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The Robot Program Episode 022: Detect Face and Wave - EZ-Script

This lesson will demonstrate how to use EZ-Script to have the robot wave once it detects a face. At the end of this lesson, readers will be able to enable facial detection and code a basic script using EZ-Script. Follow along with The Robot Program Episode 022: Detect Face and Wave - EZ-Script. View the video episode here: https://www.ez-robot.com/Tutorials/Lesson/102

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Professor E's Overview

This lesson demonstrates how to enable facial detection and how to trigger an action using **EZ-Script**.

Always start with a fully charged, disconnected robot. Load **EZ-Builder** and connect to the robot. Open the bare robot project, which provides a clean workspace without unnecessary controls.

Add the control for the camera and test the camera view. The camera will provide peripheral information (external input/output that can be used to provide information).

In the **Tracking** tab of the **Camera Device**, select **Script** and the execution checkbox. There are two different scenarios for when a tracking script will be executed- either when tracking begins or when tracking ends.

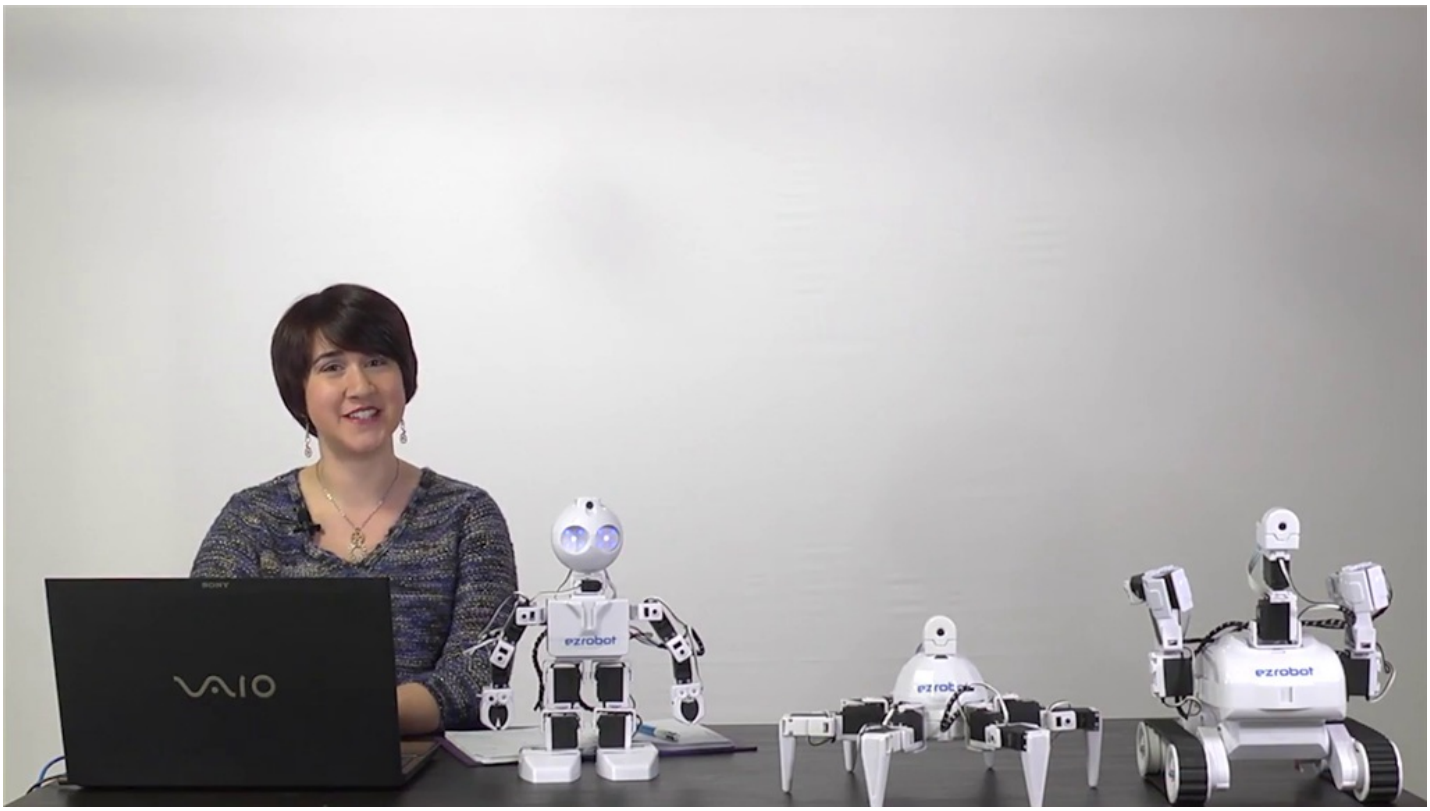
Click on the **Pencil** icon next to **Tracking Start** to access the **Blockly** workspace, and then change the tab to **EZ-Script**.

There are multiple ways to add code in the **EZ-Script** workspace. Right-click to view options, scroll through the **Cheat Sheet**, or start typing to be prompted by Intellisense. Line numbers are provided on the left-hand side for debugging and organization. It is recommended practice to use a consistent naming convention when coding.

Add the **ControlCommand(â€œAuto Positionâ€, AutoPositionAction, â€œWave)** line of code, and then add **SayEZB** along with the desired text to be spoken. The text will stored as a string of characters. Review the code to understand how it will be executed. Save the script and return.

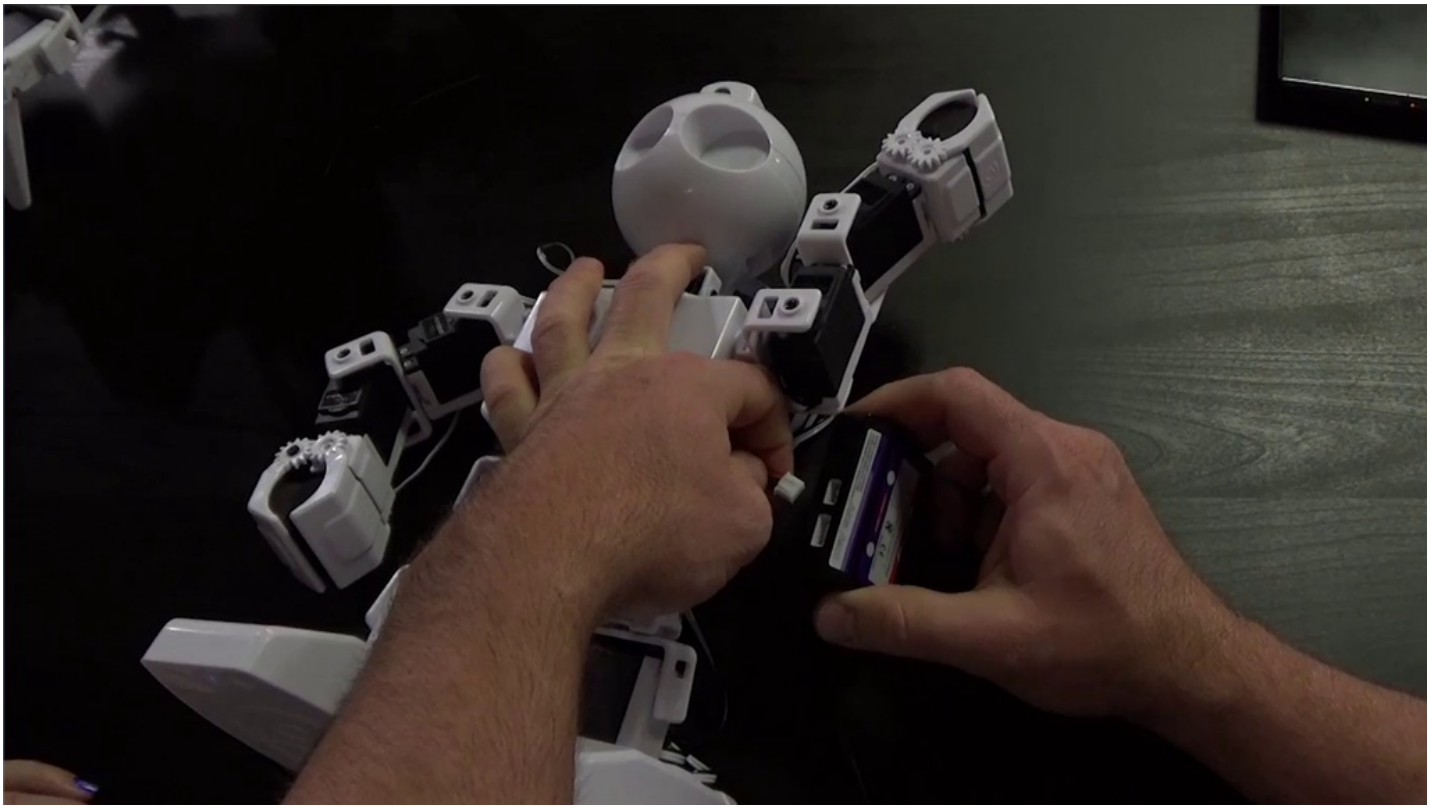
When a face is detected, the two lines of code will be executed, causing the robot to wave and speak the chosen text.

Remember to disconnect, power off, and charge the robot when finished.



Step 1

Learn how to use **EZ-Script** to make the robot wave when it recognizes a face. This example will use **Revolution JD**, but this exercise can also be done with **Revolution Six** and **Revolution Roli**. Always start with a fully charged robot and be sure to disconnect from the battery charger carefully.

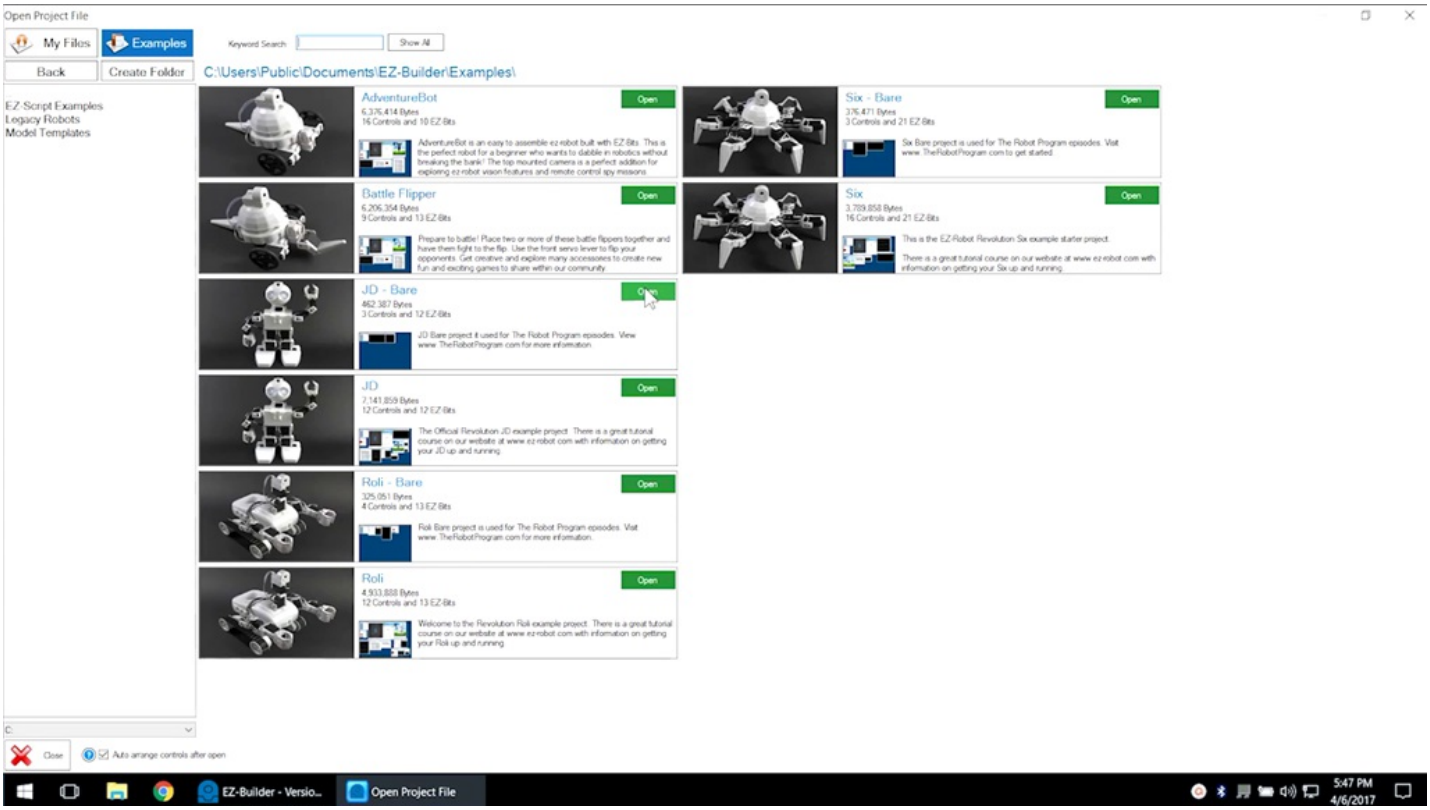


Step 2

Power on the fully charged robot. Load the **EZ-Builder** software.

