

Program Descriptions

Elephant



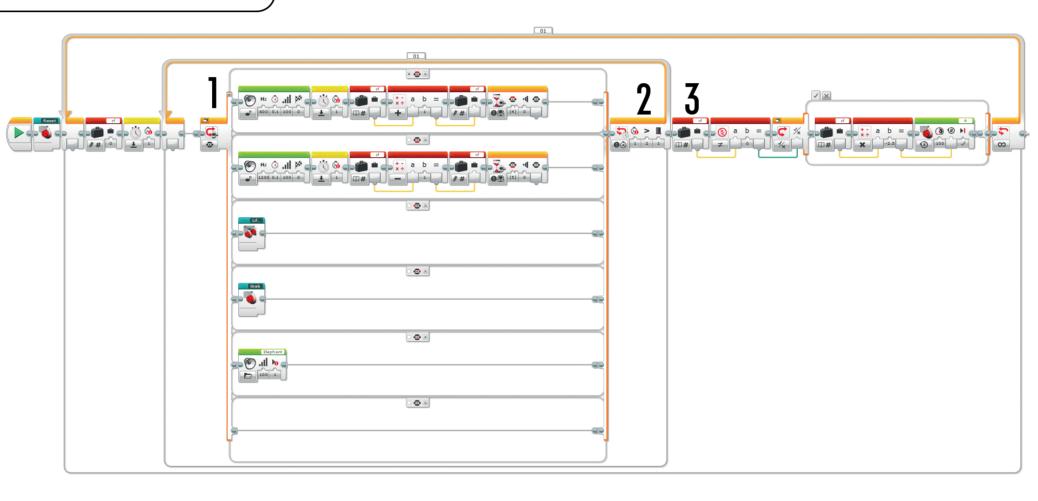
Overview

The Elephant Program allows control of the robot through the EV3 buttons. By pressing the up or down buttons, the robot will walk forward or backward, and the left or right buttons give the command to pick up an object or lift the trunk. The center button makes the robot play the elephant sound.

A Switch Block in Button mode allows the program to have multiple choices in behavior. Here, all possible button presses are used to allow the user to give the robot input.

When the up button is pressed, a sound is played for acknowledgement, the timer is reset affecting the loop, and 1 is added to the Variable cf. This is known as incrementing. Finally, in order to continue and not repeat the command, there is a wait for release of the button. The down button press is similar, except that 1 is taken away from the Variable cf. Here it is known as decrementing.

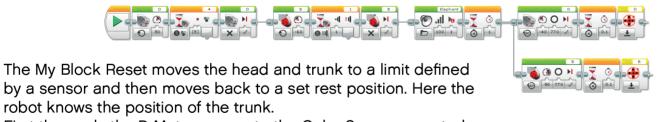
The left button plays the My Block Lift and Roar and the right button plays the My Block Grab. Lastly, the center button plays a Sound Block. When nothing is pressed, the robot is waiting at rest for the next command.



The inner loop ends when the timer has passed 1 second. Since the timer is reset after the up or down buttons are pressed, a buffer is created to allow the buttons to be pressed continuously.

Here the Variable cf is checked with a Compare Block if it is not zero. If not, the variable is multiplied by -2.5, which relates to the number of rotations needed for a step and wired to the number of rotations of the A Motor. This gives the robot the ability to take the number of steps as input by the user.

Reset



by a sensor and then moves back to a set rest position. Here the robot knows the position of the trunk. First the neck, the D Motor, moves to the Color Sensor mounted

at the top of the shoulder. Then the trunk, the B Motor, moves to a Touch Sensor limit at the bridge of the nose.

The elephant then makes a sound and both motors are moved to their resting position and reset to zero with the Sensor Block.

Lift and Roar



The Lift and Roar My Block gives some life to the robot. The trunk of the robot moves first, and then plays the Reset My Block.

Grab

