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The Robot Program Episode 023: Mobile JD

This lesson will demonstrate how to control the Revolution JD Humanoid with an iOS or Android phone or tablet. At the end of this lesson, readers will be familiar with how to access and connect to the mobile JD example project, how to execute basic controls, and how to access the available programming workspaces. Follow along with The Robot Program Episode 023: Mobile JD. View the video episode here: https://www.ez-robot.com/Tutorials/Lesson/55

Last Updated: 7/18/2018

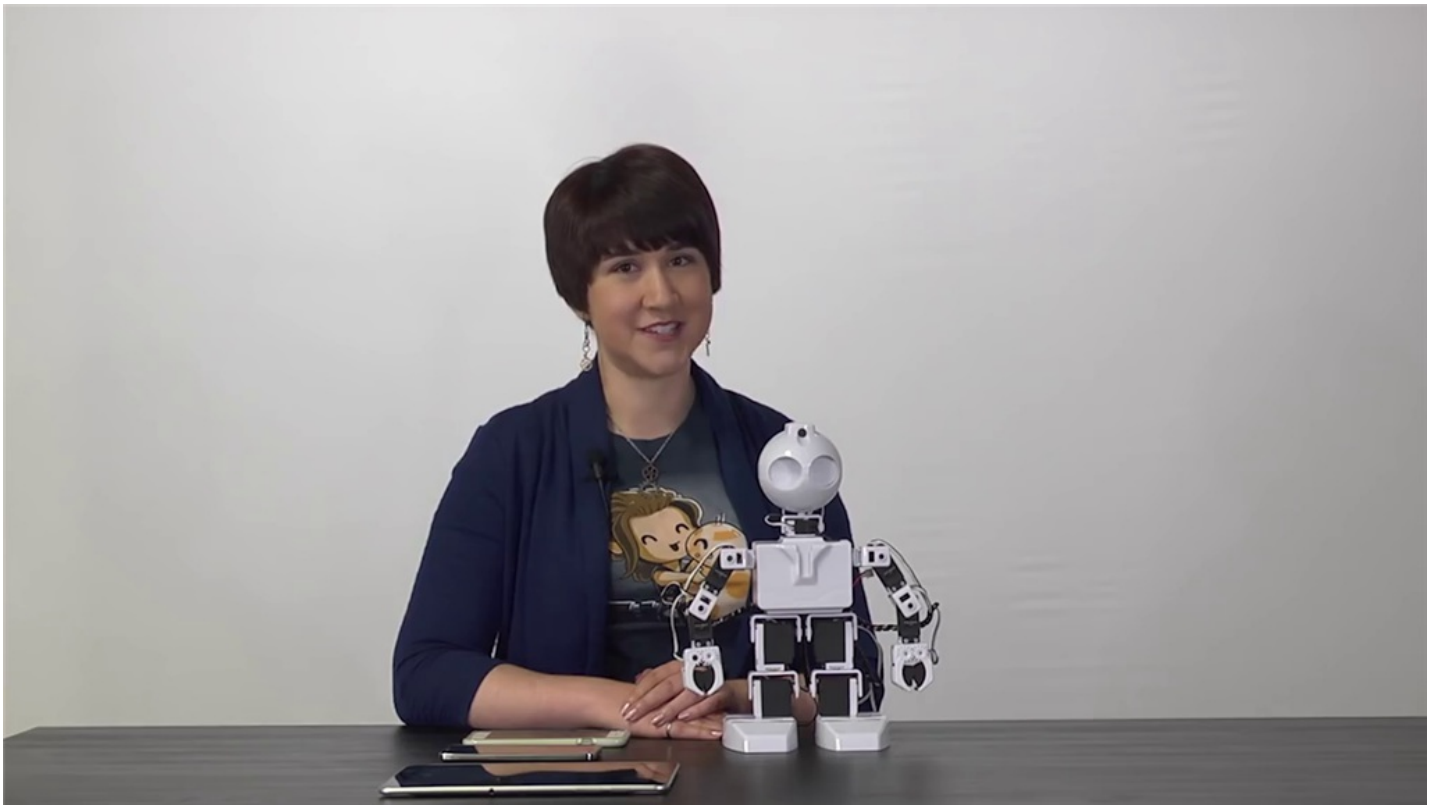
Professor E's Overview

This lesson demonstrates how to enable facial detection and how to control **Revolution JD** using the **EZ-Builder Mobile** software.

Always start with a fully charged, disconnected robot. Download **EZ-Builder Mobile** from the Google Play or Android App Store. Use **EZ-Cloud** to access robot project apps.

Download and install the **JD** example project. Power on the robot and connect to the **EZ-B v4** Wi-Fi connection.

The mobile interface enables the execution of various actions, movement control, sounds, and even color tracking. Access the **RoboScratch** or **Blockly** mobile workspaces to create a custom program.

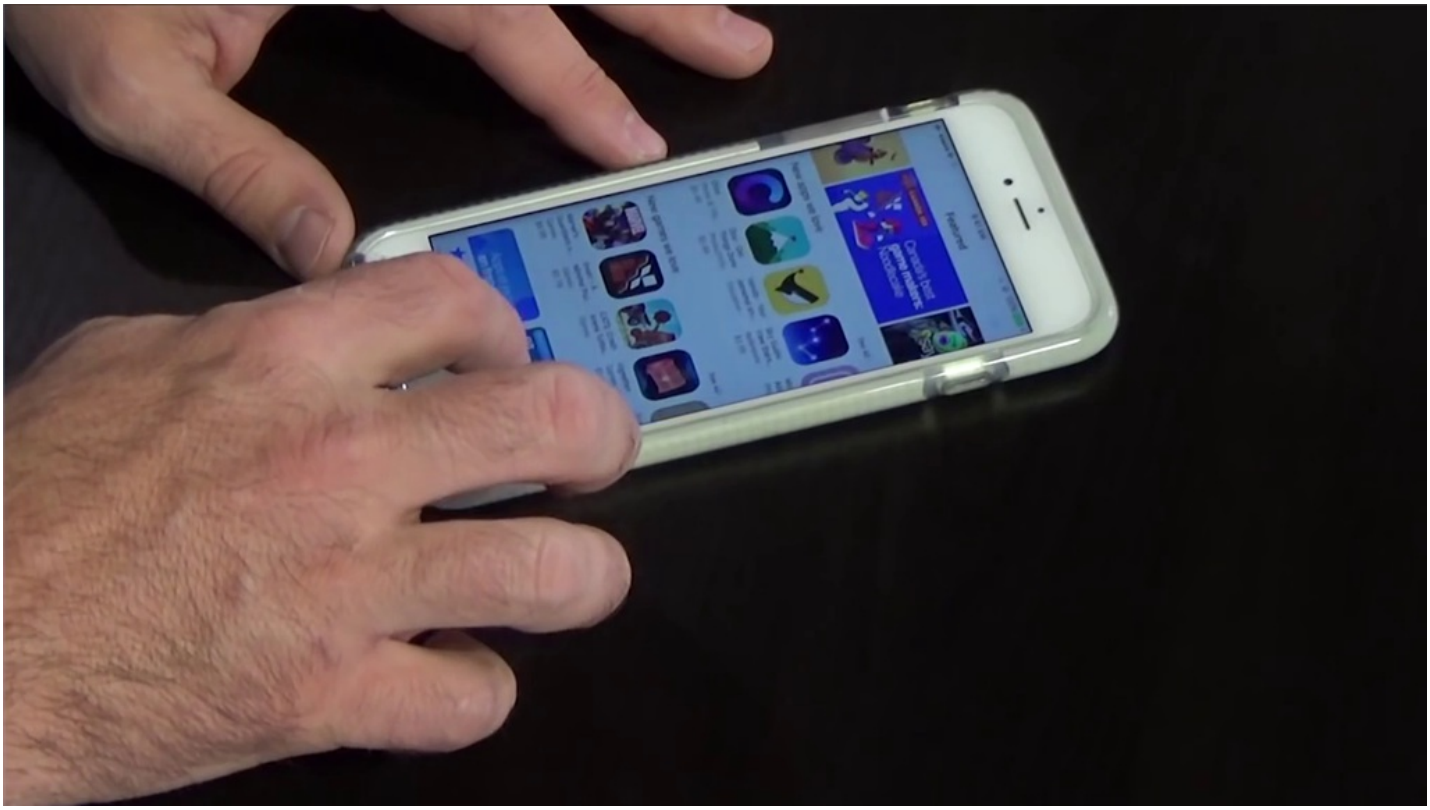


Step 1

Control **Revolution JD** using **EZ-Builder Mobile**. **EZ-Builder Mobile** is available for Android or iOS mobile devices such as phones or tablets.

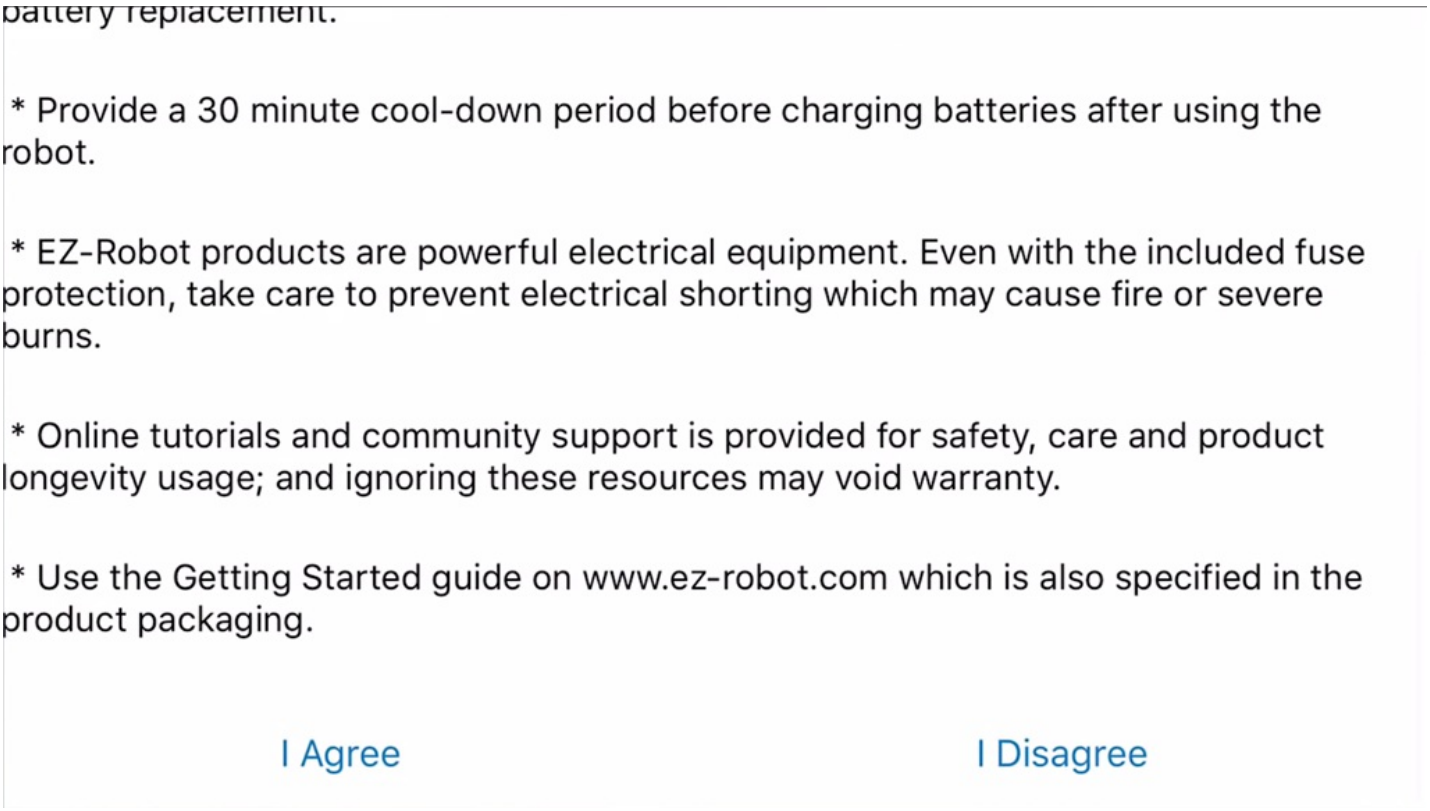
Step 2

Download **EZ-Builder Mobile** from Google Play or the Apple App Store.