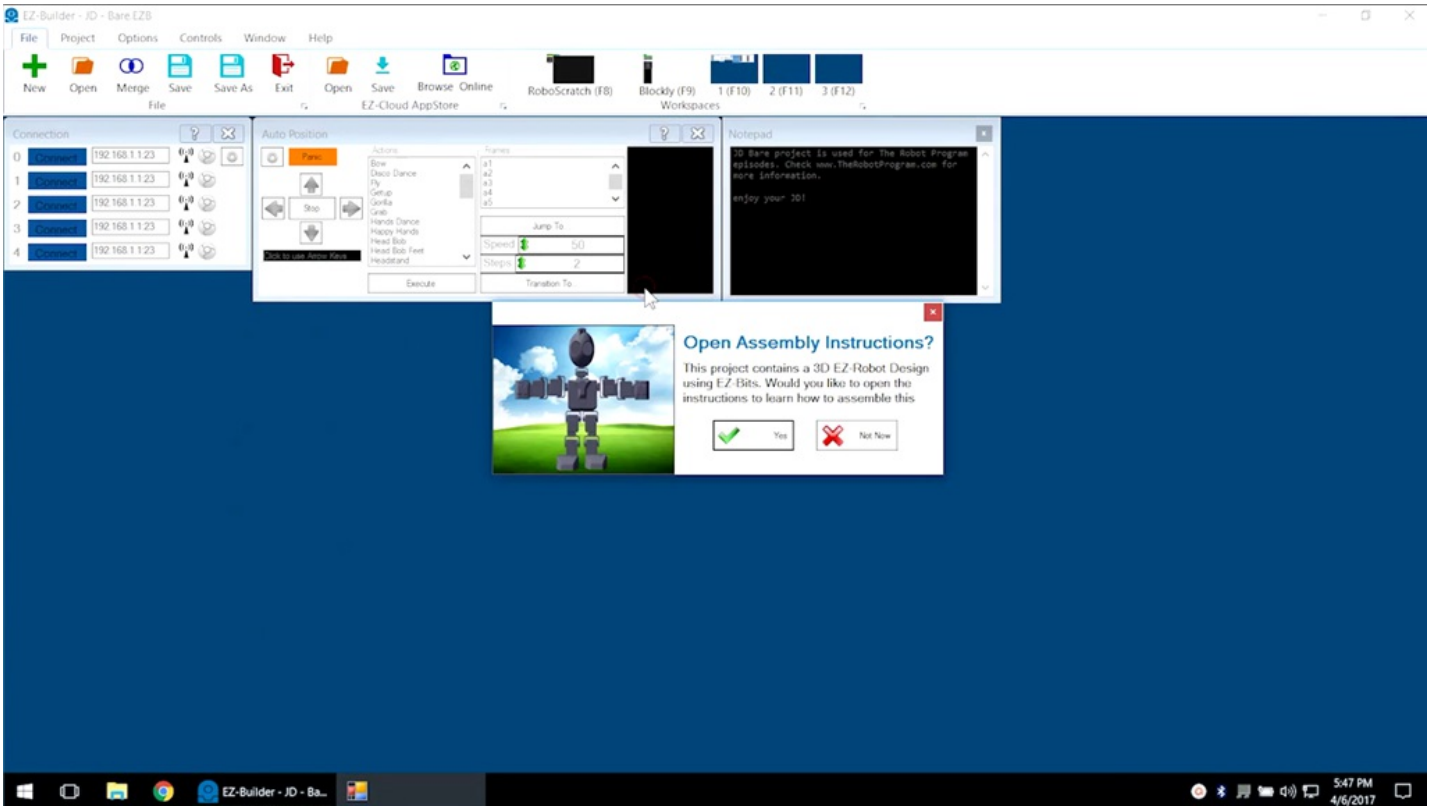
Step 3

From **Example Projects**, open the bare project for the desired robot.



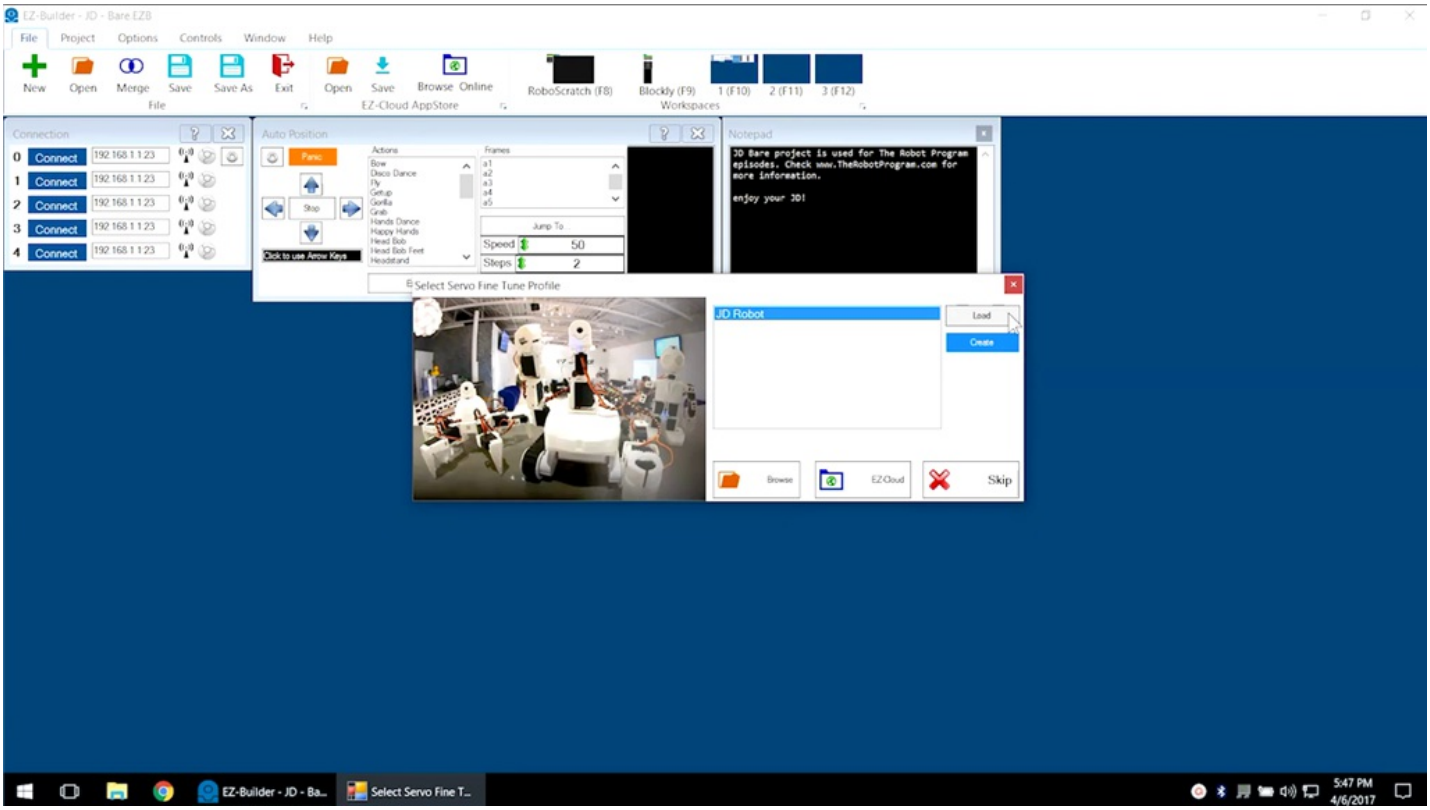
Step 4

Skip the build instructions. View past episodes for more build information.



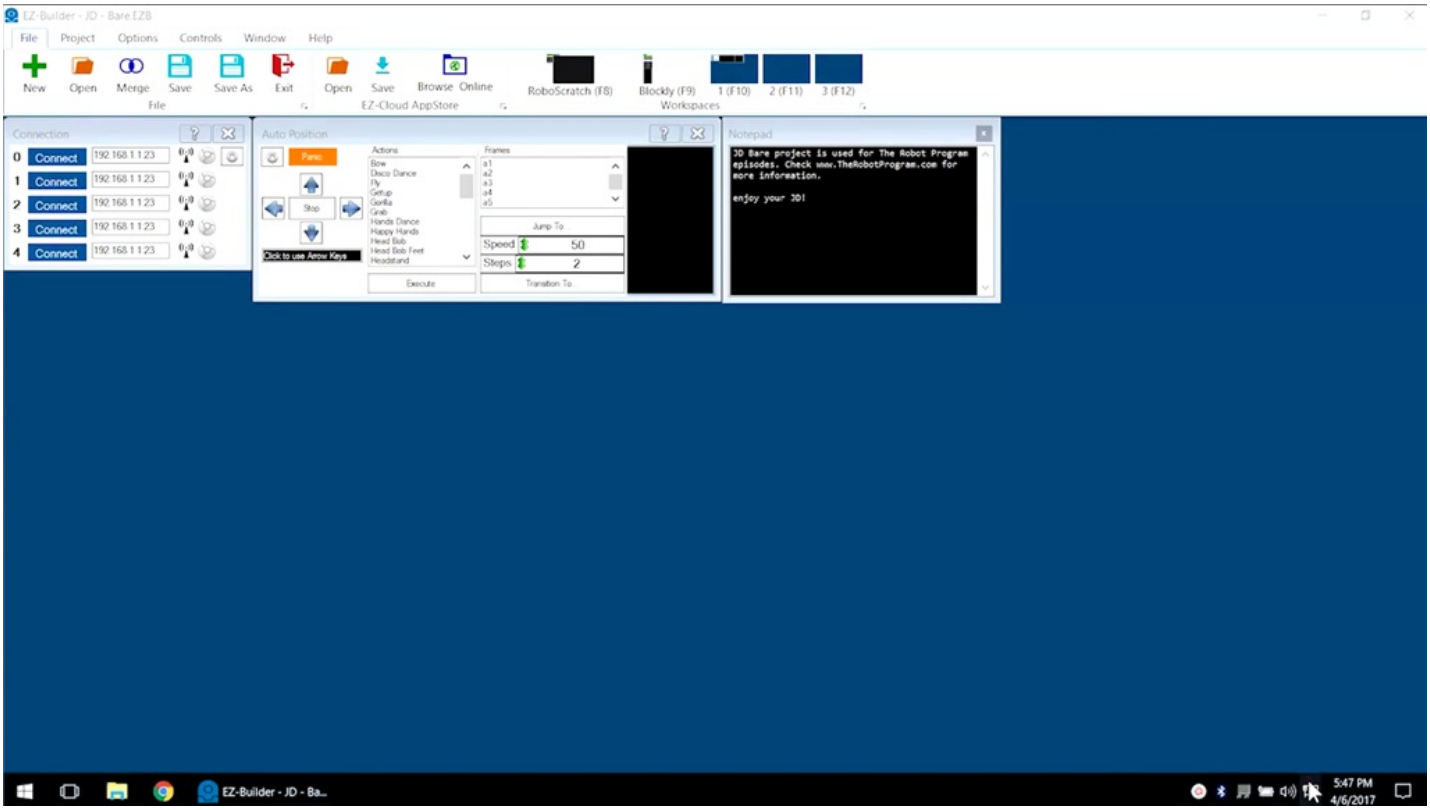
Step 5

If using **Revolution JD**, load the calibrated servo profile as necessary.



