

ADVANCED EV3 PROGRAMMING LESSON



Menu System

By Sanjay and Arvind Seshan



Lesson Objectives

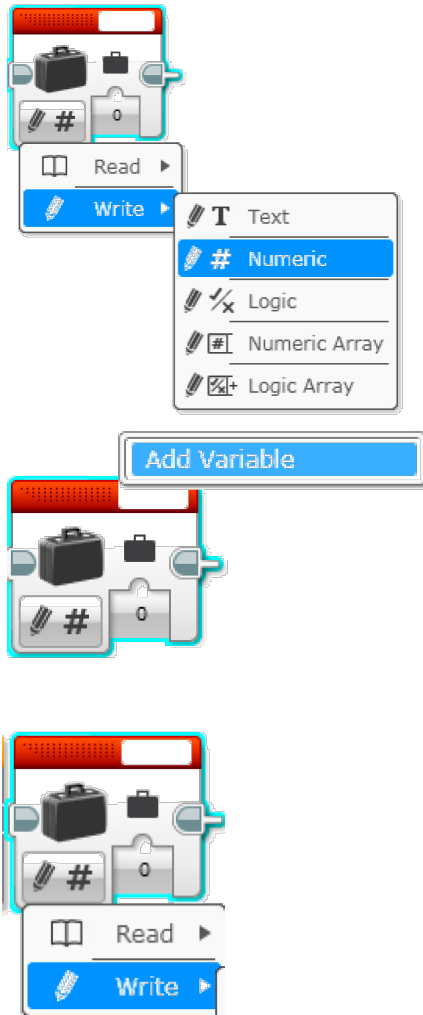
- Learn to use variables
- Learn to create a menu system that is not limited to a particular number of choices
- Learn to create a menu system that updates the menu view
- Prerequisites: Variables, Math Blocks, Brick Buttons

A Fancier Menu System

- In the “Using Brick Buttons as Sensors” Lesson in Intermediate, one of the challenges asked you to create a menu with 4 choices and a single screen display for the entire menu
- In this version, we build a menu system that updates the menu view each time you change your selection and lets you have a larger number of menu choices
- To make this menu, you will need to learn how to use variables



Review: Variables Lessons



A. Variables can store values for later use

B. There are different types of variables. You must choose the type of variable before creating one.

C. You must create a variable and give it a name before using it.

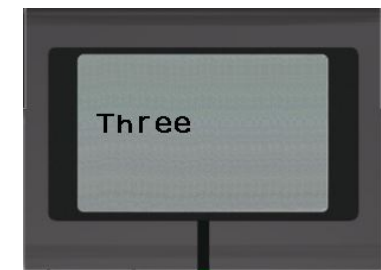
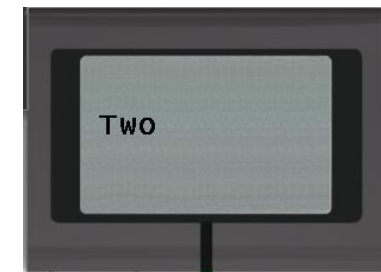
D. Once created, you can read and write values to the variable.

In this lesson, we use numeric variables.