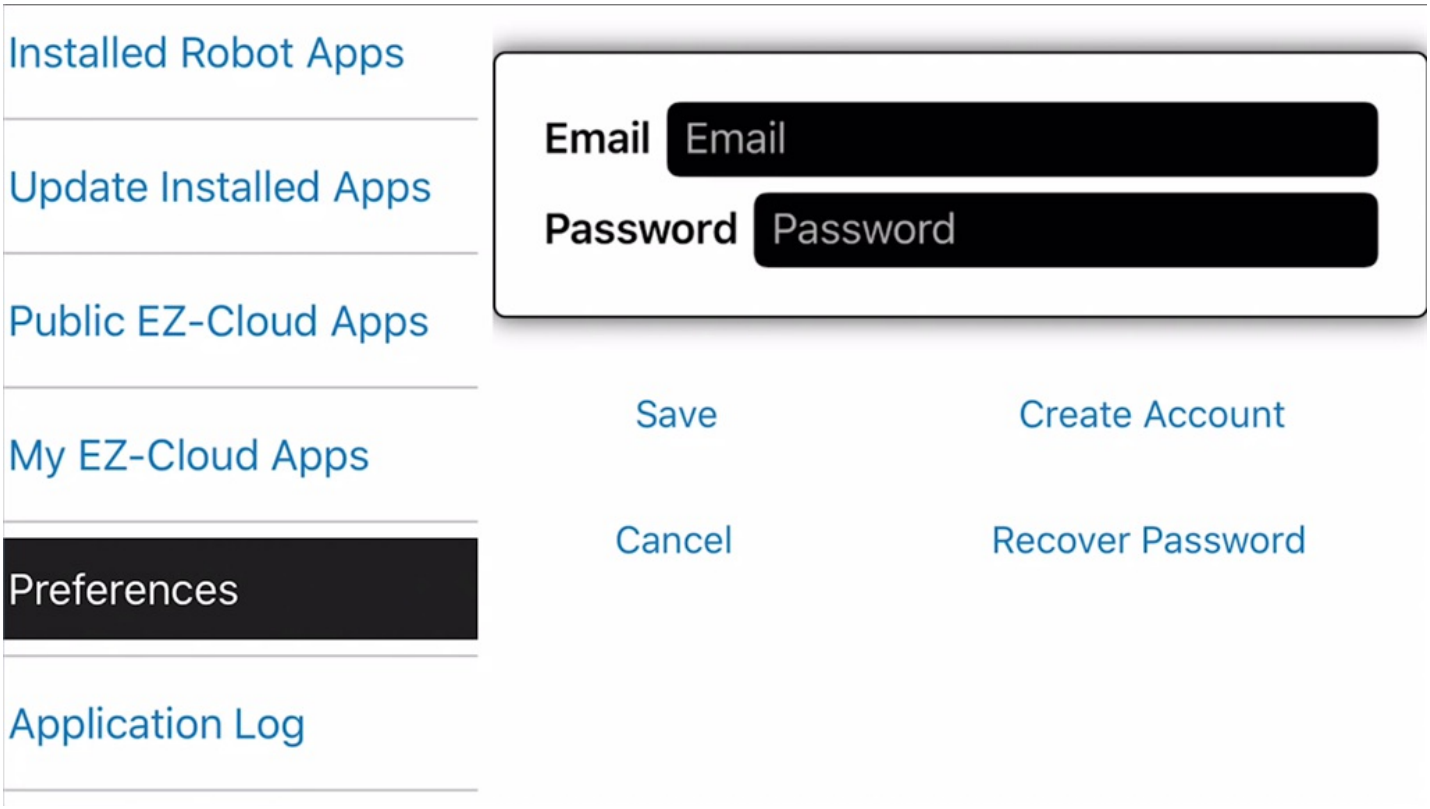
Step 3

Install and open the app. Read and accept the **Terms of Use**.



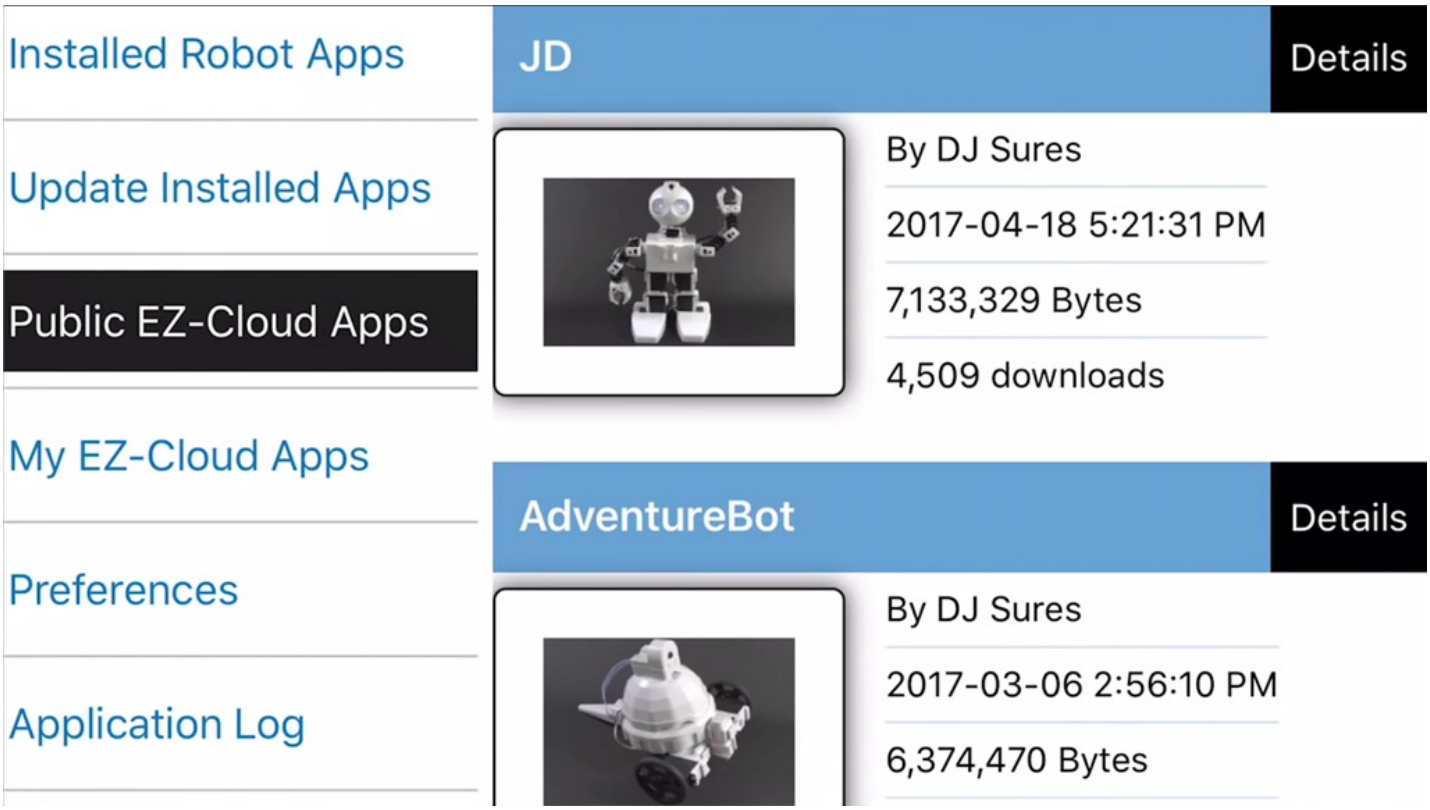
Step 4

Login or create an **EZ-Cloud** account.



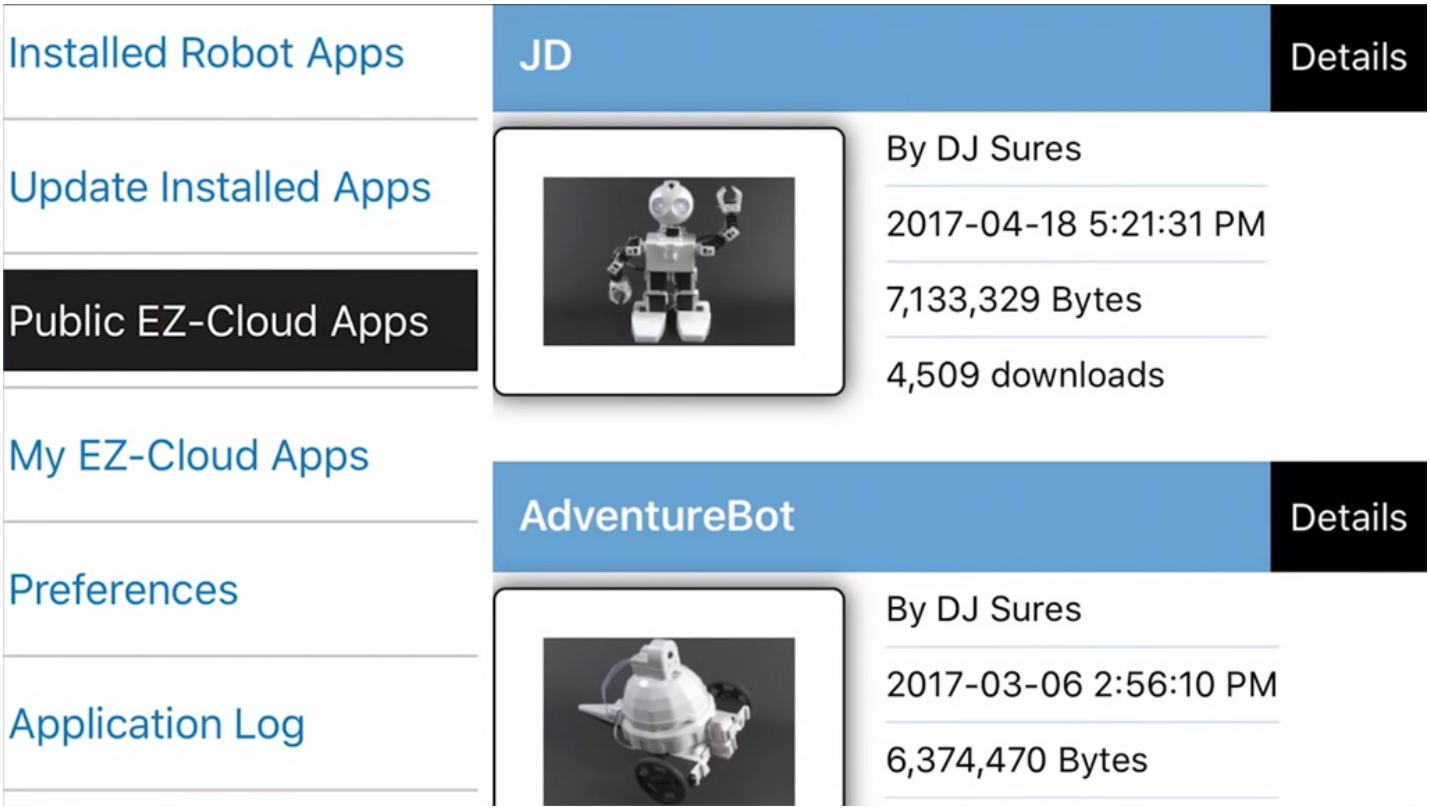
Step 5

Use **EZ-Cloud** to access example and public robot project apps. Click on **Search** to access the **EZ-Robot** certified project apps.



