Project Name: Trashcan for lazy people

Group 2 - Members

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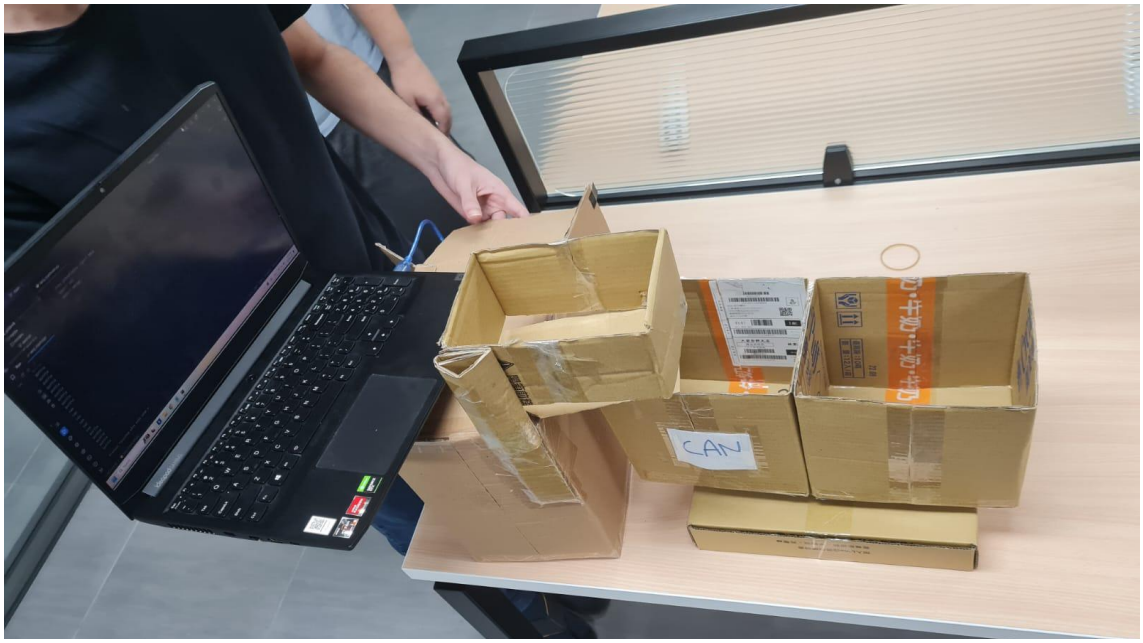


Project Description: This project utilizes the Wio Terminal to classify between cans and plastic bottles, to properly separate into different bins

Function Description:

- The main idea is to create a trash-can that can detect and distinguish between a can and a bottle, to then throw it in the correct bin
- **Input:** Trash inserted
- **Output:** Classificated trash. One bin is exclusive for can, and another is for plastic bottles
- **How the system works:** -For Final presentation, Arduino and YOLOv8 are used in conjunction to classify the trash inserted. When trash is inserted, the camera send information about what it sees, the model in arduino is trained to determine the trash category, once the trash kind is determined, the mechanism of the base rotation rotates until desired bin is reached, once it is reached, the mechanism opens the door to release the trash into the selected bin, then the door is closed

Hardware Used:

- Arduino Uno
- 2 ServoMotors (MG 996R)
- Notebook Camera
- Breadboard

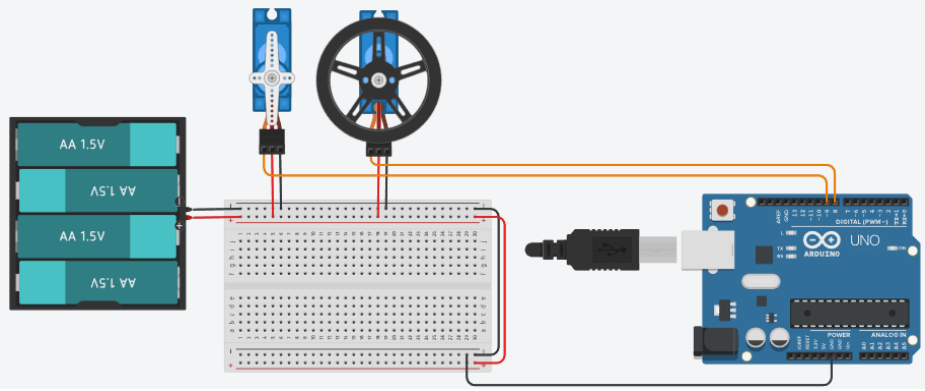
Software Used:

- Arduino IDE
- Roboflow YOLOv8

Improvements from midterm demo:

- Object recognition was implemented, so now the system could recognize the trash category
- Fixed a major bug where the door could not open for a specific trash bin

Circuit:



Reference:

https://studio.edgeimpulse.com/public/101197/latest
https://www.youtube.com/watch?v=0MHEp5FsbOM