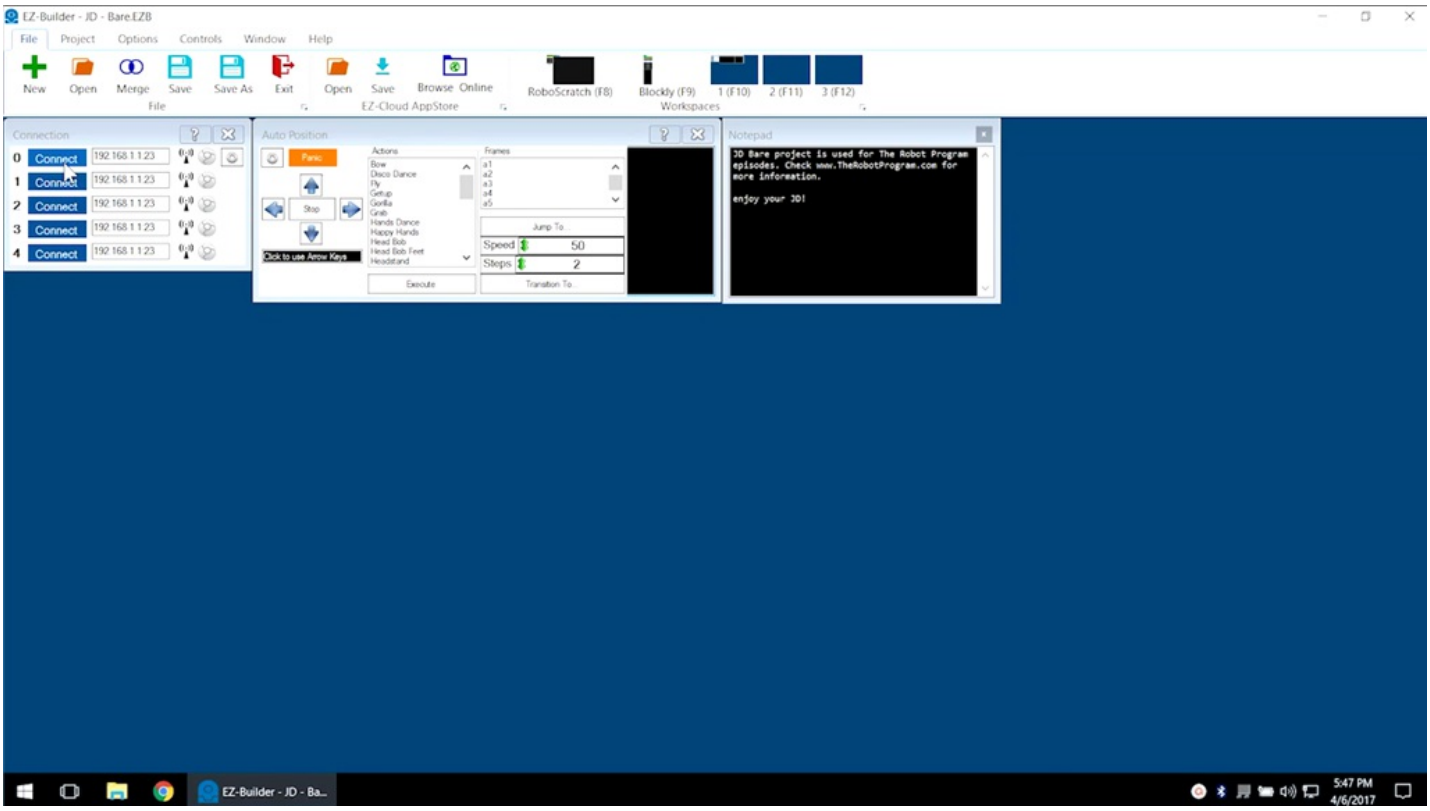
Step 6

The bare project provides a simplified starting workspace with minimal controls.



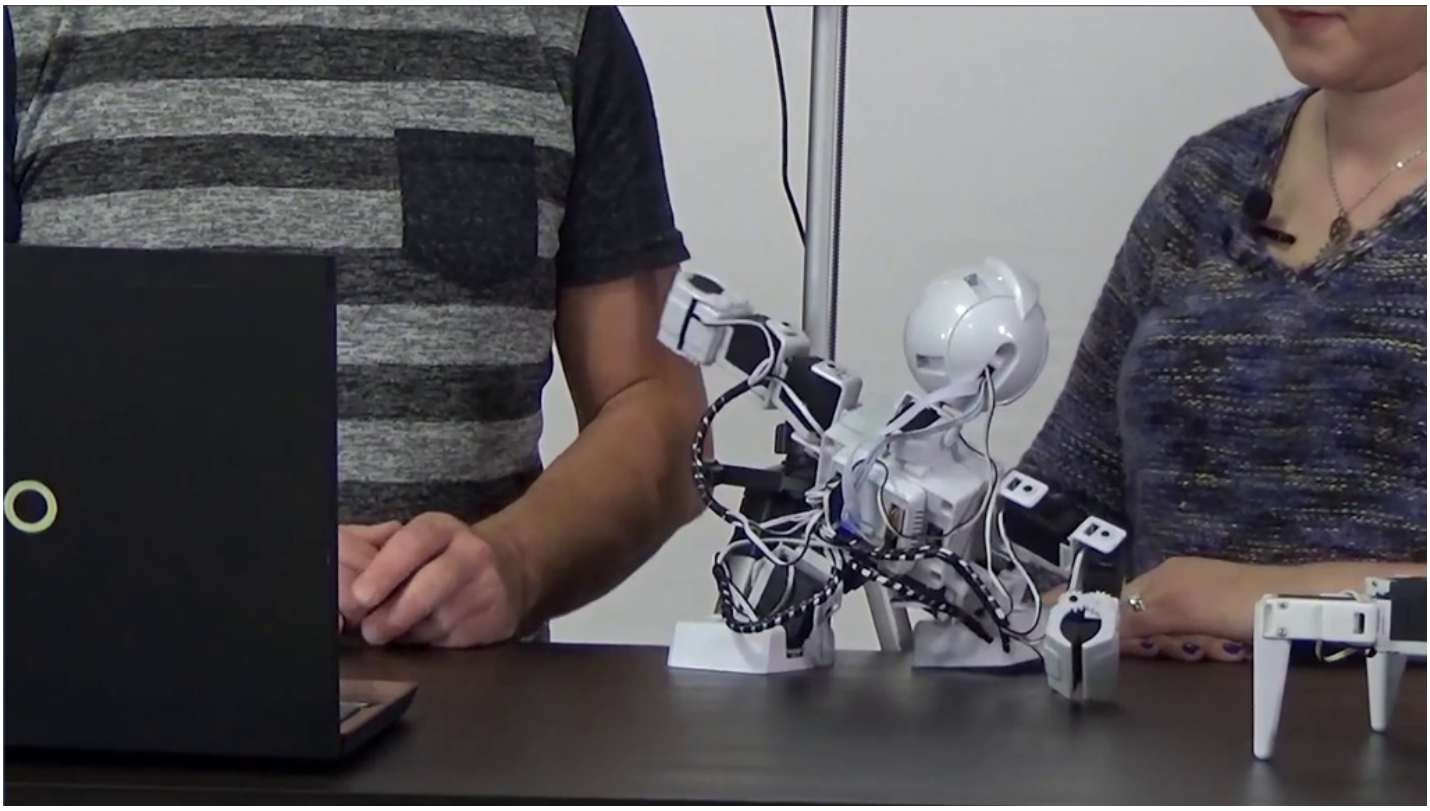
Step 7

Use **Wi-Fi** to connect to the **EZ-B** and click on the blue **Connect** button. The robot will move into the initialization position.



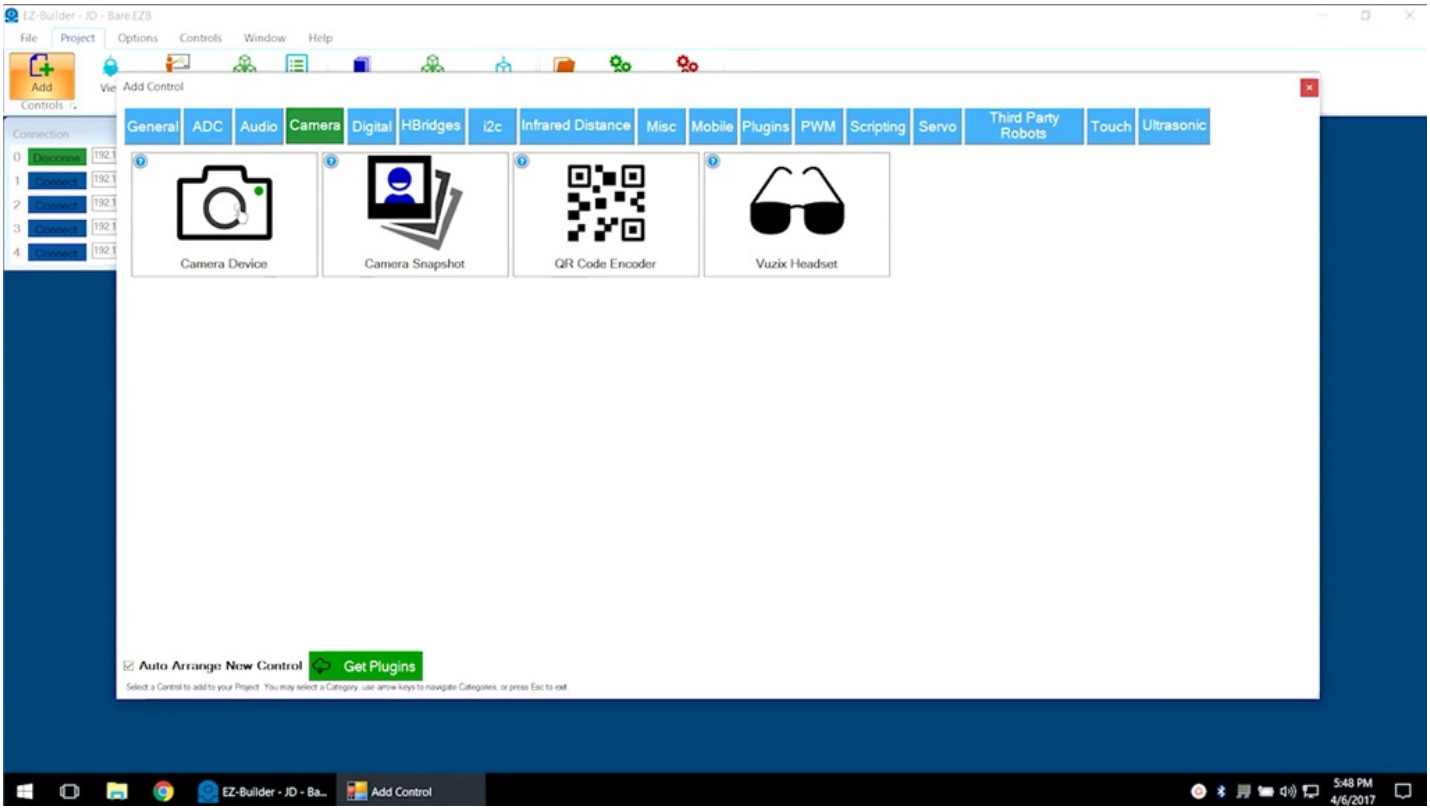
Step 8

If using **Revolution JD**, execute **Stand From Sit** in the **Auto Position** control window to bring the robot to a standing position.