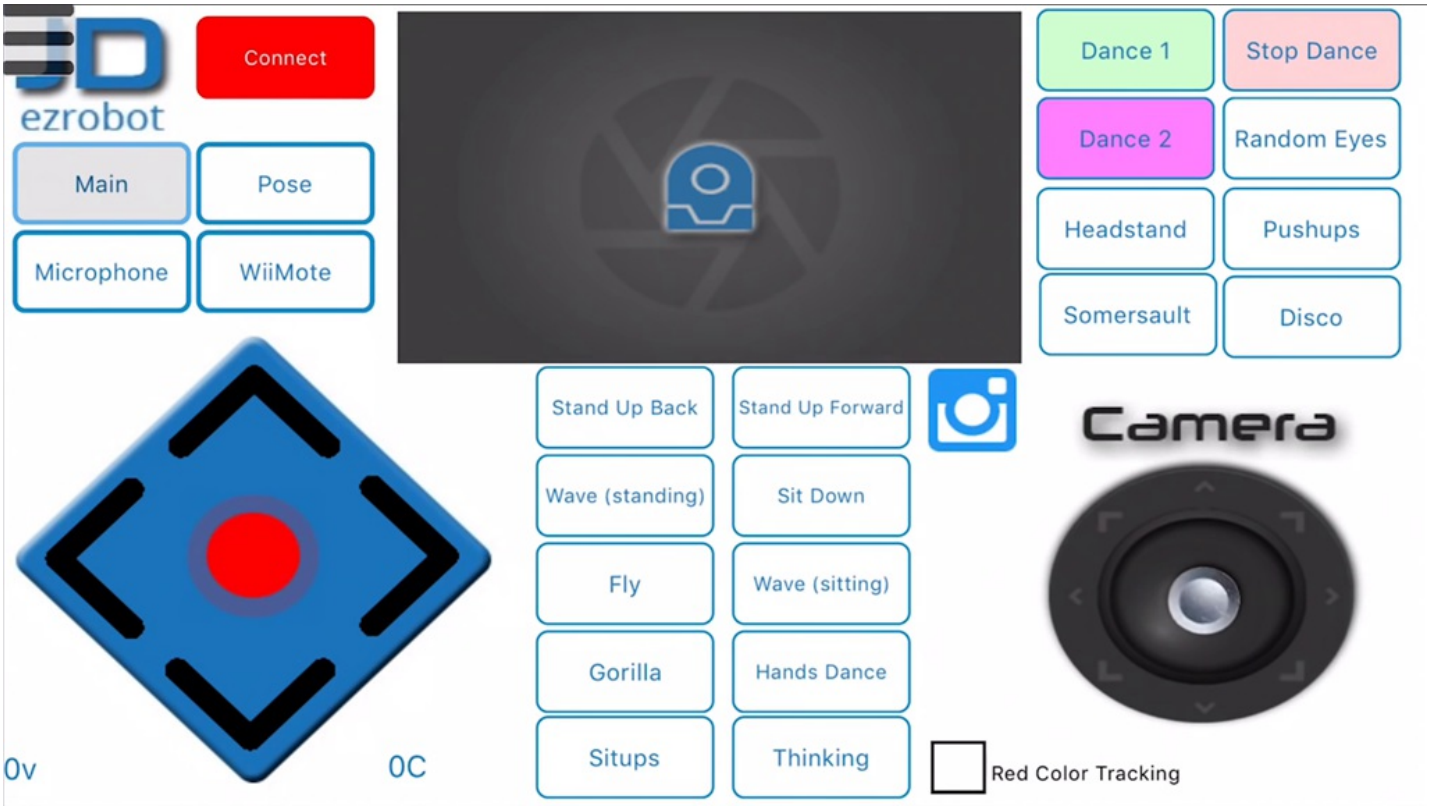
Step 6

Select the default **JD** project. Choose **Download & Install** to load the project.



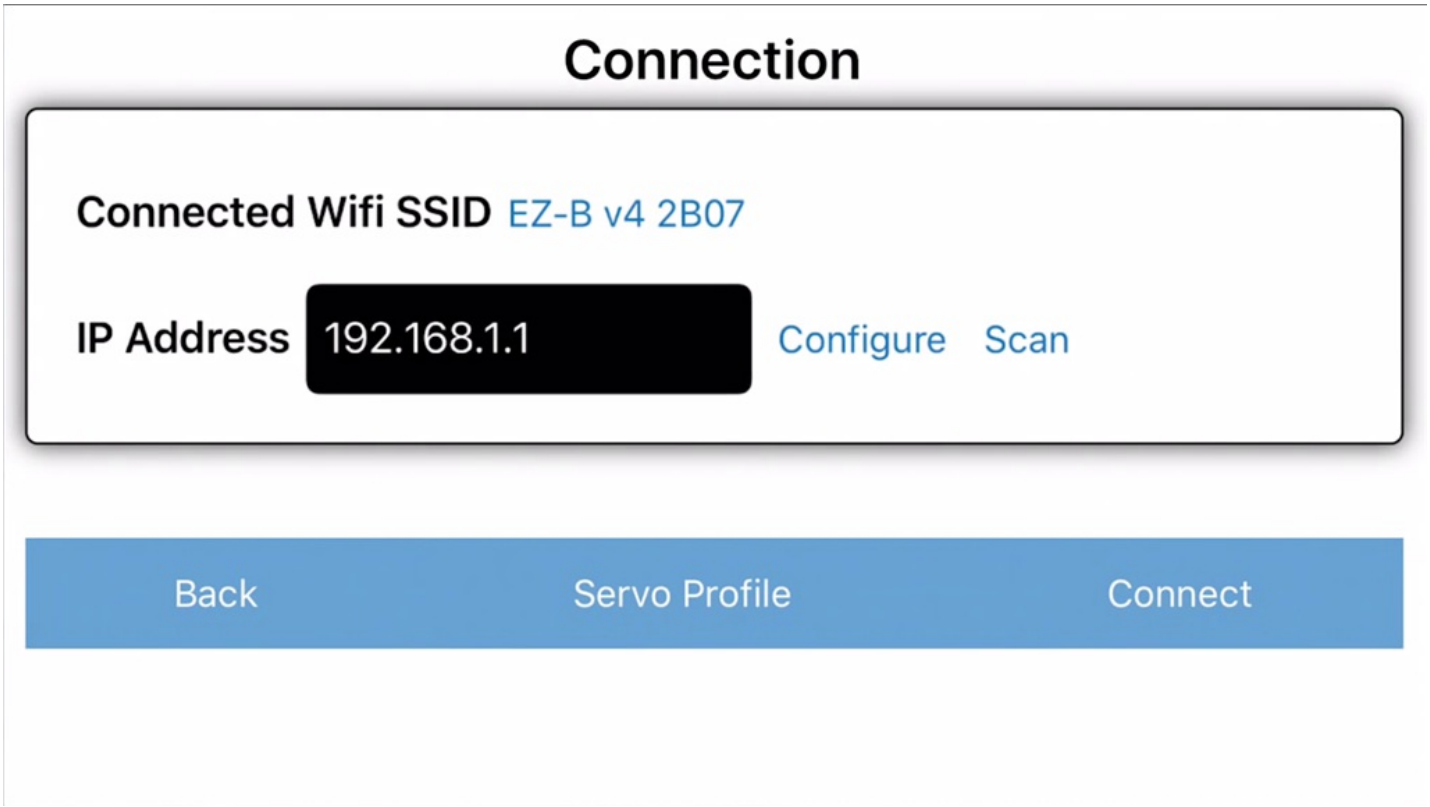
Step 7

Click on the **Connect** button. Power on the robot and lay it down on a flat surface.



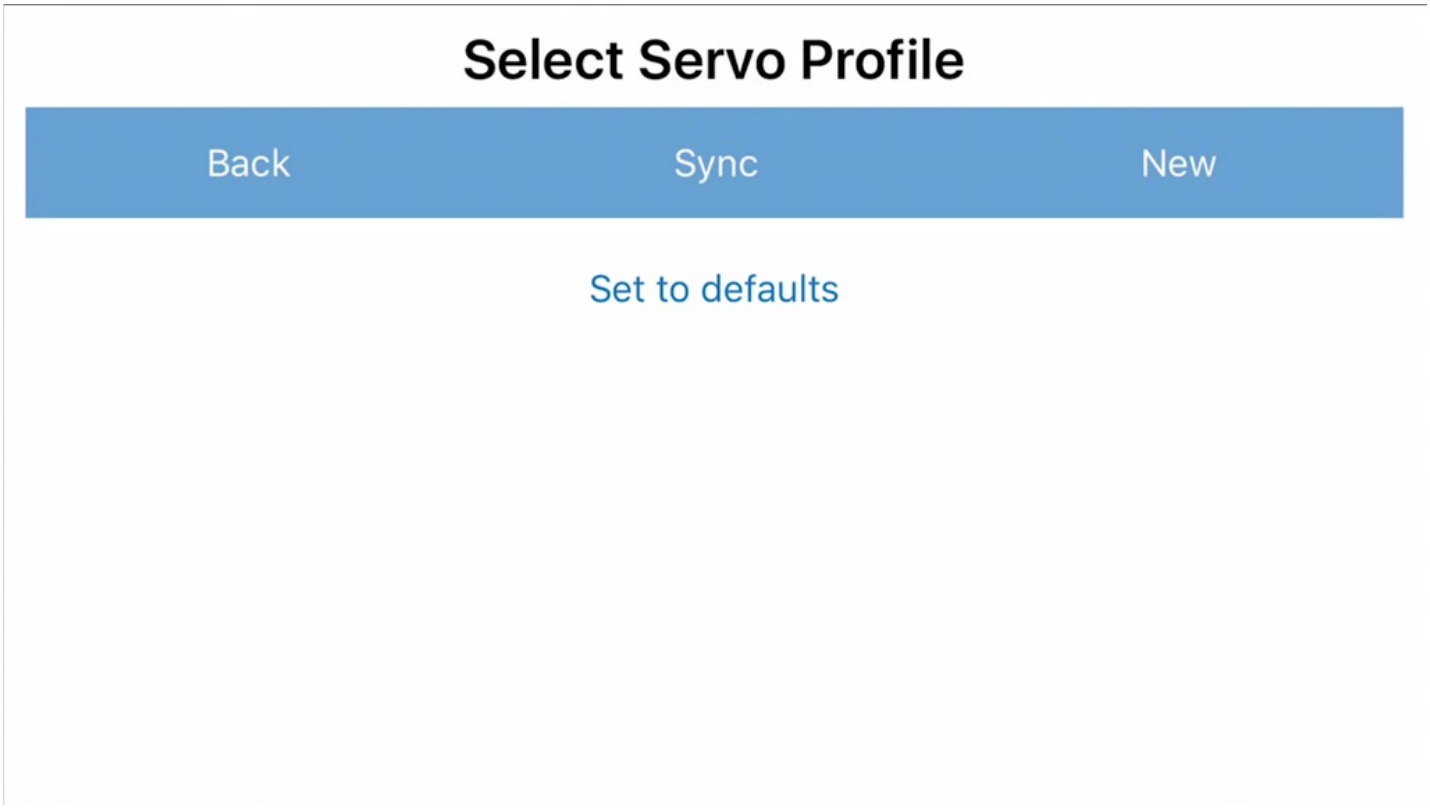
Step 8

Select the **EZ-B v4** Wi-Fi connection and click **Connect**.



Step 9

Servos may need calibration to compensate for any slight hardware discrepancies. Click on **Servo Profile** and choose **New** to create a profile.

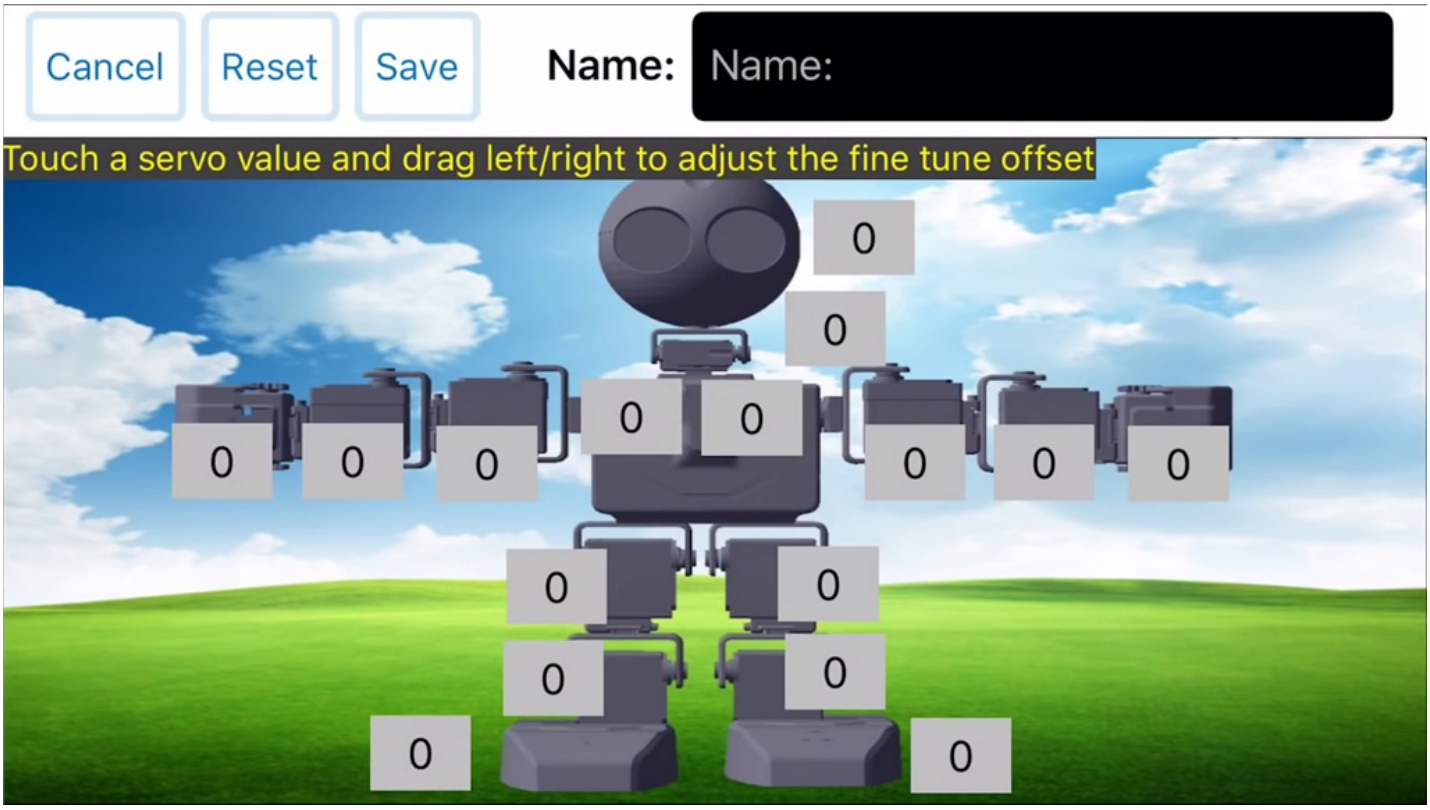


Step 10

The servos of each arm and leg should be set in a straight line.

