



Computer Science Virtual Learning

HS Computer Science A

April 15th, 2020



Lesson: Changing and Naming Variables In Java

Objective/Learning Target:

Understanding how and why we change variables in Java
Understanding how and why we name variables in Java

Changing a Variable

Remember that a variable holds a value and that value can change or vary. If you use a variable to keep score you would probably increment it (add one to the current value). You can do this by setting the variable to the current value of the variable plus one ($\text{score} = \text{score} + 1$) as shown

A screenshot of a code editor with a yellow background. At the top right, there are two buttons: a green "Run" button and a dark grey "Load History" button. The code is as follows:

```
1 public class Test1
2 {
3     public static void main(String[] args)
4     {
5         int score = 0;
6         System.out.println(score);
7         score = score + 1;
8         System.out.println(score);
9     }
10 }
11
```

At the bottom right of the editor, the text "Activity: 1 -- ActiveCode (lccv1)" is displayed.

Practice Changing Variables

What are the values of x, y, and z after the following code executes?

```
int x = 0;
int y = 1;
int z = 2;
x = y;
y = y * 2;
z = 3;
```

Annotate High

- A. x=0, y=1, z=2
- B. x=1, y=2, z=3
- C. x=2, y=2, z=3
- D. x=0, y=0, z=3



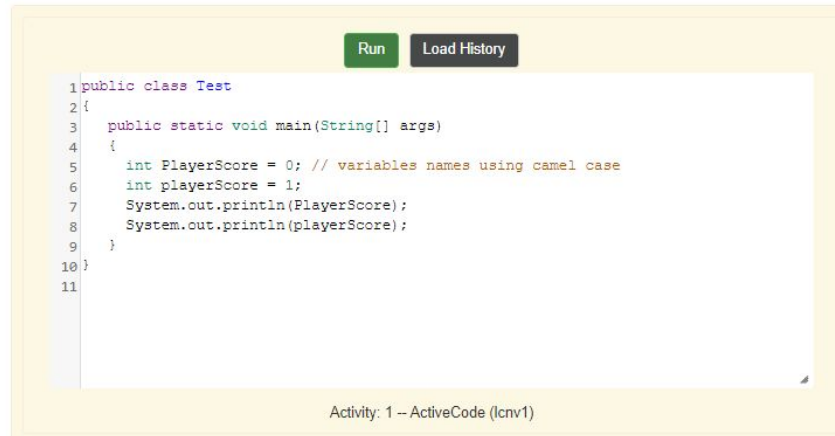
Naming a Variable

While you can name your variable almost anything, there are some rules. A variable name should start with an alphabetic character (like a, b, c, etc). You can't use any of the keywords or reserved words as variable names in Java (`for`, `if`, `class`, `static`, `int`, `double`, etc). For a complete list of keywords and reserved words see http://docs.oracle.com/javase/tutorial/java/nutsandbolts/_keywords.html.

The name of the variable should match both the function of the variable and the type of the variable. A name like `score` helps make your code easier to read. Do not try to be cute on the exam and name your variables crazy things like `thisIsAreallyLongName`. This makes the code very hard to understand. The free response questions are graded by readers (high school AP CS A teachers and college faculty). You want to make the readers' job easier, not harder!

Naming a Variable

The convention in Java is to always start a variable name with a lower case letter and then uppercase the first letter of each additional word. Variable names can not include spaces so uppercasing the first letter of each additional word makes it easier to read the name. Uppercasing the first letter of each additional word is called **camel case**. Java is case sensitive so `playerScore` and `playerscore` are not the same.

A screenshot of a Java IDE window titled "Activity: 1 -- ActiveCode (lcnv1)". The window contains a code editor with the following Java code:

```
1 public class Test
2 {
3     public static void main(String[] args)
4     {
5         int PlayerScore = 0; // variables names using camel case
6         int playerScore = 1;
7         System.out.println(PlayerScore);
8         System.out.println(playerScore);
9     }
10 }
11
```

At the top of the editor, there are two buttons: "Run" (green) and "Load History" (dark grey). The code uses camel case for variable names: "PlayerScore" and "playerScore".



Check Your Understanding

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

1. What is the camel case variable name for a variable that represents a shoe size?
2. What is the camel case variable name for a variable that represents the top score?
3. What is the camel case variable name for a variable that represents the last score?



For More Resources and to Check Answers

Go to: <https://runestone.academy/runestone/books/published/apcsareview/VariableBasics/changeVars.html>

<https://runestone.academy/runestone/books/published/apcsareview/VariableBasics/nameVars.html>