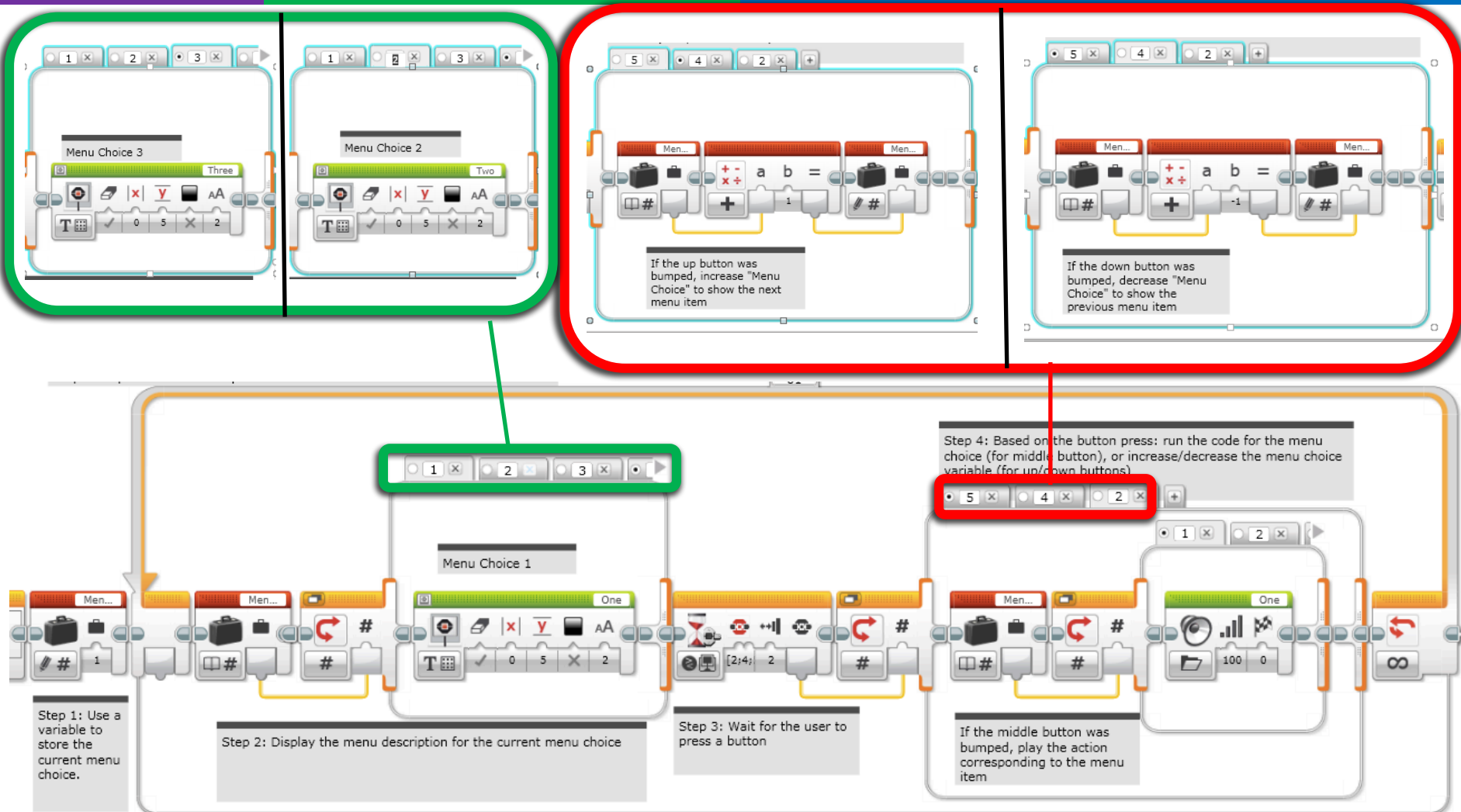
Menu Challenge

- **Challenge:** Make a menu system that lets you perform 3 actions (display and say the numbers 1, 2, and 3) based on the button pressed
- **Step 1:** Use a variable to store the current menu choice
- **Step 2:** Display the menu description for the current menu choice
- **Step 3:** Wait for the user to press a button (top, middle, down buttons)
- **Step 4:** Based on the button press: run the code for the menu choice (for middle button), or increase/decrease the menu choice variable (for up/down buttons)
- **Step 5:** Go back to 2...

What you will see on the EV3 Brick



Challenge Solution



Next Steps

- The ideas in this lesson can be adapted to help you build a mission sequencer for FLL. Sequencers are useful because they:
 - Allow you to skip missions if you are short of time
 - Allow you to repeat failed missions
 - Allow you access missions quickly (find them easily)
- If your Menu Action code is long (not just a display and sound), consider creating My Blocks out of your code

Credits

- This tutorial was created by Sanjay Seshan and Arvind Seshan
- More lessons at www.ev3lessons.com



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