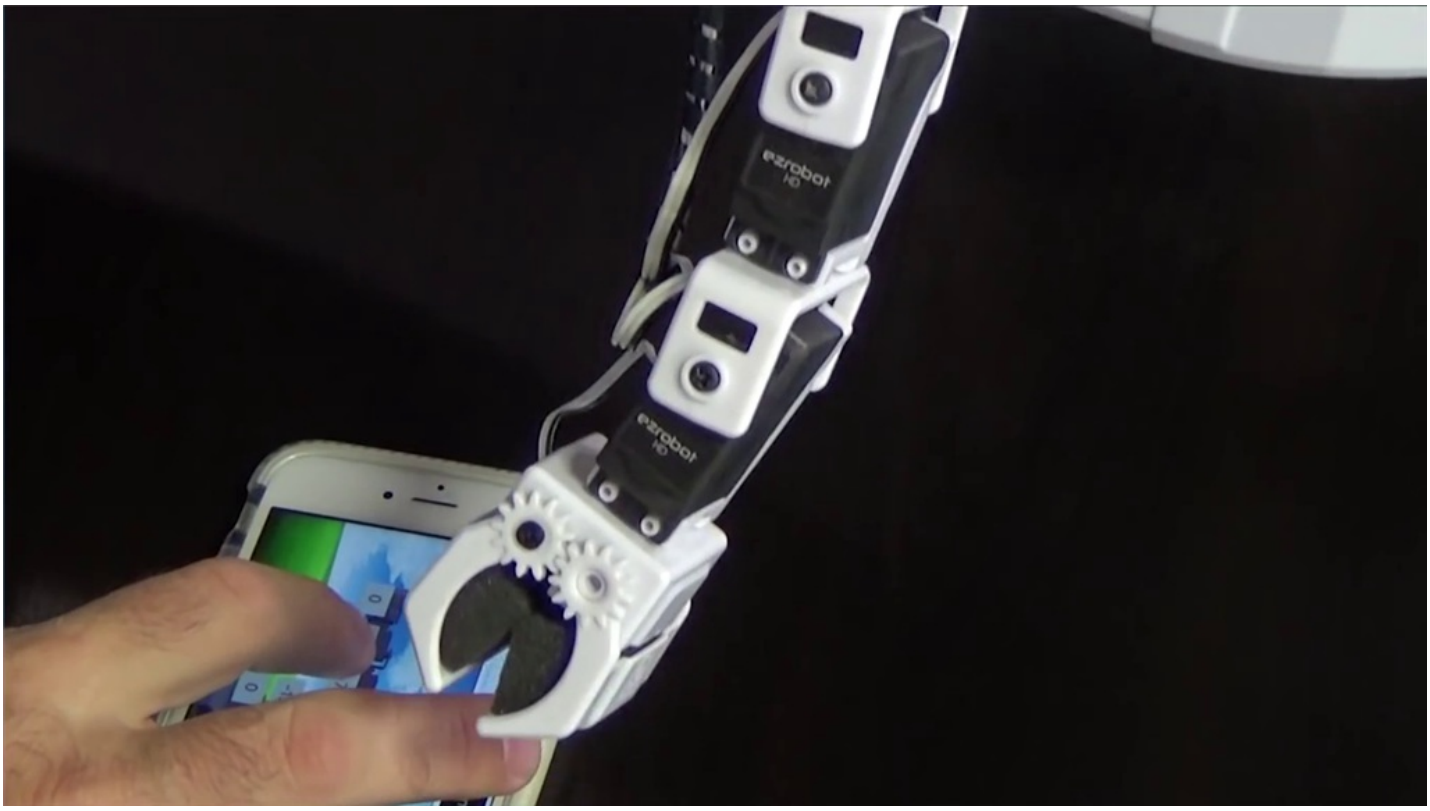
Step 11

Adjust the software servo values to line up each servo. Start with the servos closest to the body and move outwards.



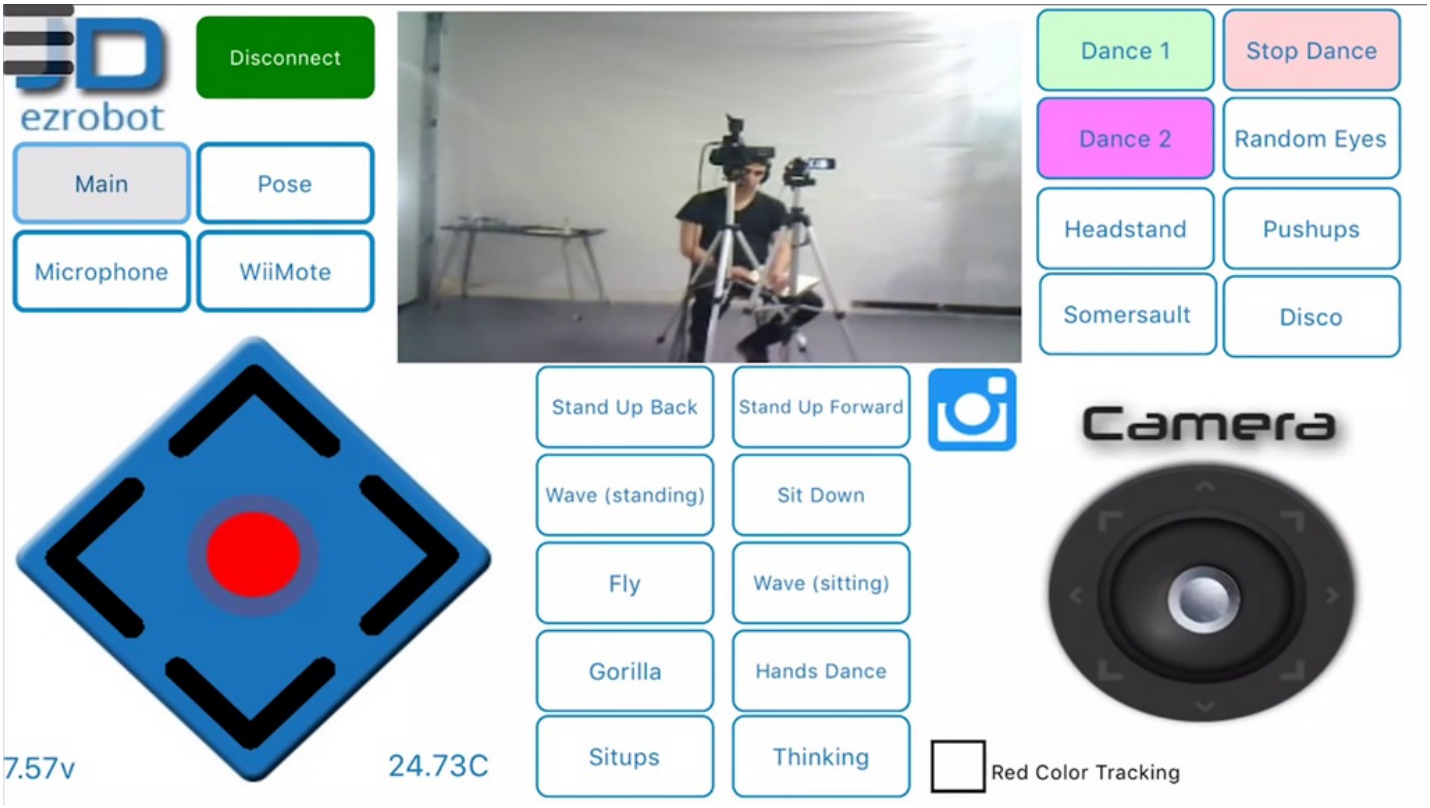
Step 12

The robot grippers should not make a vibrating or grinding noise. Adjust the gripper servos as necessary to prevent damage.



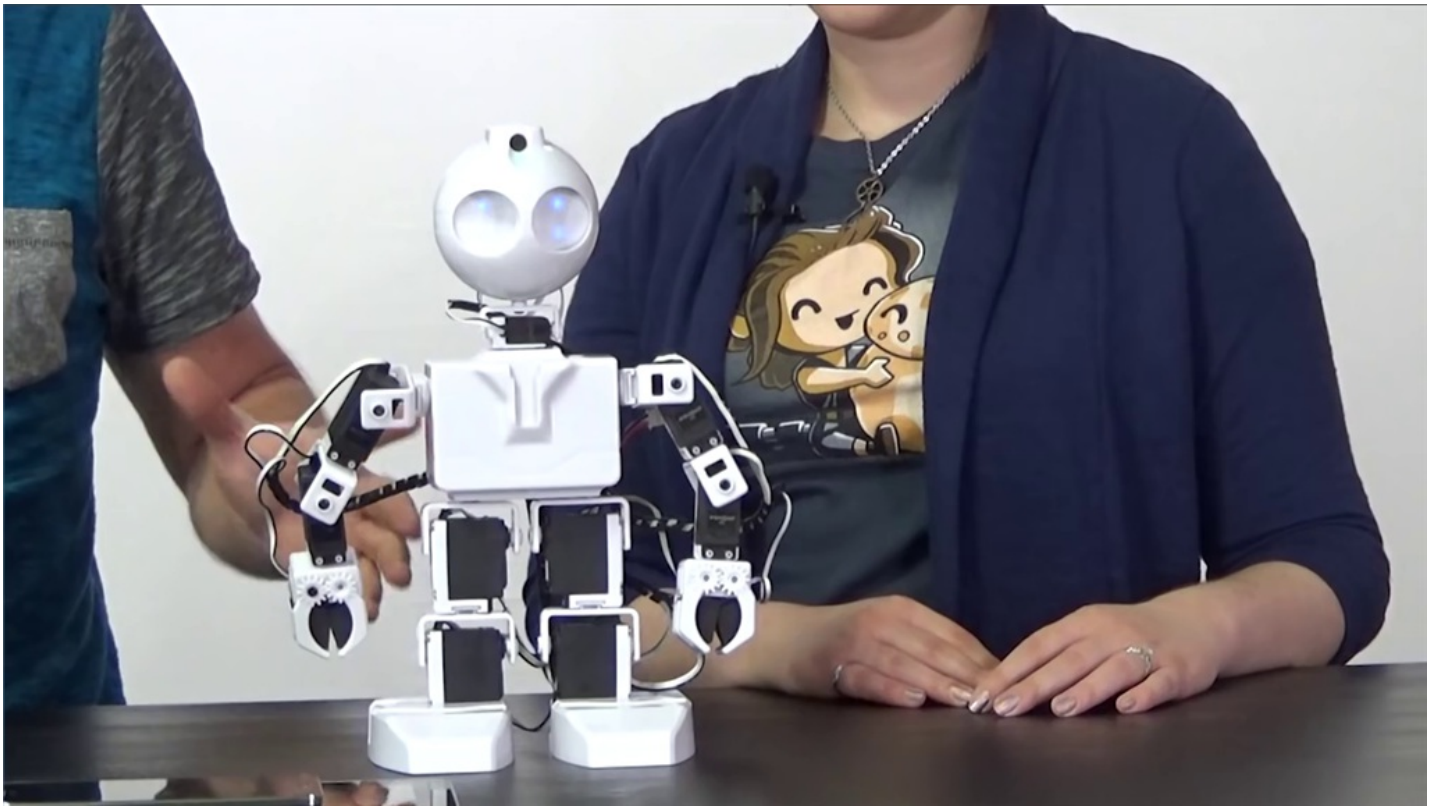
Step 13

Name the servo profile and save for future use. Return to the main screen to access pre-built actions and movement control.