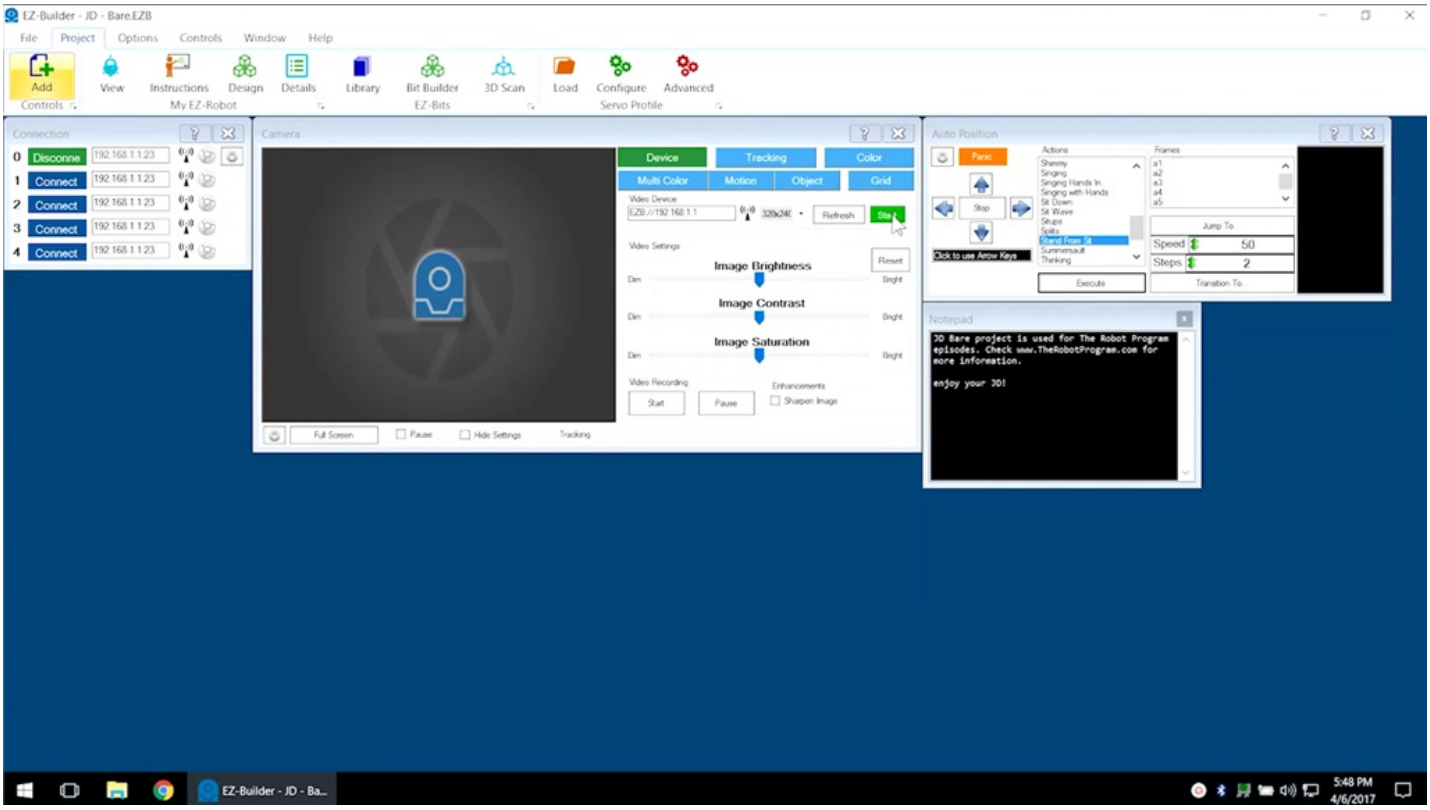
Step 9

Select **Project** -> **Add Controls** -> **Camera** -> **Camera Device** to add the camera controls.



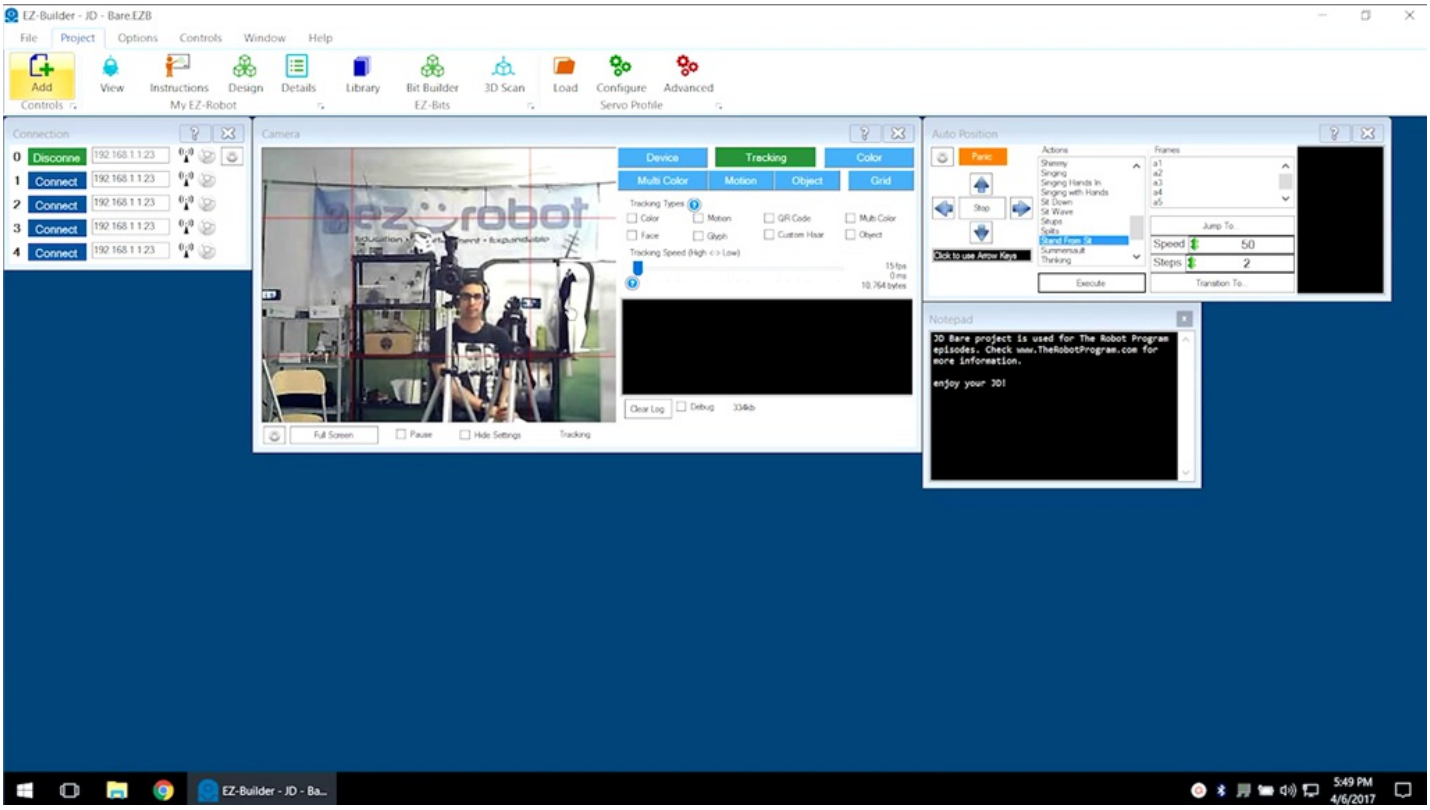
Step 10

Push the green **Start** button to connect to the camera. The camera will provide peripheral information that will be used within the program.



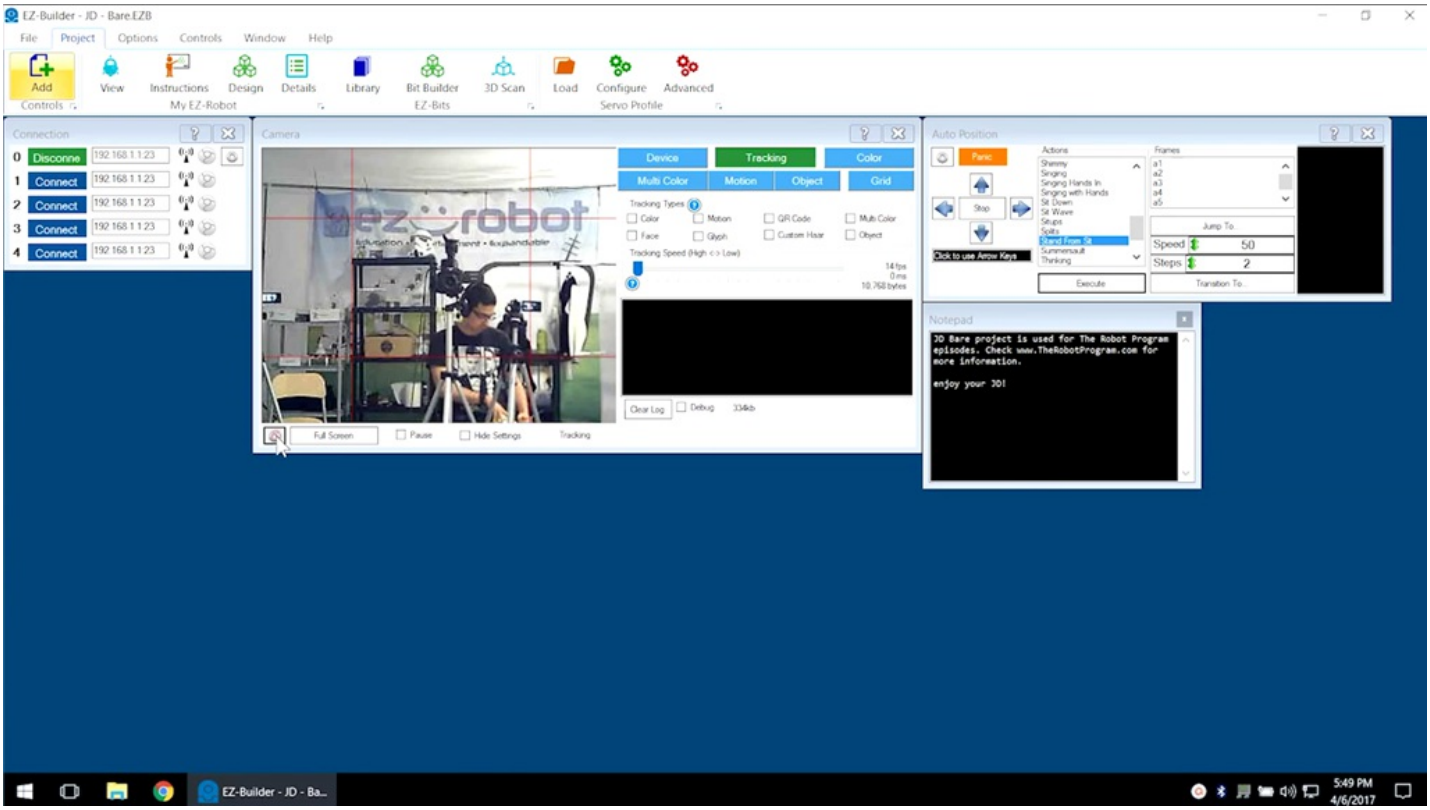
Step 11

Select the **Tracking** tab. There are several types of tracking available, including object, face, and color.



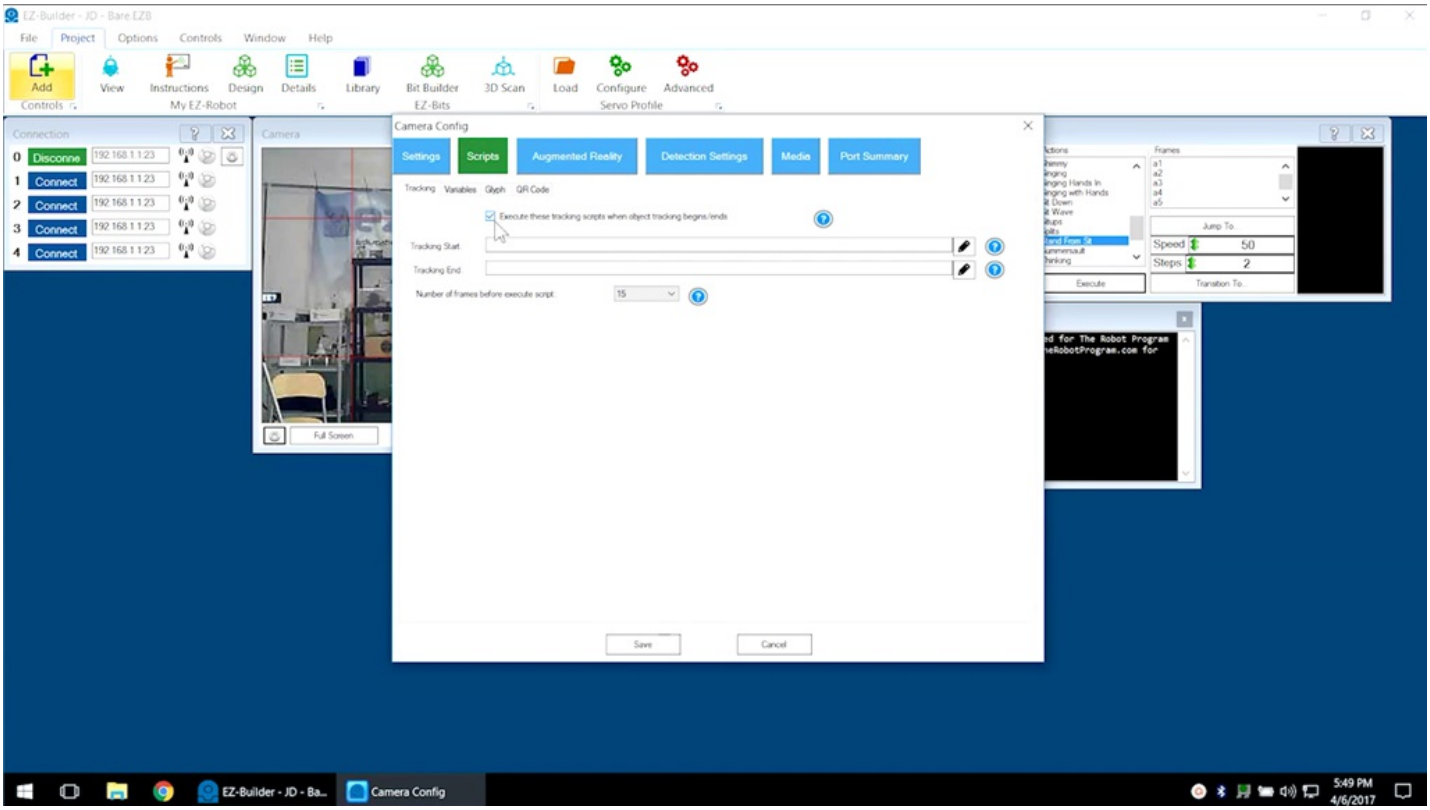
Step 12

Click on the **Gear Icon** to access the tracking configuration settings.



