A **variable** is a name associated with a memory location in the computer. Computer memory can store a value and that value can change or vary. When you play a game, it will often have a score. Scores often start at 0 and increase. A score is a variable.
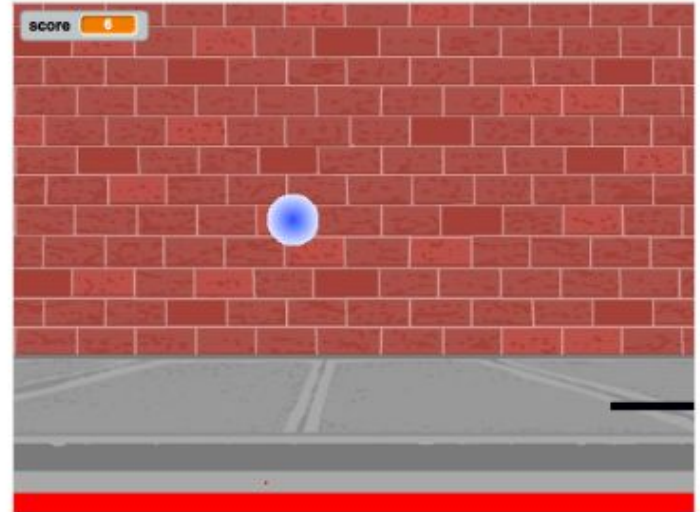

Figure 1: A pong game in Scratch with a score shown in the upper left.

Variable Types

There are two types of variables in Java: **primitive variables that hold primitive types** and **object variables that hold a reference to an object of a class**.

A reference is a way to find the object (like a UPS tracking number helps you find your package). The primitive types are:

- int - which store integers (whole numbers like 3, -76, 20393)
- double - which store floating point numbers (decimal numbers like 6.3 -0.9, and 60293.93032)
- boolean - which store Boolean values (either true or false).
- `String` is one of the object types on the exam and is the name of a class in Java. A string object has a sequence of characters enclosed in a pair of double quotes - like "Hello". You will learn more about String objects in another chapter.

Check Your Understanding

Answer the following questions to check your understanding of the material in the previous slides

1. What type should you use to represent the average grade for a course?
   a. Int
   b. Double
   c. Boolean
   d. String
2. What type should you use to represent the number of people in a household?
   a. Int
   b. Double
   c. Boolean
   d. String

3. What type should you use to hold the first name of a person?
   a. Int
   b. Double
   c. Boolean
   d. String

4. What type should you use to record if it is raining or not?
   a. Int
   b. Double
   c. Boolean
   d. String

For More Resources and to Check Answers

Go to: https://runestone.academy/runestone/books/published/apcsareview/VariableBasics/vIntro.html