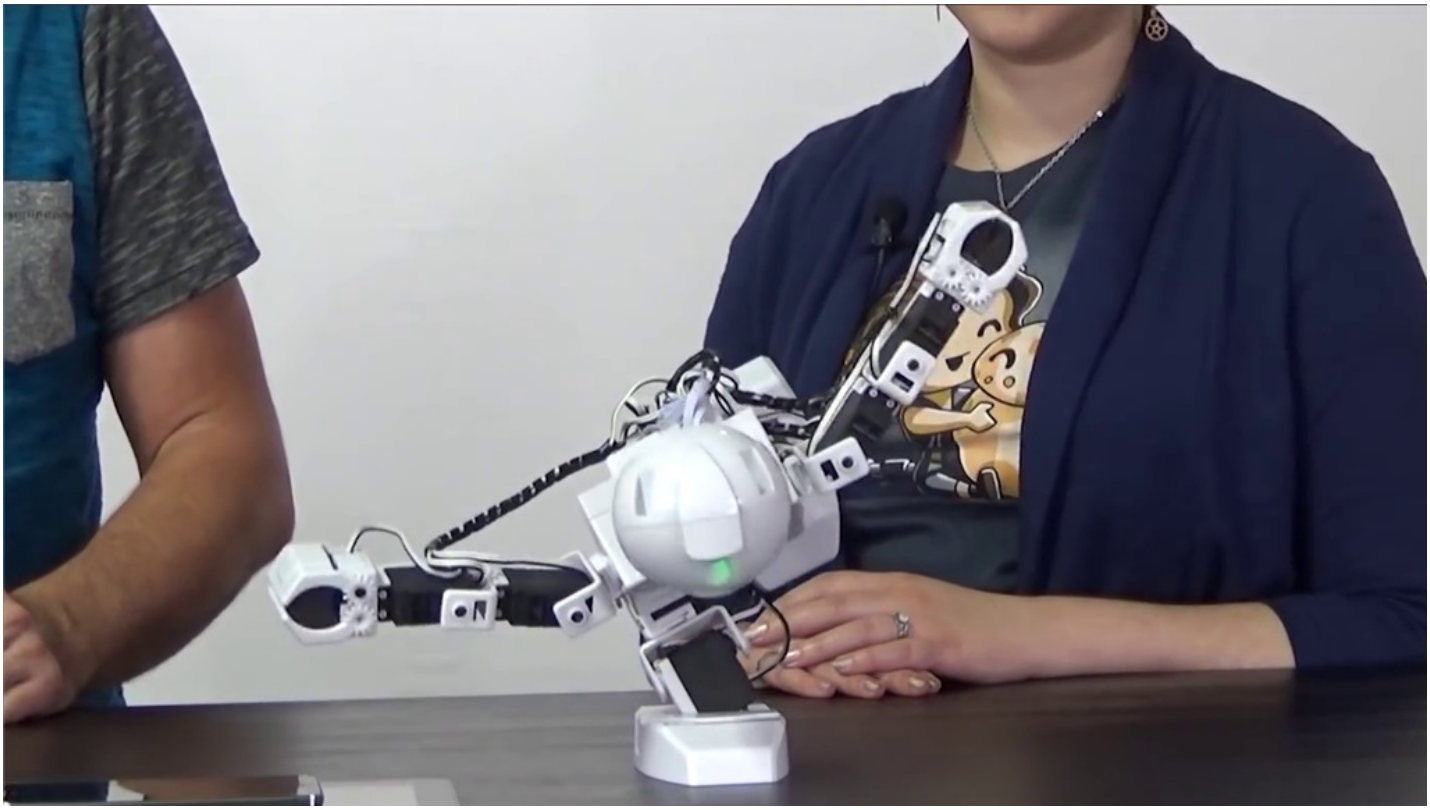
Step 14

The red stop button will return **JD** to a standing pose.



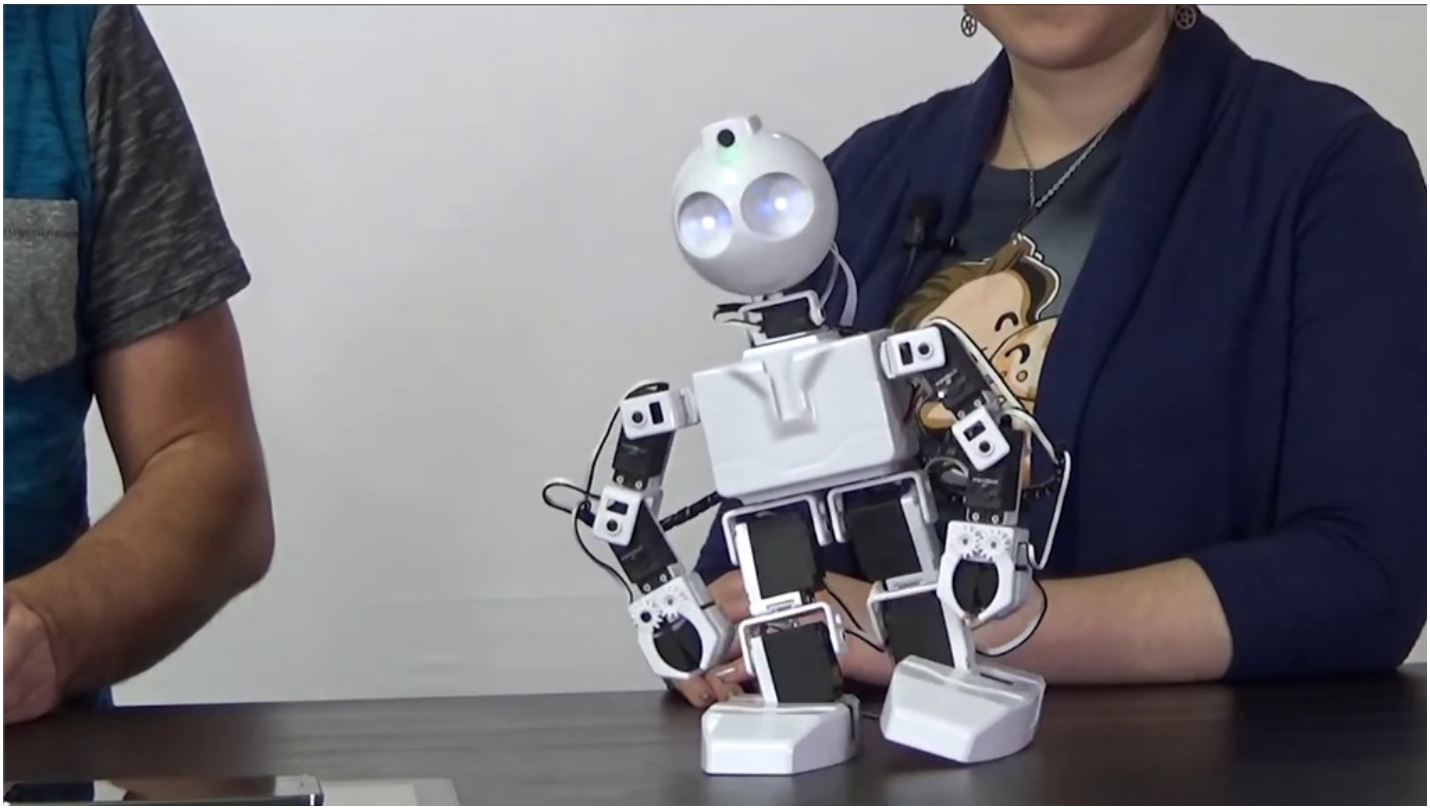
Step 15

Clicking on buttons such as **Fly** will execute pre-designed actions.



Step 16

The arrow buttons can be used for movement control.

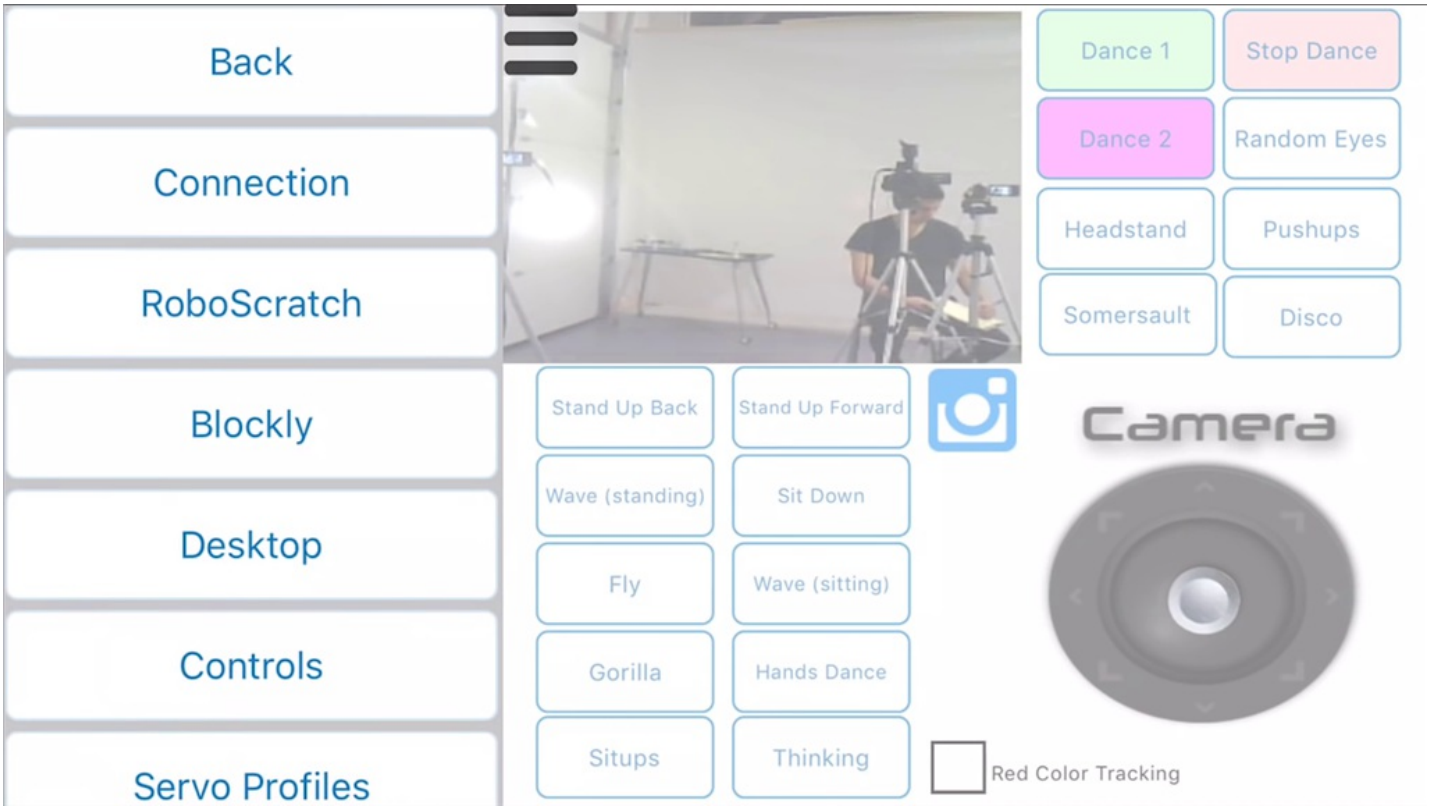


Step 17

Explore other actions such as **Headstand** or **Sit Down**. The right hand joystick can be used to move the camera by controlling the head servos. **Revolution JD** can return to standing from a forward or backwards position. The default project also includes audio control, which can be used in features such as dance actions.