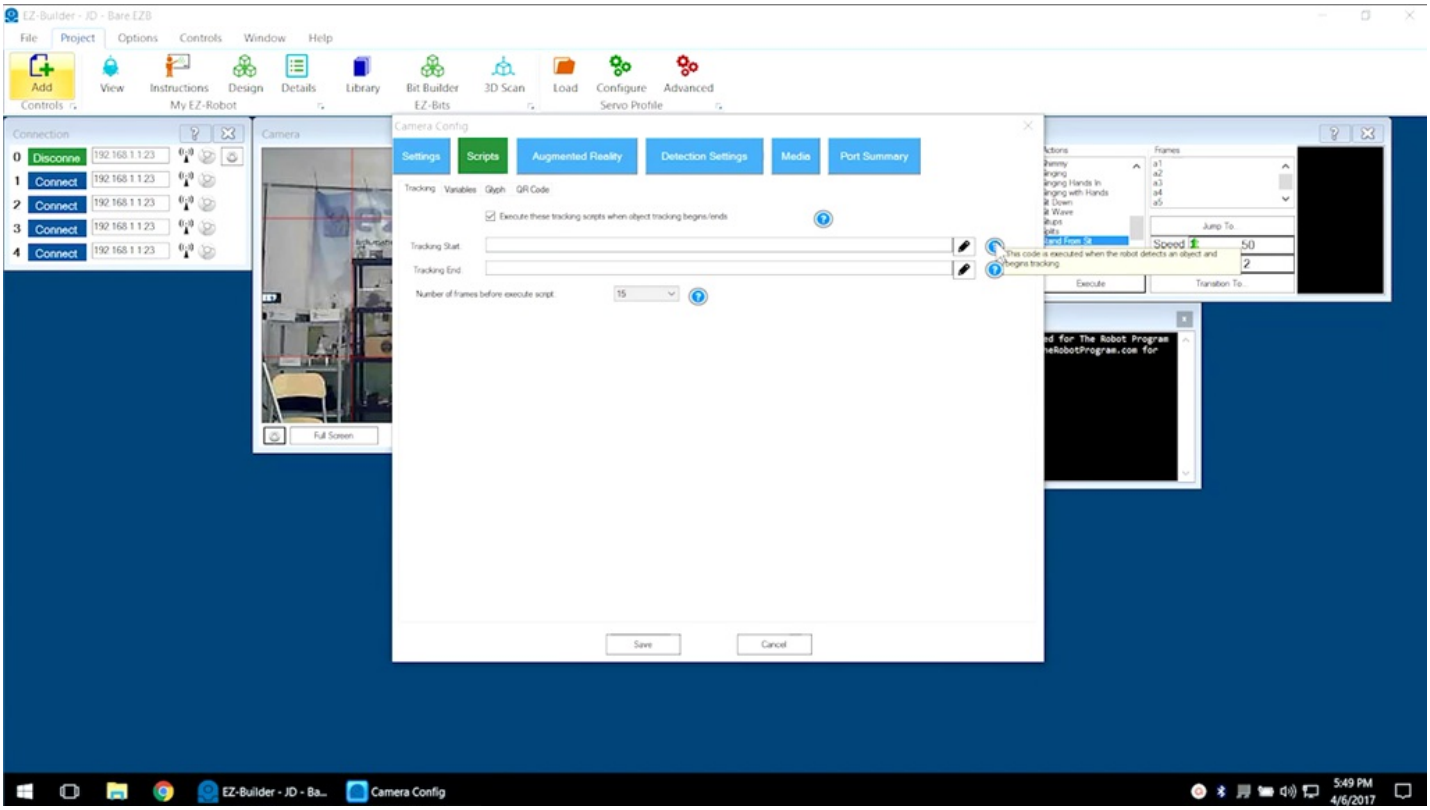
Step 13

Click the **Script** tab and select the script execution checkbox.



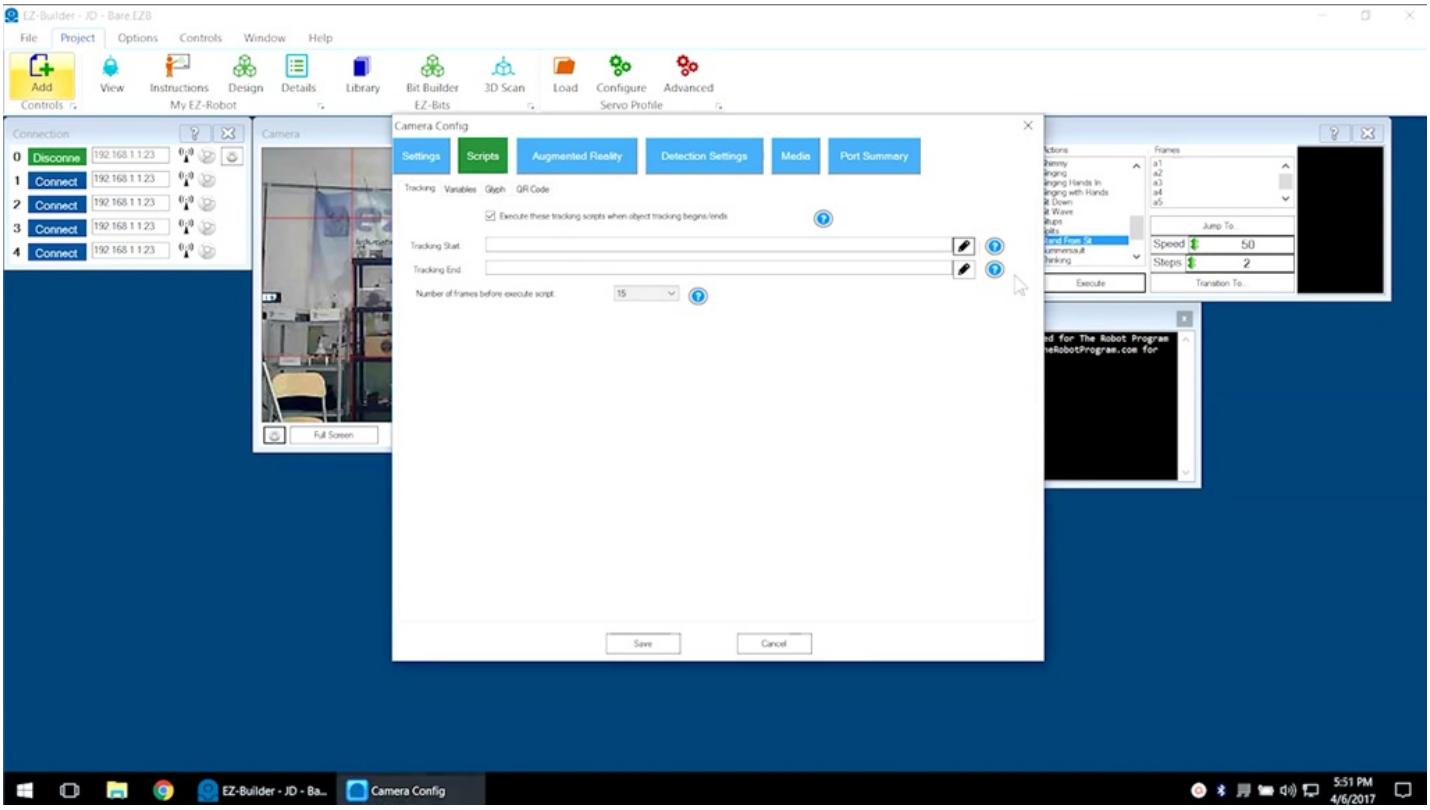
Step 14

Hovering over any blue question mark will provide more information about an **EZ-Builder** feature.



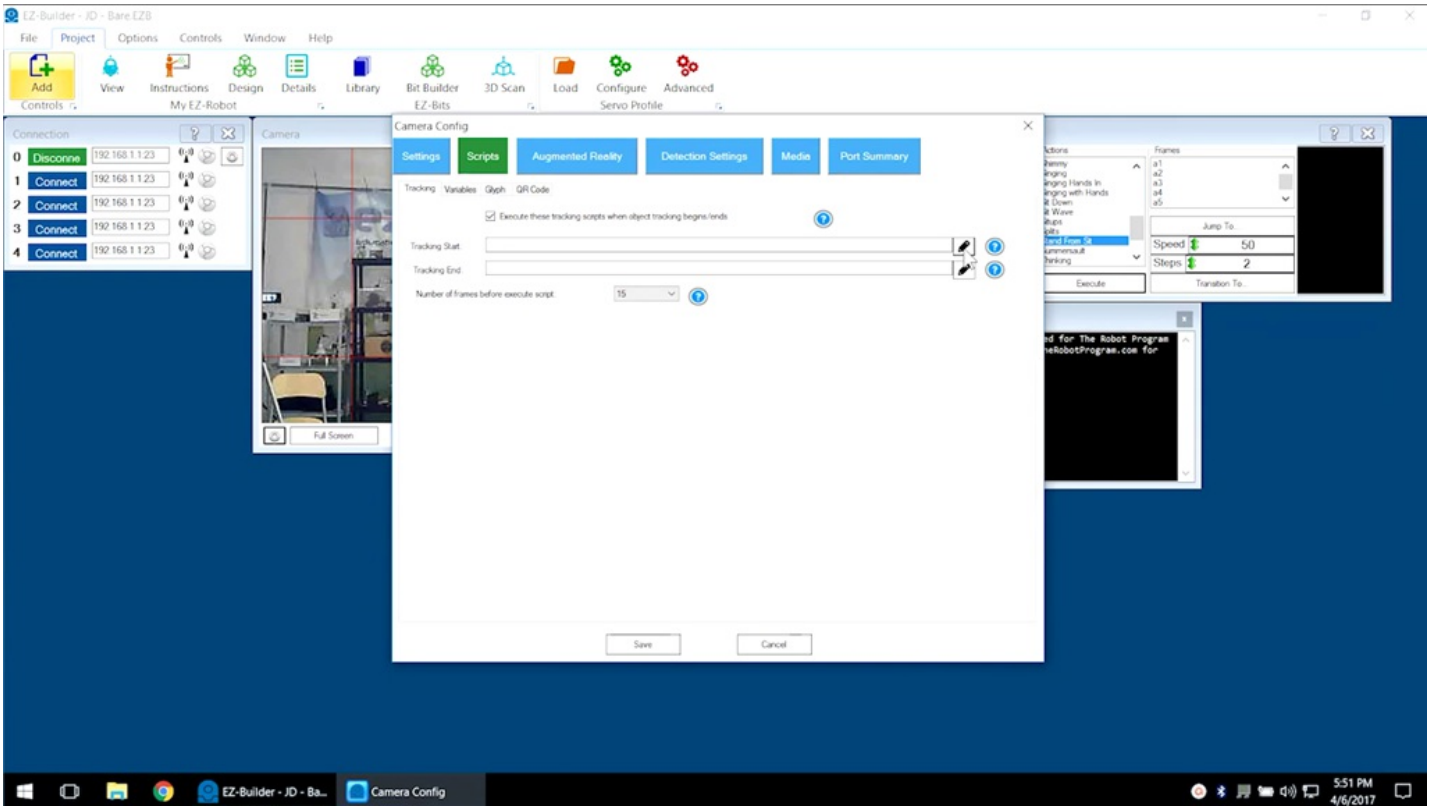
Step 15

A **Tracking Start** script will execute once a face is detected. A **Tracking End** script will execute when tracking has stopped.



