



### Here is how to make JD respond to a visual object:

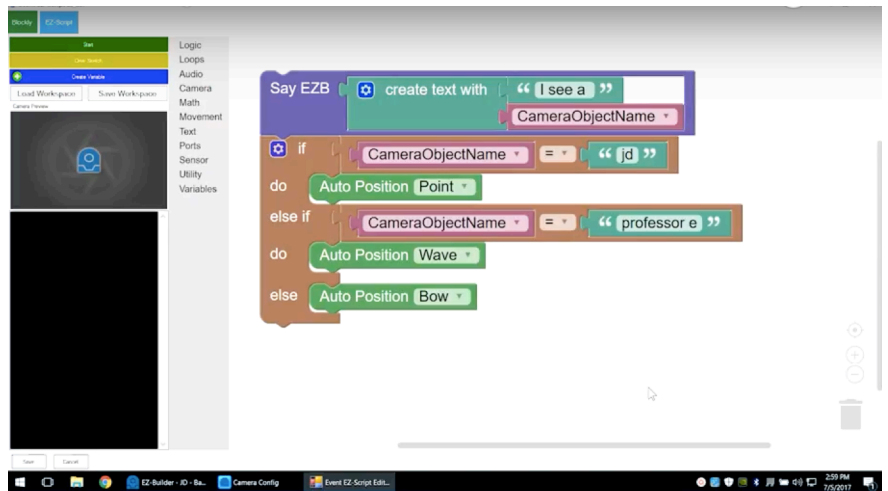
1. Find an object you would like to make JD recognize to. From file menu, choose new project and select JD – Bare.
2. Skip over the lessons
3. Sync servo profile
4. Under “Auto Position”, select “Stand from Sit” and then “execute”.
5. Under the Project tab, click on the “Add” button
6. Find the “Camera” and click on “camera device”
  - a. Click the “start” button
  - b. Select the “Object” tab
    - i. Click on “train new object”
7. Locate the object you would like to train
8. Label the object in the EZ Builder software
  - a. Place the object in the center of the screen and practice moving it around a bit
  - b. Once you have this down, click on the “learn” button and move the object around so JD can learn the object
    - i. Watch the progress bar progress
    - ii. Once JD is done learning, hit “Done”
    - iii. The object will appear in the screen – JD has learnt the object
9. Click on the “tracking” tab and select “object”
  - a. Place your object in front of JD
    - i. Remember, if JD cannot track the object, you can click on “learn by tracking” to make JD learn more
10. We now are going to make the robot speak and say what it is he saw
  - a. Click on the “gear” icon in the “camera” control
  - b. Select “scripts”
  - c. Click on the pencil icon beside the “tracking start”
  - d. Use Blockly to create your script
    - i. Under “Audio” choose “Say EZB”
    - ii. Under “Text” add “Create text with” – we are going to add 2 items!
      1. Add the desired text, such as “I see”
      2. Under “Variable”, add “item” and then from the dropdown menu, choose “CameraObjectName”
      3. Push save (twice)
11. Now try!
12. Show your teacher when done

## Explore...

Your turn, now train JD to see your face and at least one other object or person. Remember, now that you have created the script, all of the hard work is done. Now you just have to label your face and train JD to it.

Now, add a different action to each object you have trained. Remember, you do this by going back into the Blockly

- Under the “Logic” tab, choose the “If - Do” condition
- To add more commands for the number of people/objects you have trained, click on the gear and add in as many “else if” and “else” as needed
- Add in a “comparison” and add “variable”. Then, choose “camera object name” and then add a “text” box and type the name of the variable
- Under “Do”, choose the movement you want JD to complete for that face/object
- Remember, the last “Else” will be for any other face/object JD recognizes



Once complete, please show your teacher.

Here is how to make JD respond to a visual object:

- **Train object recognition using machine learning**
- **Connect and load bare project**
- **Add camera device control**
- **Object tab to Train New Object**
- **Name the chosen object**
- **Click on the screen to center the object**
- **Practice rotating the object to provide multiple angles**

- **Pink square will indicate learning**
- **Blue square will indicate tracking**
- **Enable Object checkbox under the Tracking tab**
- **Create a Blockly script to speak the object name**
- **Tracking Start script will execute when object is detected**
- **Add Say EZB to append variable with text**
- **Text information is stored as a string**

- **Leave a space after the text to separate the object name**
- **Object name is stored in CameraObjectName variable**
- **Variable updates with latest detected object name**
- **Use if/else and comparison logic to create different decisions**

- **If a comparison is true, code underneath will execute**
- **If none are true, final else statement code will be executed**
- **Right-click to duplicate code segments**
- **Tracking value will indicate when an object is being tracked**
- **Teach multiple objects and faces**

# Professor E's Quiz

- 1) Why are objects rotated while the robot is learning?**
- 2) What does the pink-colored square signify?**
- 3) Which variable stores the name of the last recognized object?**

Answer 1:

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Answer 2:

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Answer 3:

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