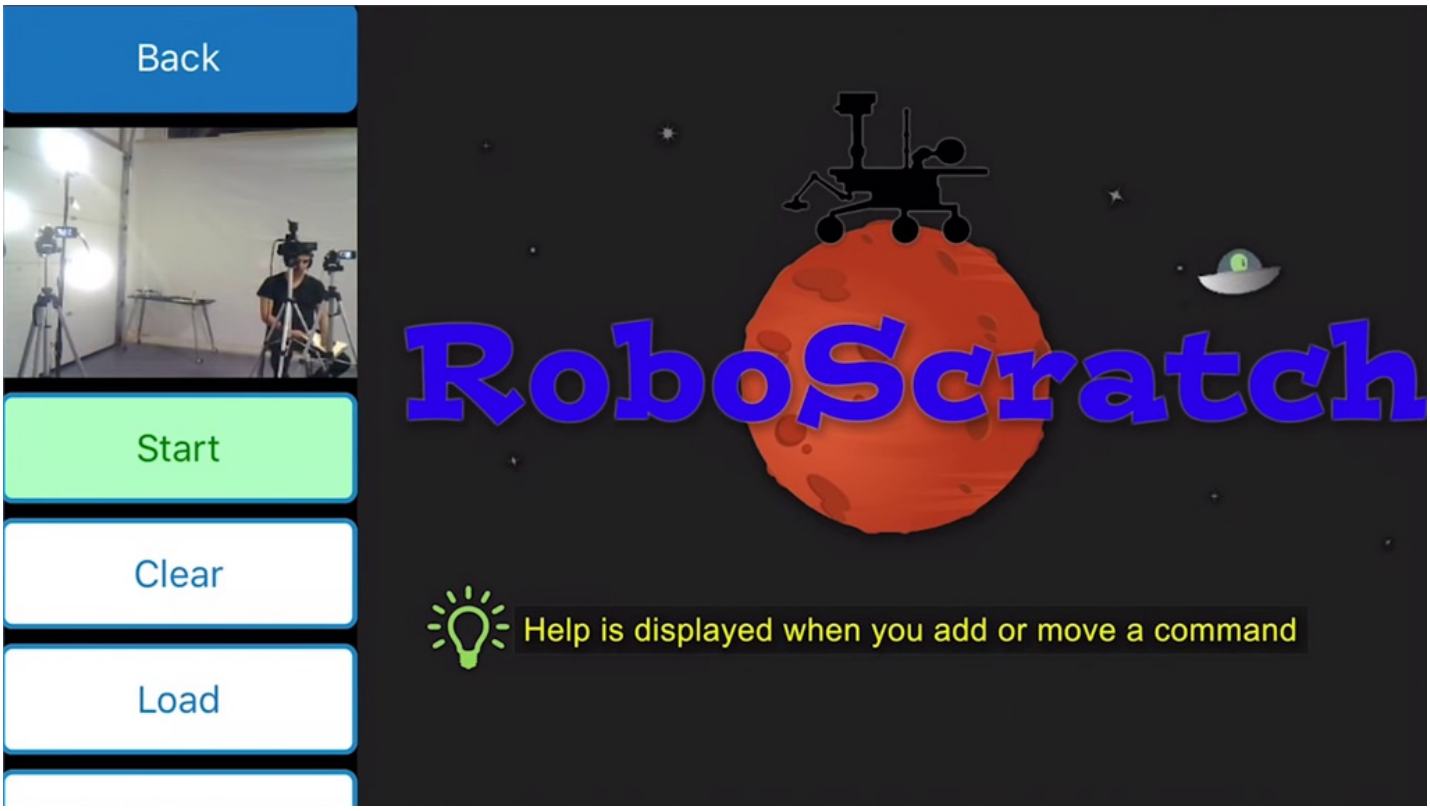
Step 18

The top-left â€œhamburgerâ€ menu icon will access other features of the app.



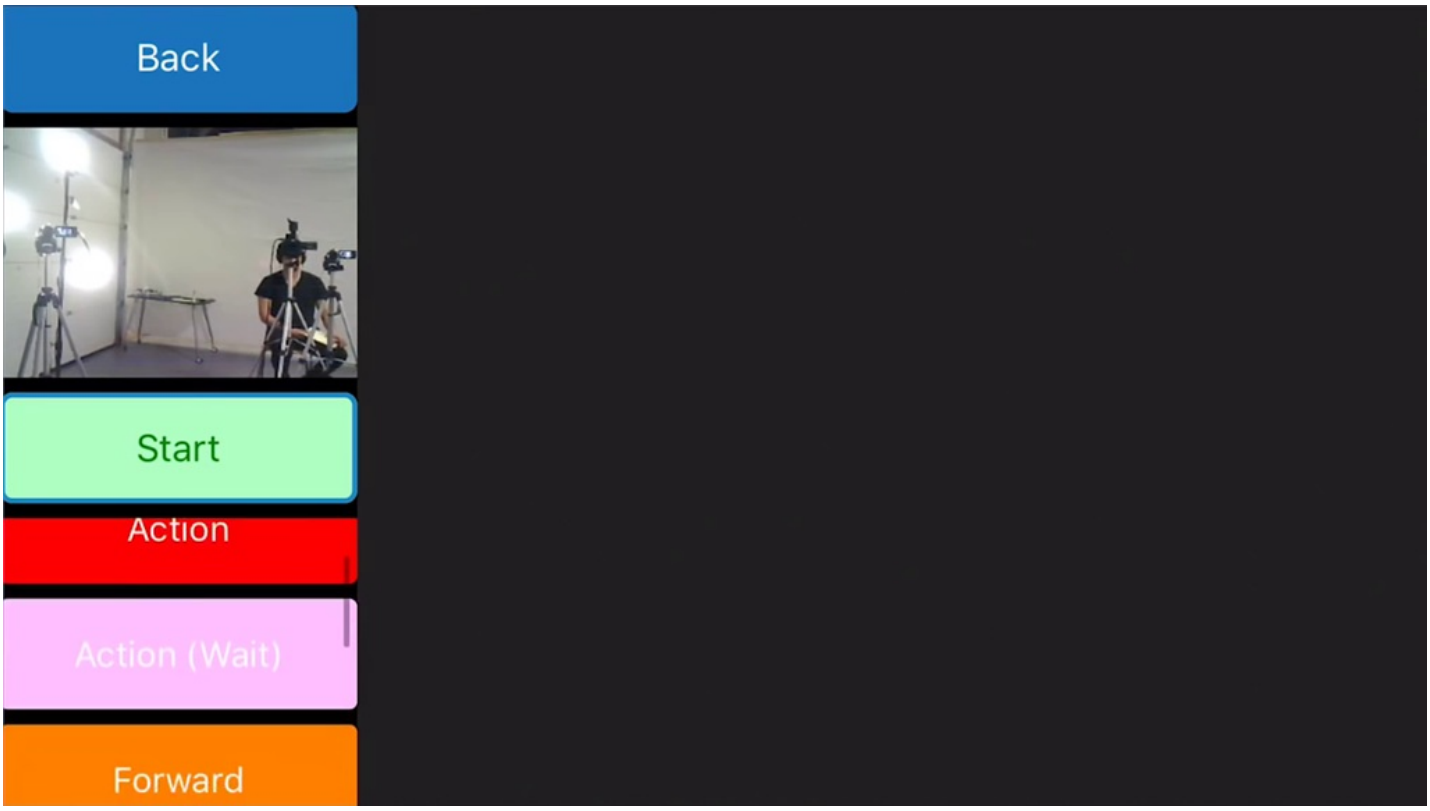
Step 19

RoboScratch or **Blockly** can be used to create custom programs. Click on **RoboScratch** to get started.



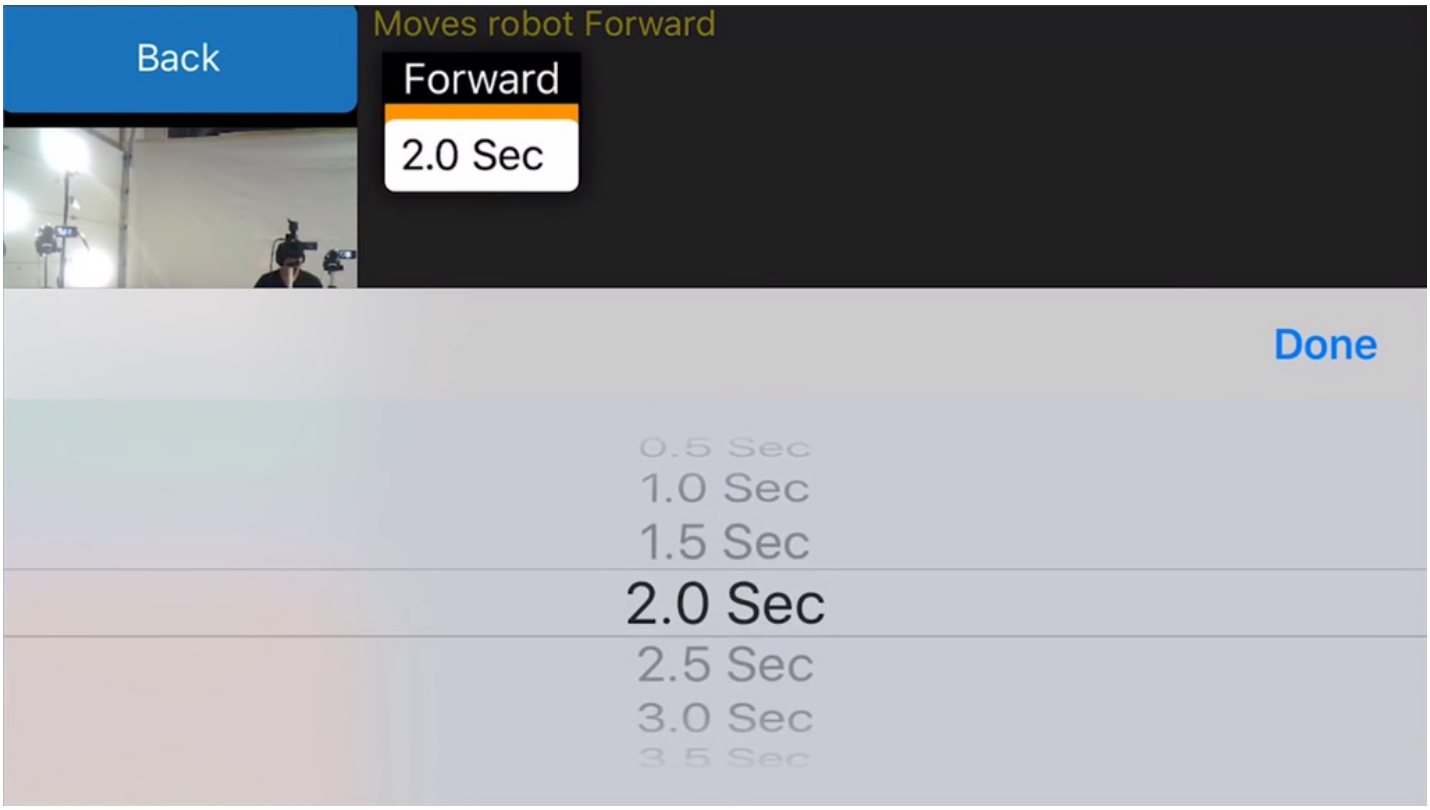
Step 20

Scroll through left-hand menu to view the available command options. Click on an action to add it to the workspace.



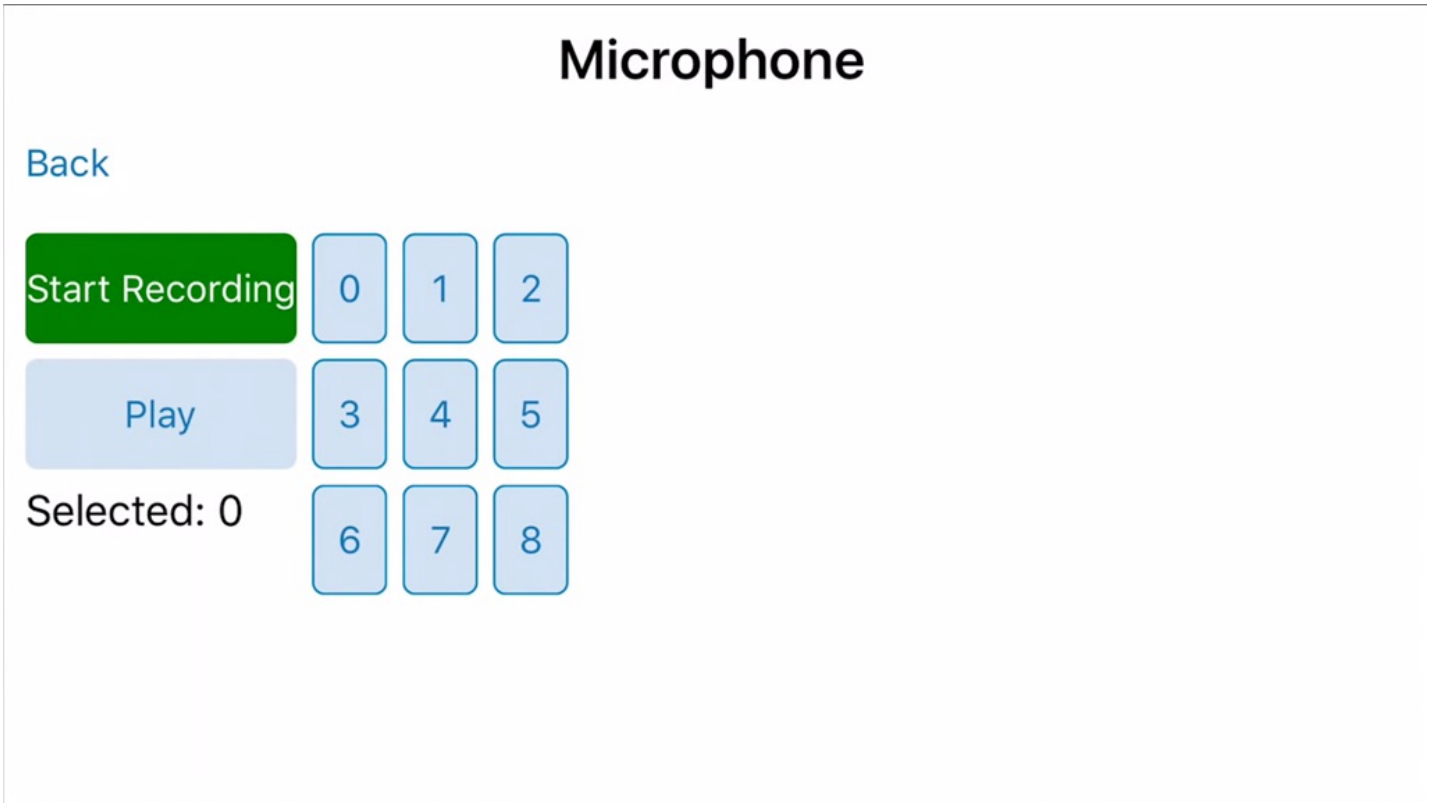
Step 21

For example, click on **Forward** to add the forward movement command. Click on the timing value and scroll to **2.0 Sec**.