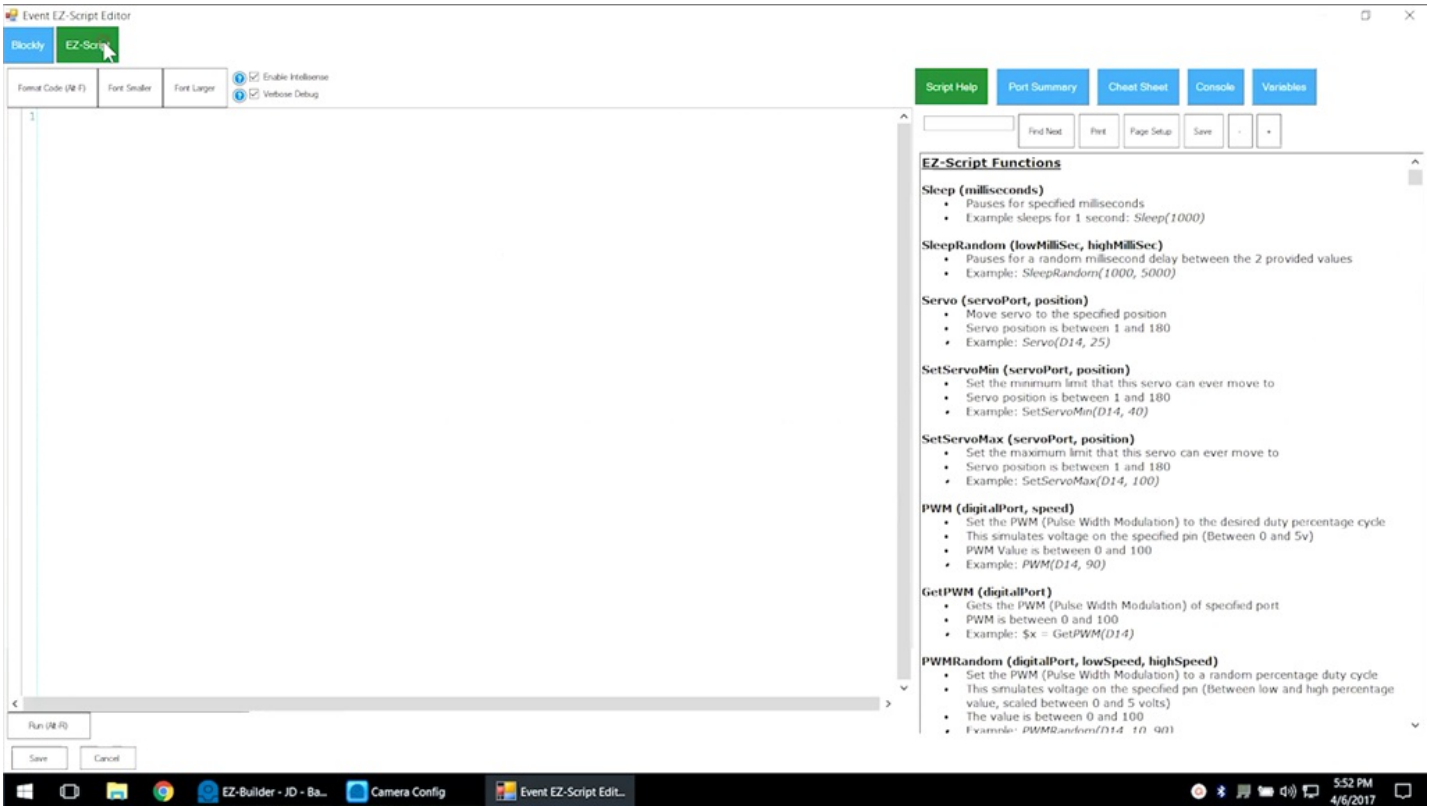
Step 16

Click on the **Pencil Icon** to access the script editor. Close the **Blockly** prompt.



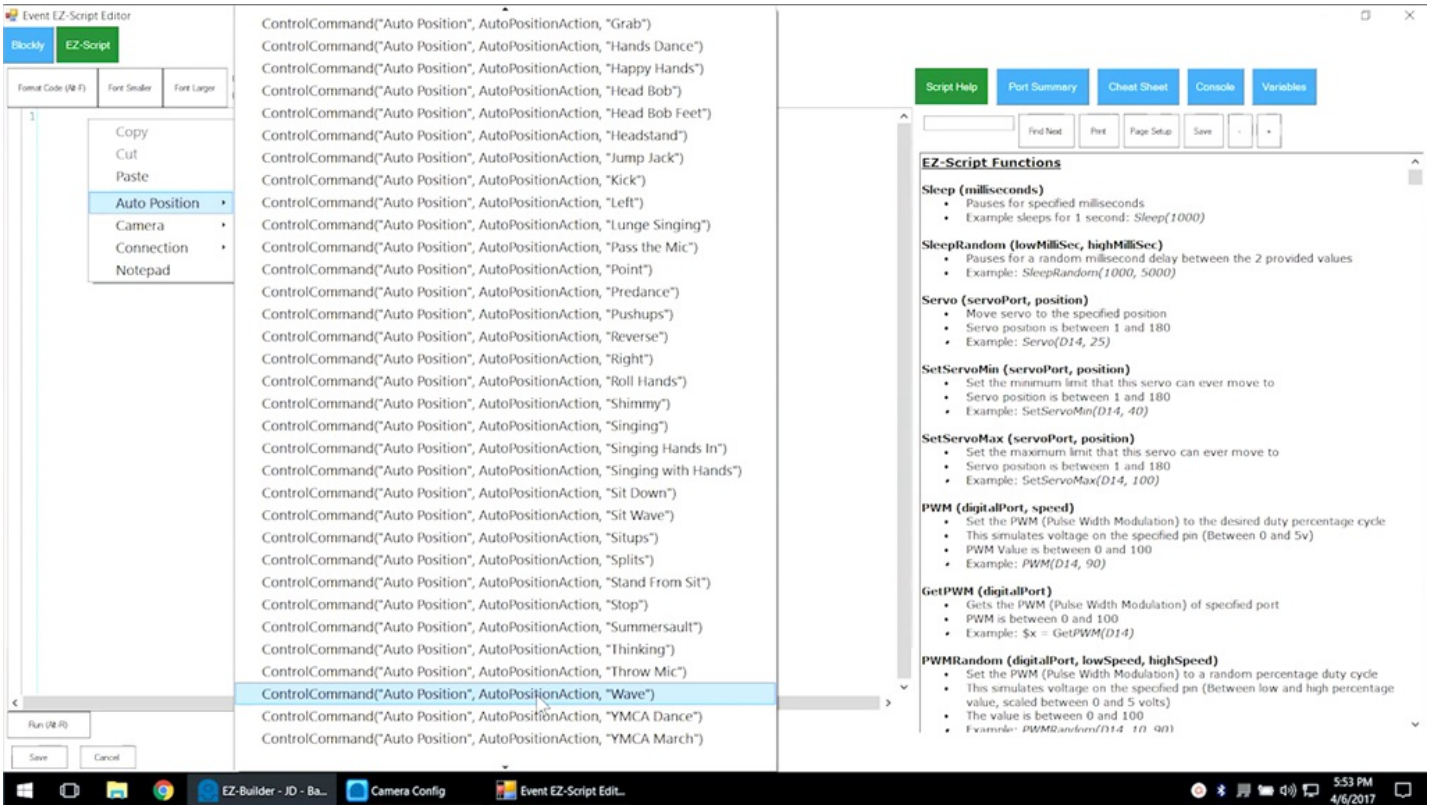
Step 17

Click on the **EZ-Script** tab to change script editors.



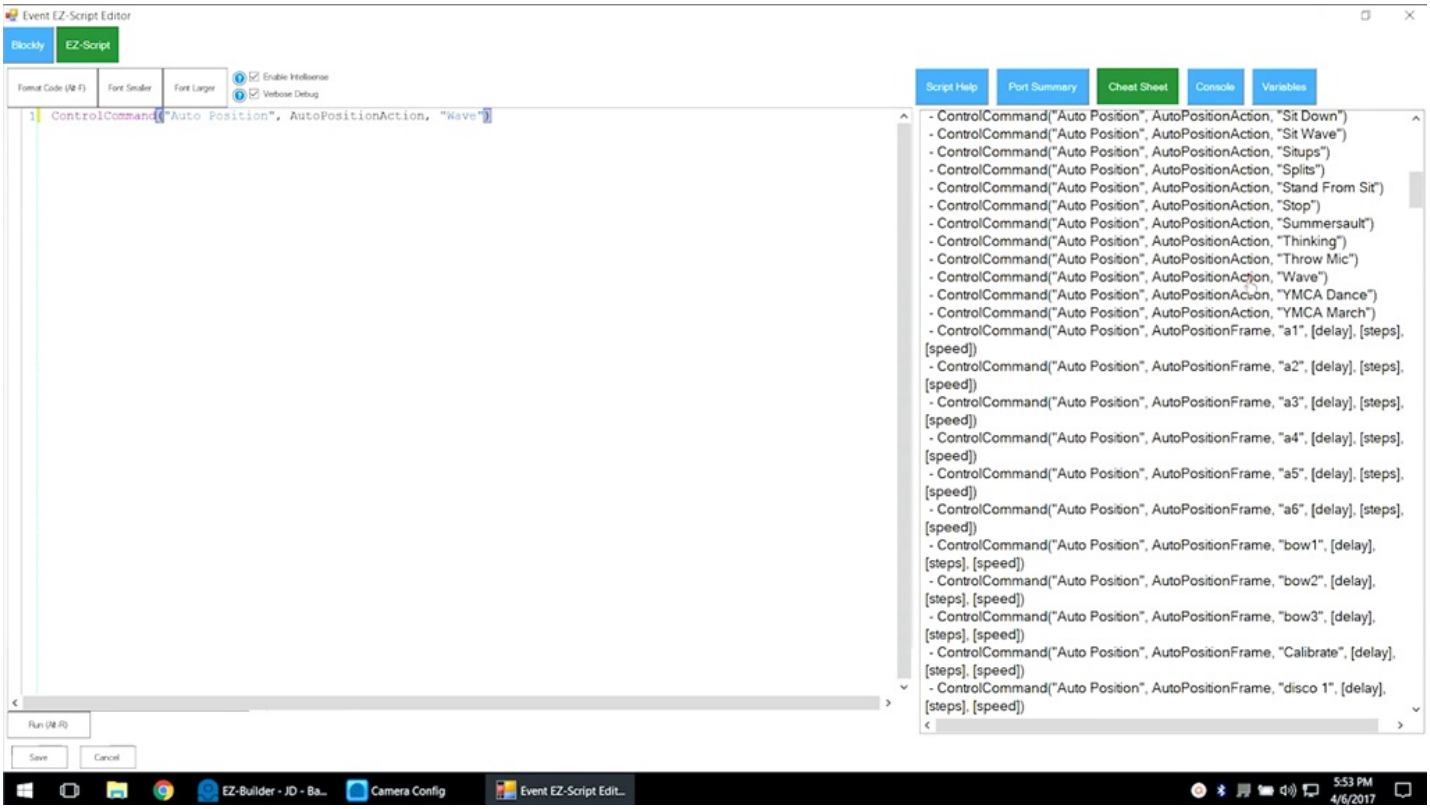
Step 18

Right-click in the editing space to view available project controls. Scroll down and add the desired command.



