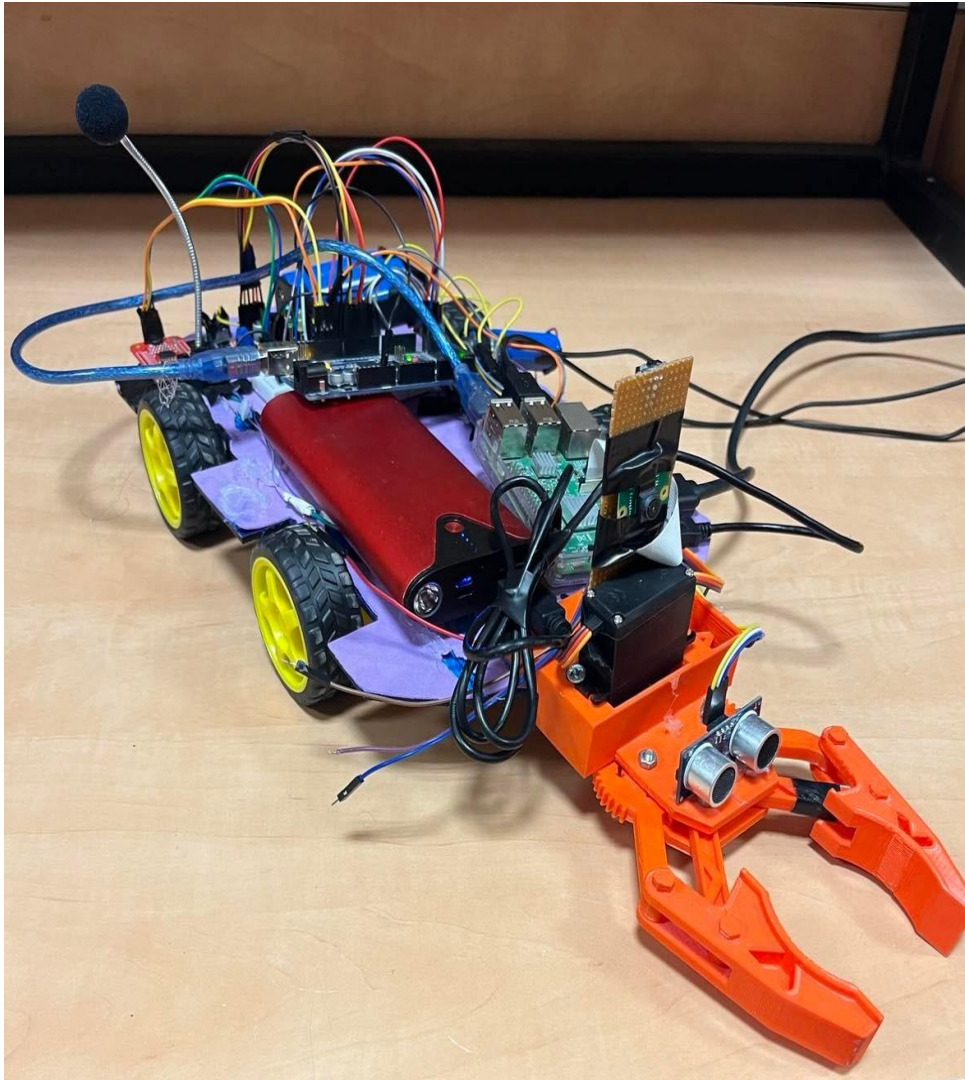
PlayRoom Organizer Robot



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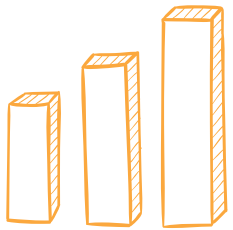

Our Team

Masa Koni

Mai Fahed

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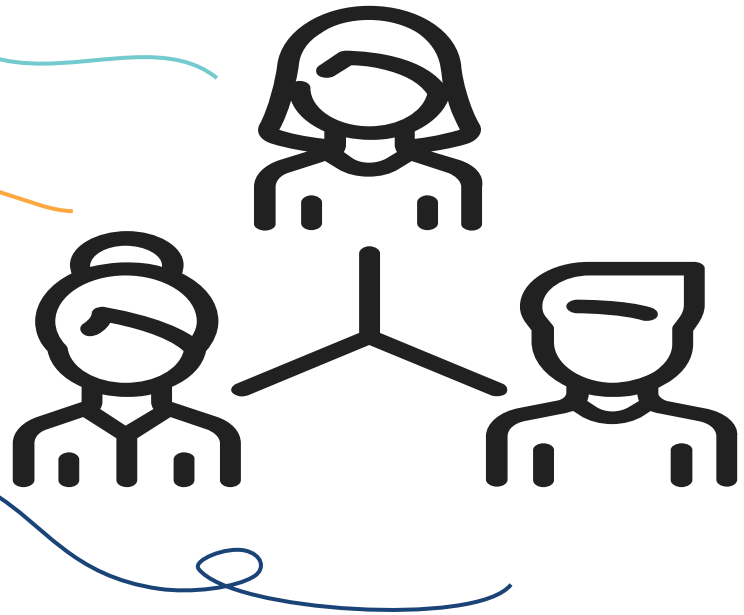


Motivation

The PlayRoom Organizer was suggested to organize toys in different piles. It will save the cleaning time; help teach kids about colors and give the parents more time to do other activities with their children.