Step 22

Click on **Mic** and then click on **Play**. Nine channels are available for recording. Select a channel number and click **Start Recording** to record an audio clip.



Step 23

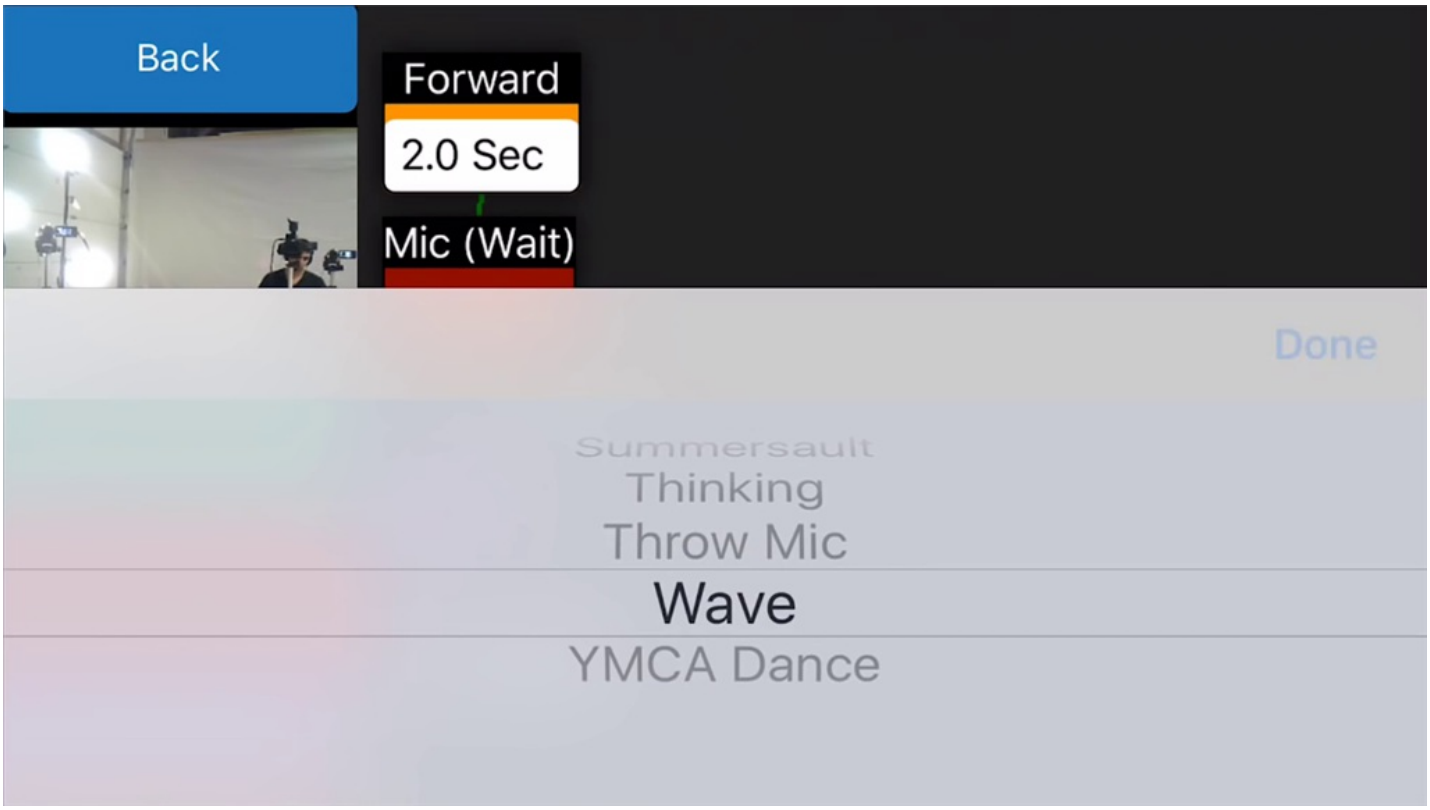
Click on **Wait For Face**. This action will wait for a face to be detected in the camera view.

Step 24

Add another **Mic** command and click on **Play**. Select a different channel number to record an audio clip that will be played once a face is detected.

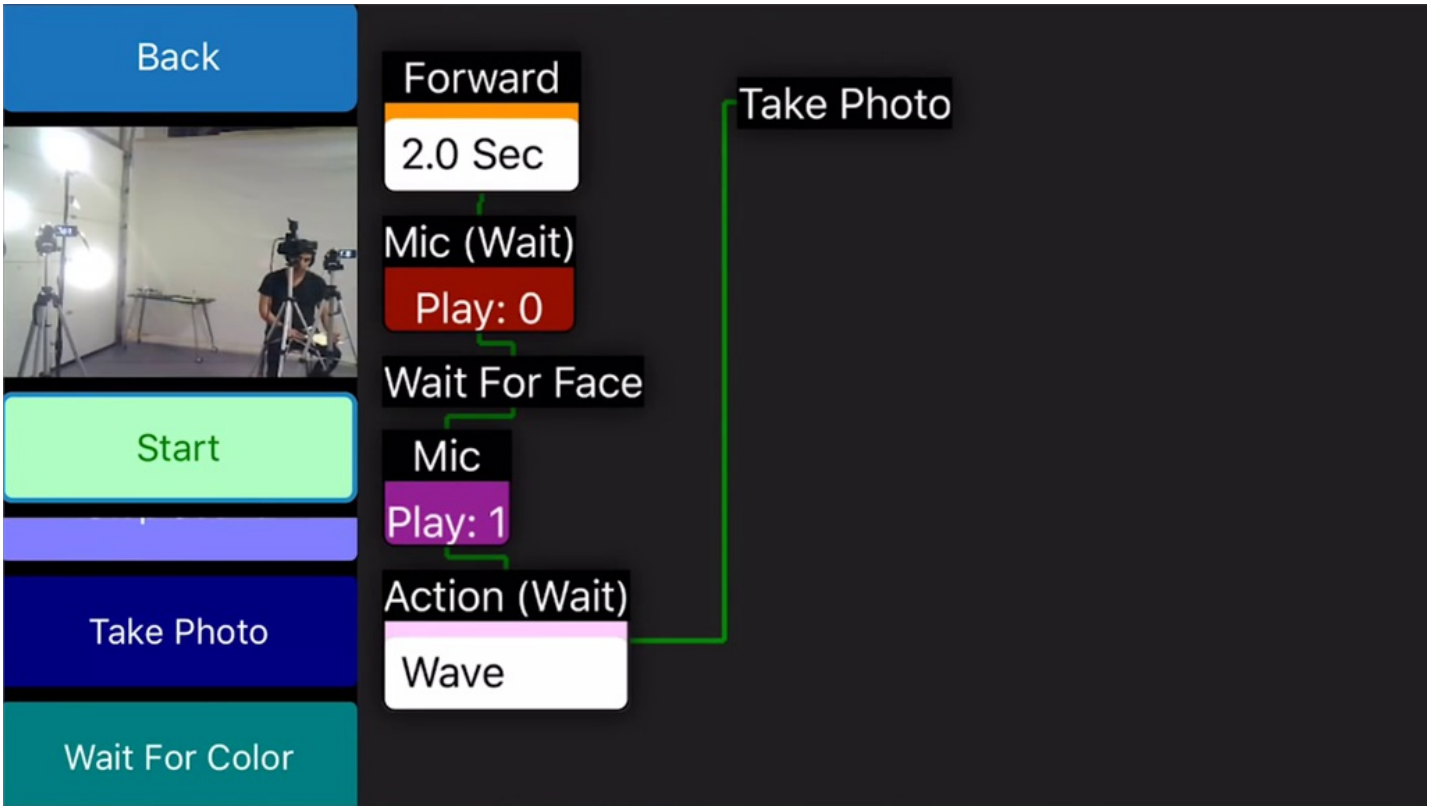
Step 25

Click on **Action (Wait)** and scroll to the **Wave** action. A b[/b] action will execute entirely before moving to the next command.



Step 26

Click on **Take Photo** to capture a photo of the camera view.



Step 27

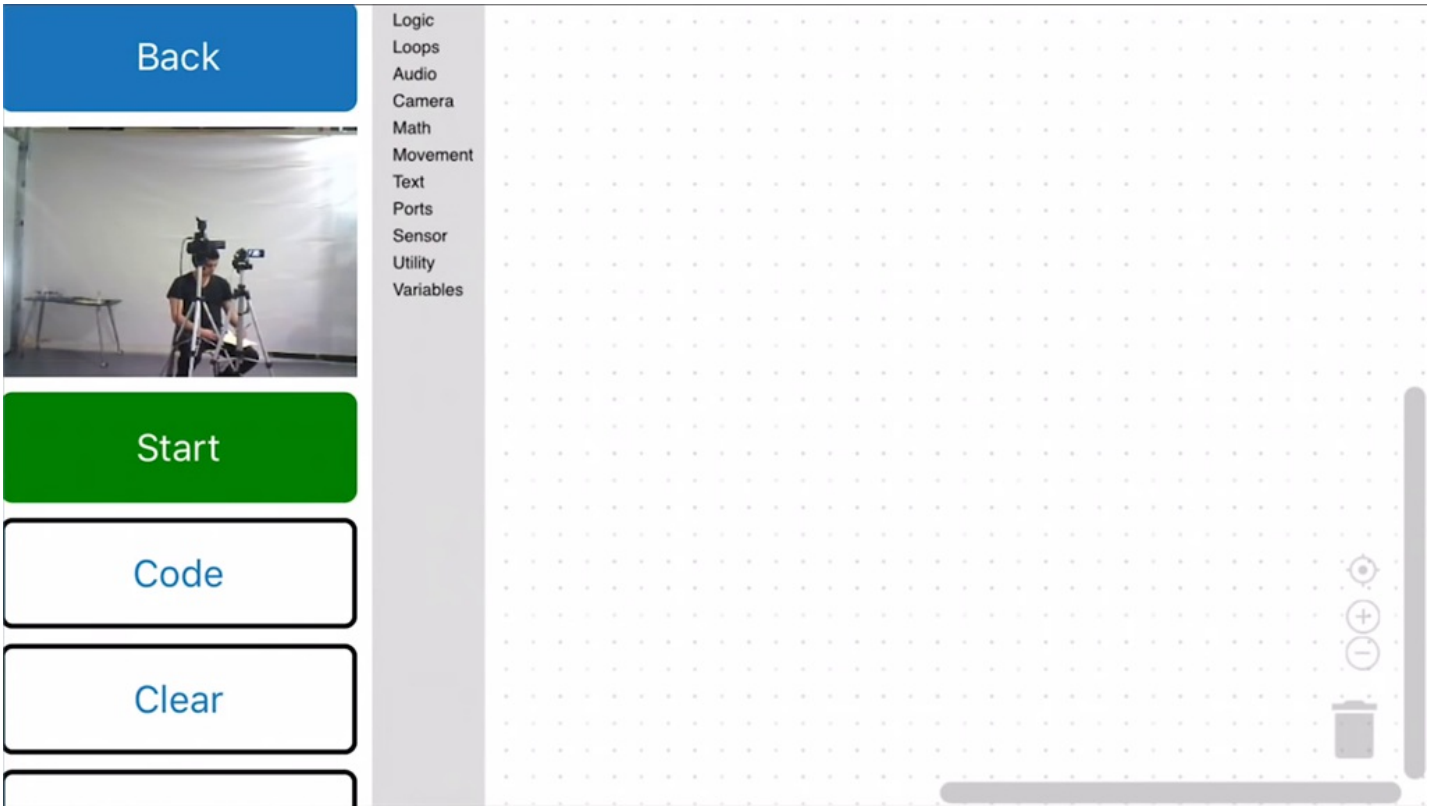
This code will make the robot walk forward for two seconds, play an audio clip, wait for a face to be detected, and then play another audio clip while waving. When the waving is complete, the robot will take a photo. Click on the **Start** button to execute the code. Follow the highlighting and the green line to view the execution progress.