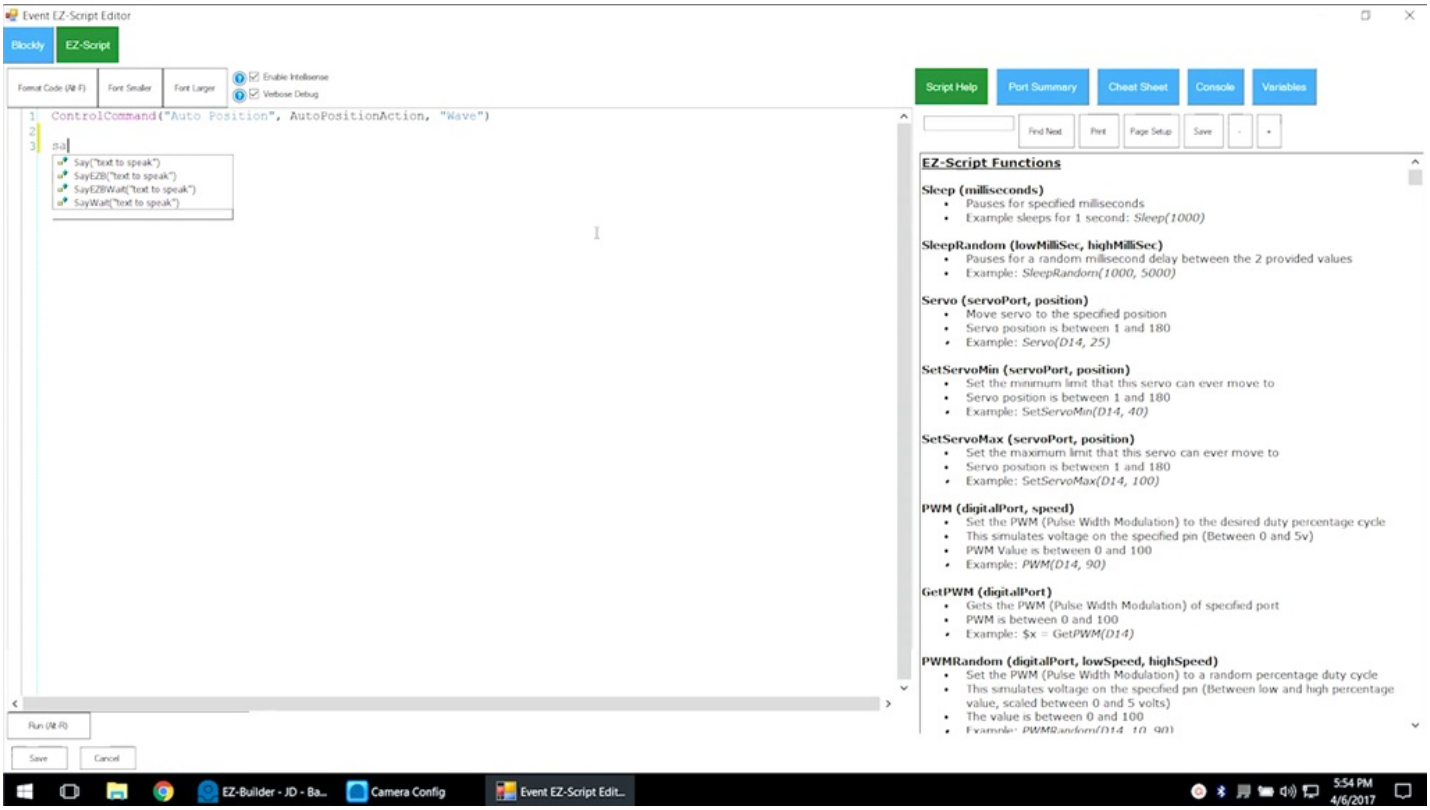
Step 19

The **Cheat Sheet** can also be used to add code. Scroll and click on **ControlCommand(â€œAuto Positionâ€, AutoPositionAction, â€œWave)**. This line of code will tell the **AutoPosition** control to run the **Wave** action.



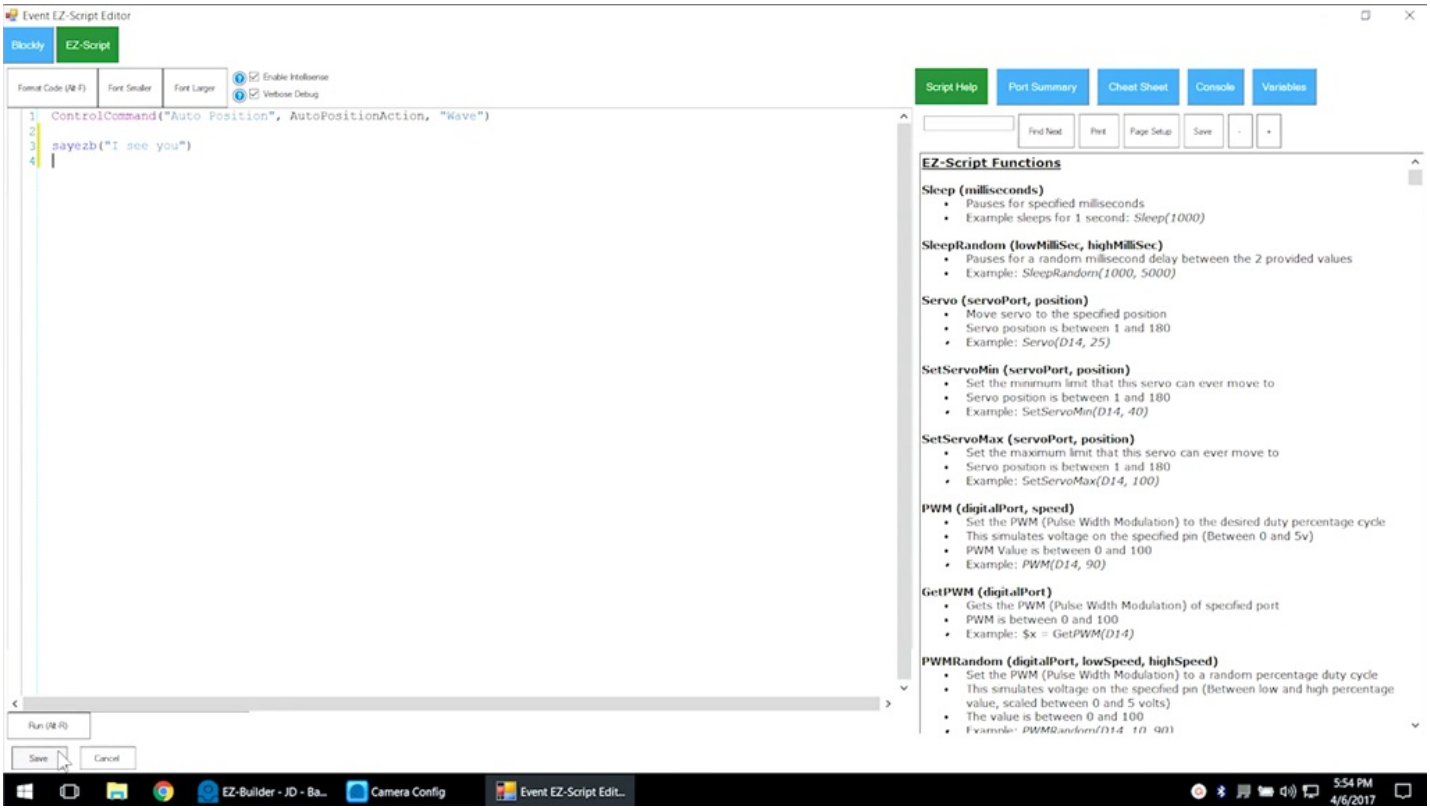
Step 20

On a new line, start typing â€œsayâ€. The **Intellisense** feature will prompt the available options.



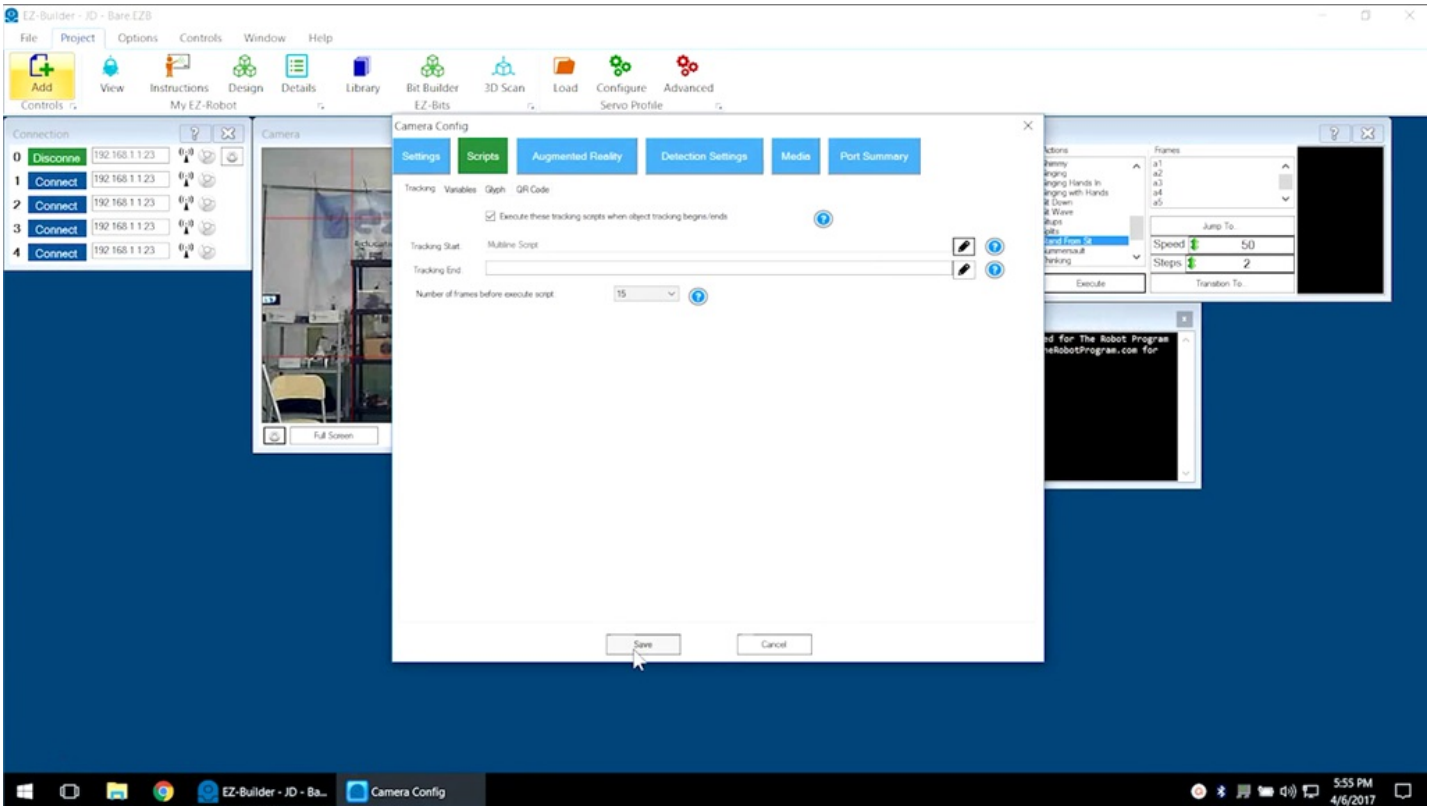
Step 21

Select **SayEZB** and add the desired text to be converted into speech.