Step 28

Click on **Save** and name the project for future use. The captured photos will be stored directly to the device.

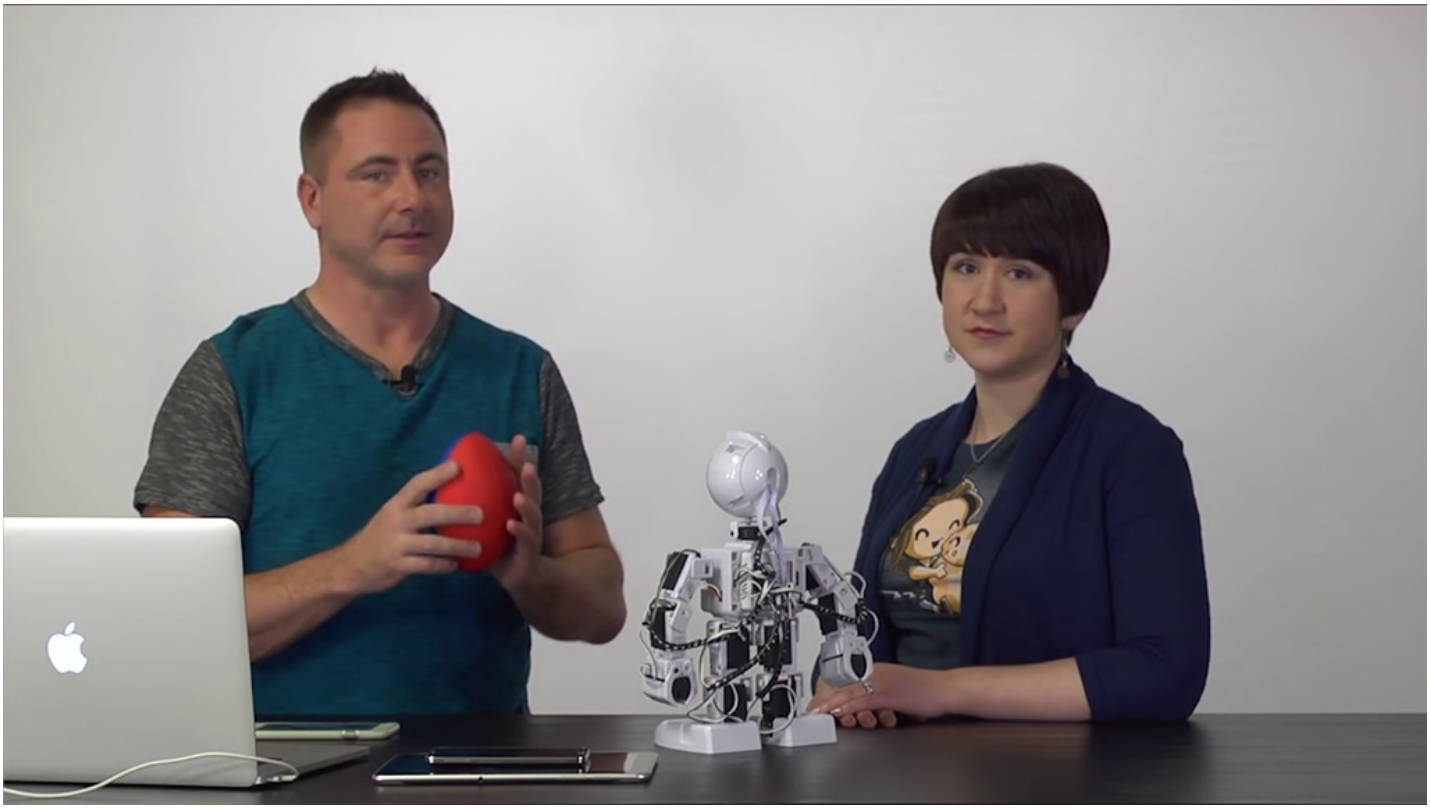
Step 29

Blockly can be used to create a more complicated custom program.



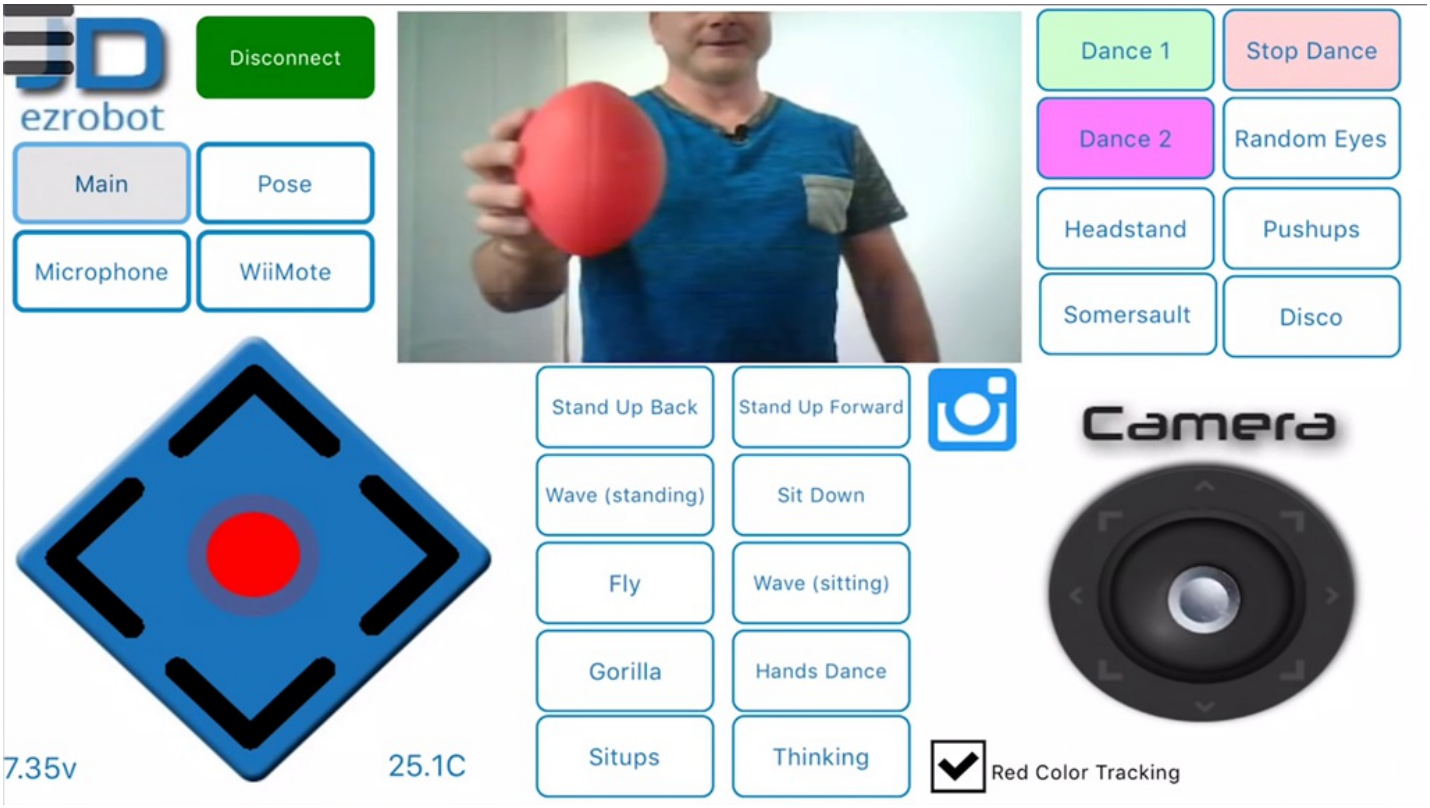
Step 30

The default **JD** project app includes color tracking. The default color for tracking is red. Choose a red object and hold it against a contrasting background. Color tracking works best when the light source is not directly behind the robot.



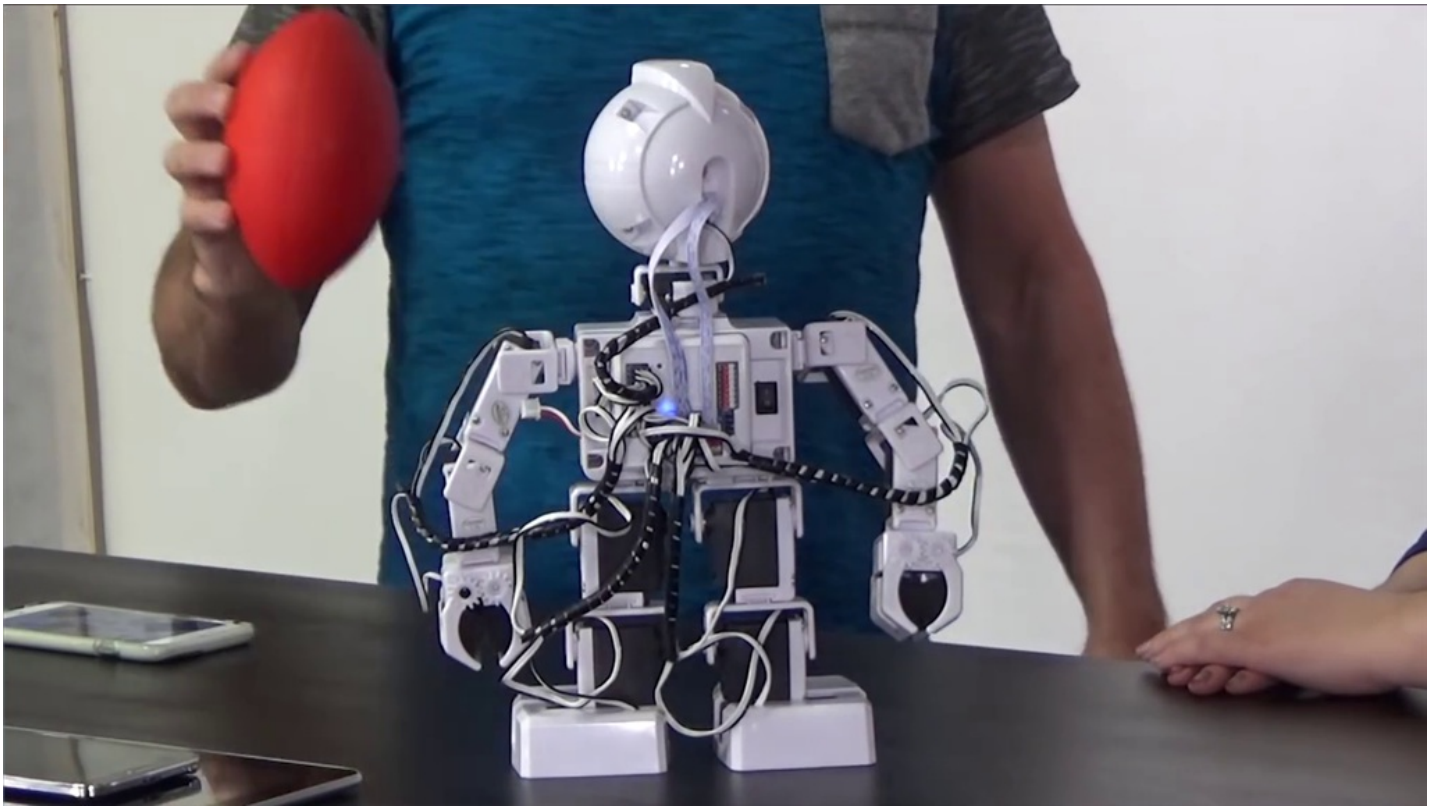
Step 31

Select the **Red Color Tracking** checkbox. The robotâ€™s head will follow the movements of the object.



Step 32

Keep exploring all of the mobile app features.



Quiz

Question #1 What is the purpose of a servo profile?

Question #2 How does the mobile app connect to a robot?

Question #3 What two programming workspaces can be accessed via the "hamburger" menu button?

View the answers to this quiz at www.ez-robot.com/Tutorials/Lesson/55.

Visit www.TheRobotProgram.com for more episodes.