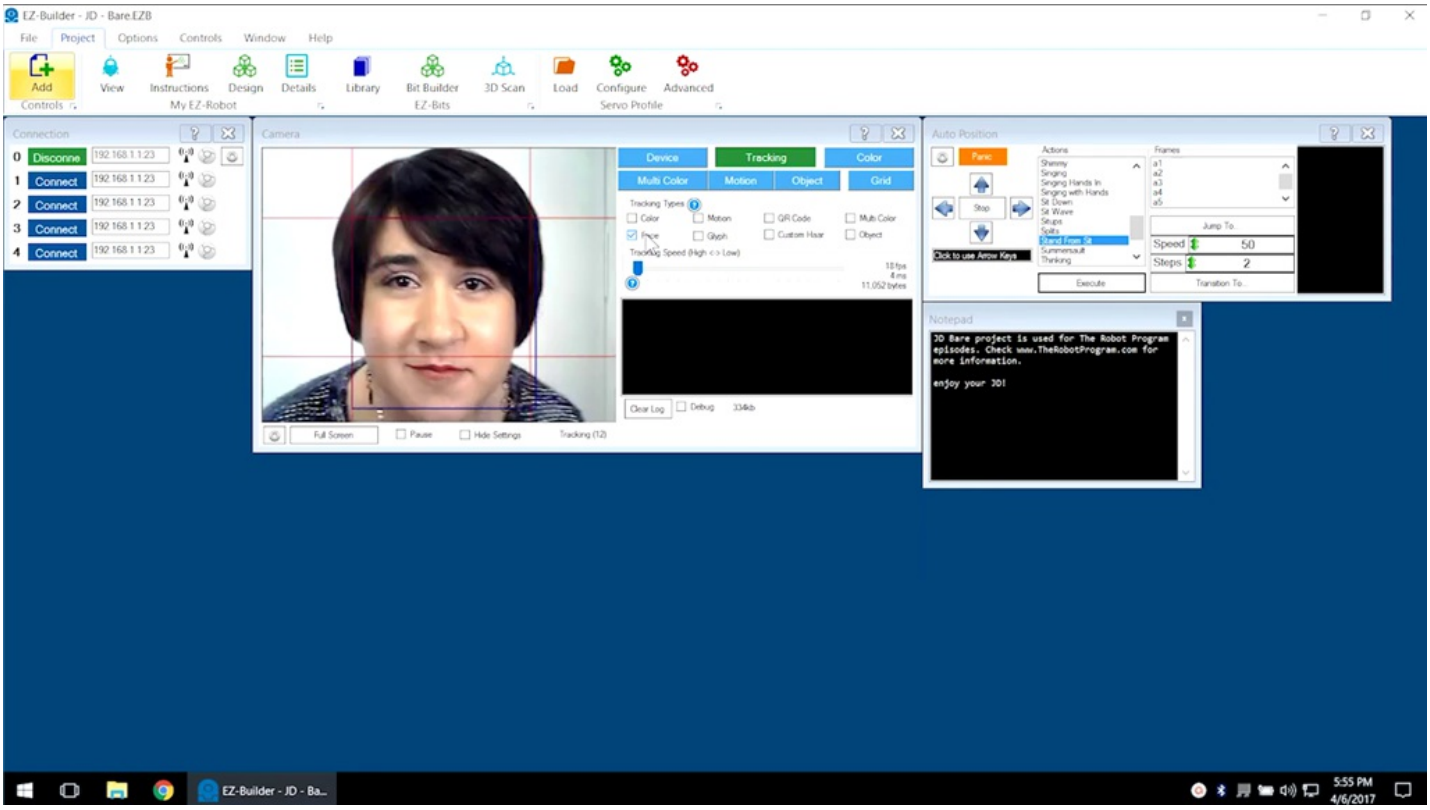
Step 22

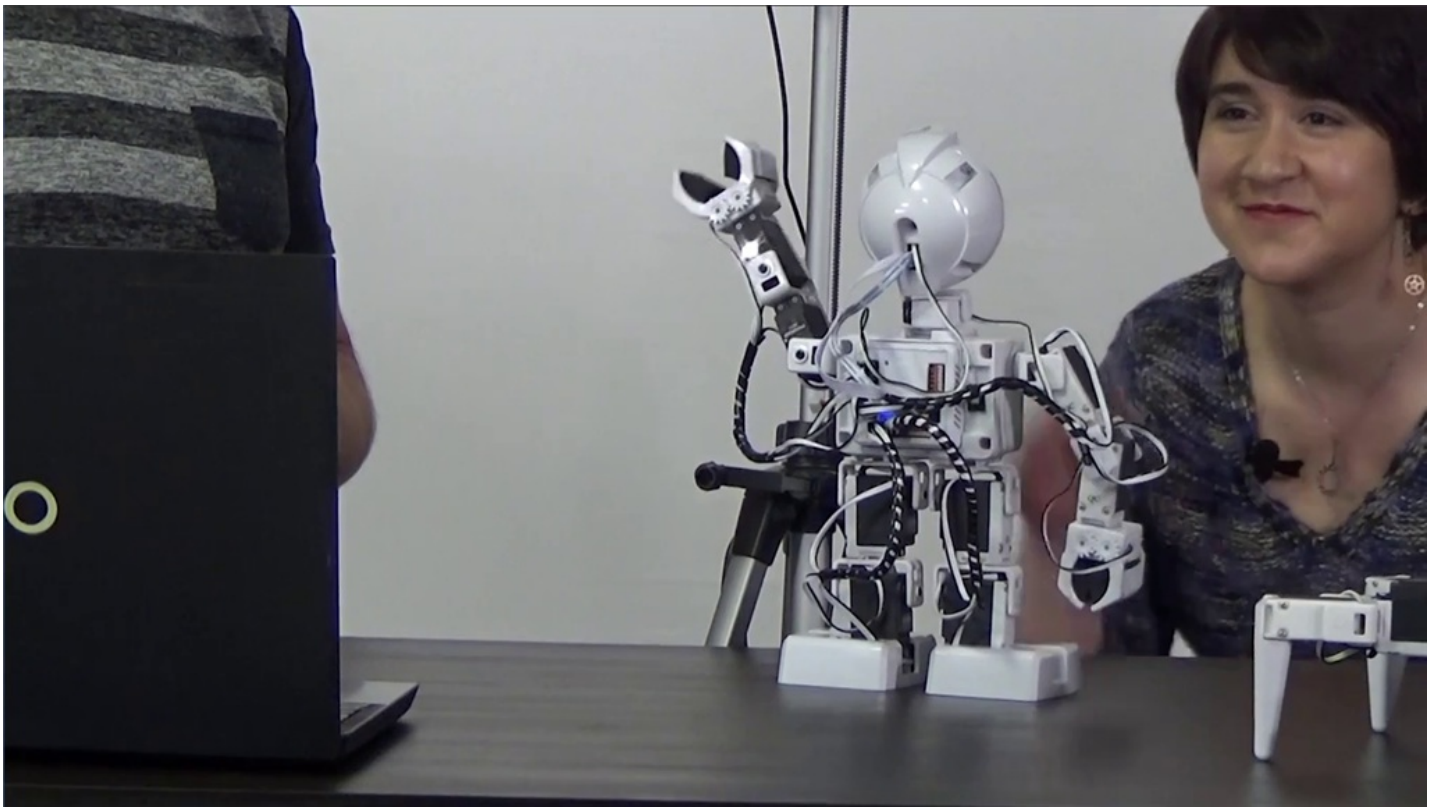
Save the code and return. The script will execute for any selected tracking type.



Step 23

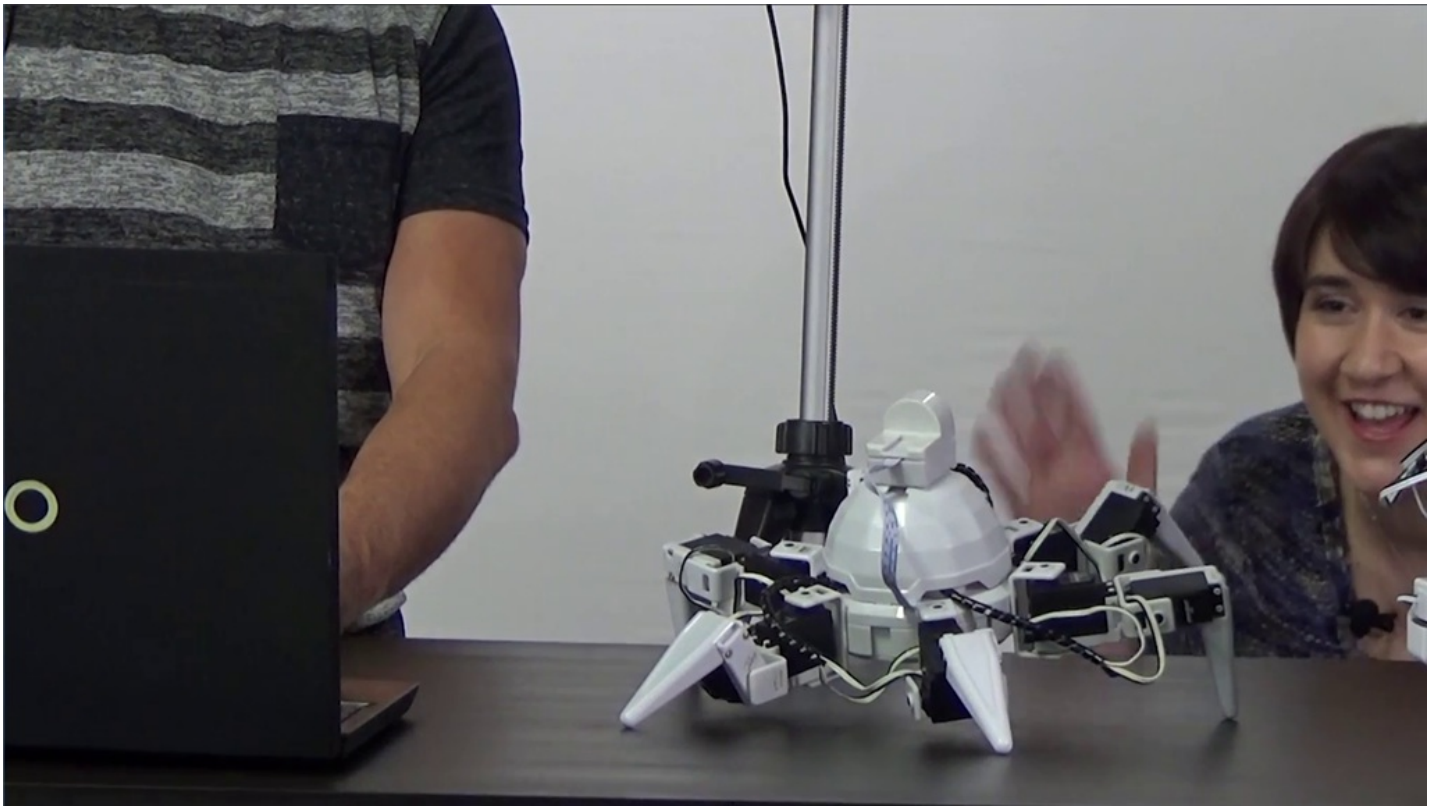
Select the **Face** checkbox to begin tracking and test the script. Once the robot detects a face, it will speak and complete the wave action.





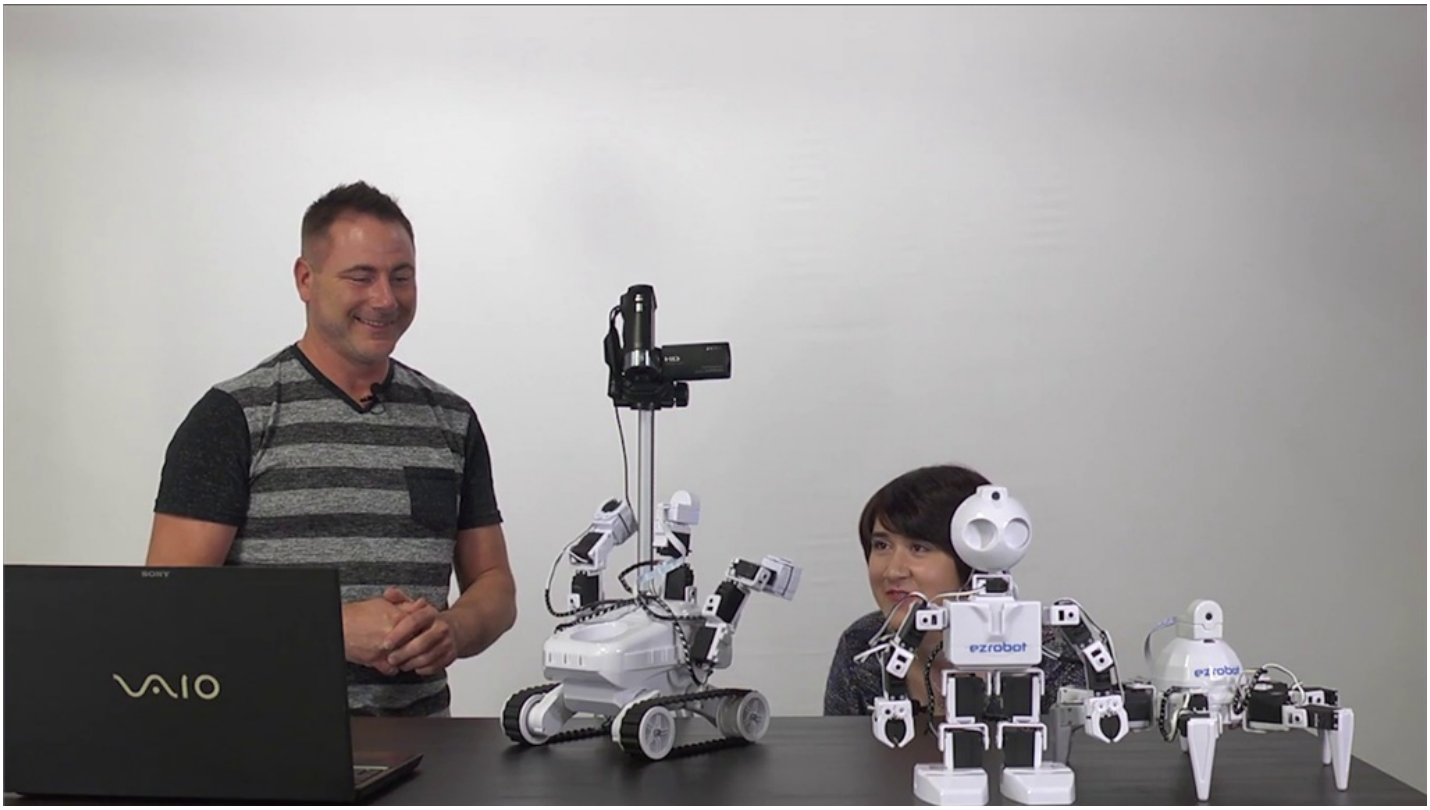
Step 24

Revolution Six will execute the same steps.



Step 25

Revolution Roli will execute the same steps.



Quiz

Question #1 When does a "Tracking Start" event script begin execution?

Question #2 What does the following line of code do?

``` ControlCommand("Auto Position", AutoPositionAction, "Wave") ```

Question #3 Which tracking type must be enabled for this activity?

View the answers to this quiz at www.ez-robot.com/Tutorials/Lesson/102.

Visit www.TheRobotProgram.com for more episodes.
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