Project Details

The robot will have three main modes in which it can operate in:

Automatic

The robot will search for balls, no matter what color it is, pick it up and let the user decide the destination

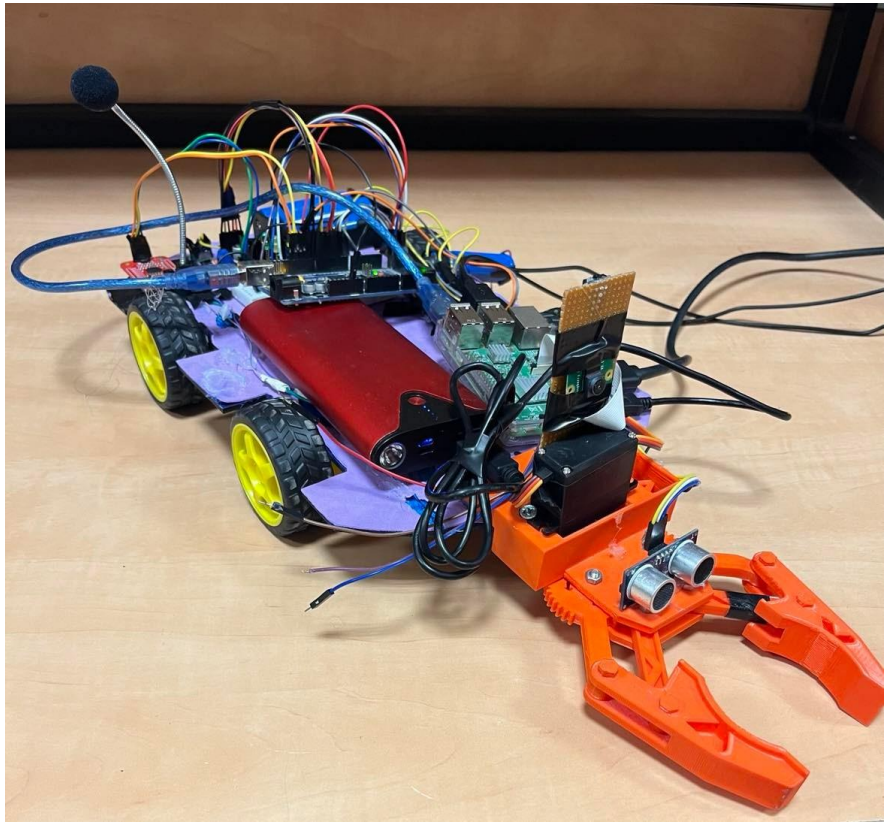
Hand Gesture

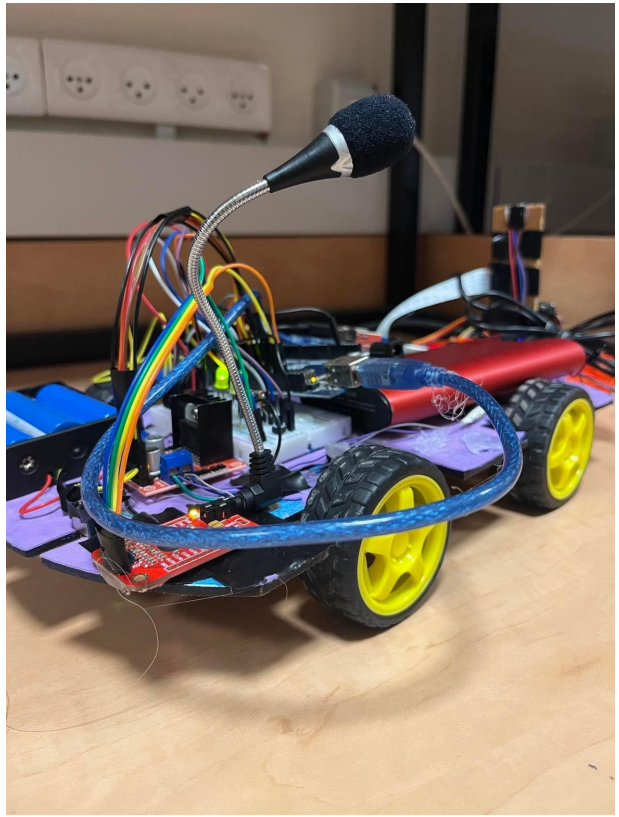
The user will control the path of the robot and pick any object he wants.

Voice Recognition

The user will say what color he wants and the robot will find balls with this color.

Project Details Cont.





Hardware Structure

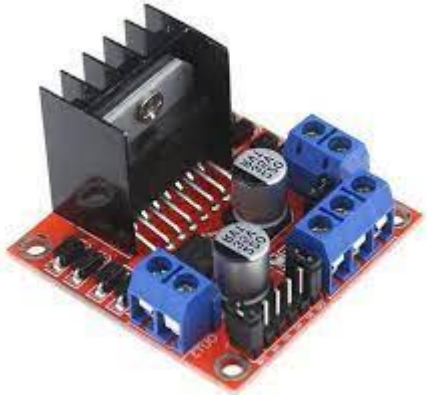
- Car Structure
- include <Servo.h>

Ultrasonic Sensor

Servo Motor

Arduino Mega

DC Motors

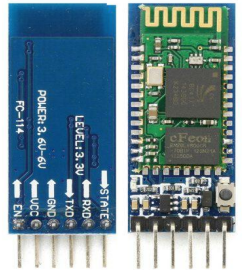


H-Bridge

Hardware Structure Cont.

- Car Structure
- include <VoiceRecognitionV3.h>
- include <SoftwareSerial.h>

Lithium Batteries



Bluetooth Module

Pi Camera V2

Raspberry Pi 3

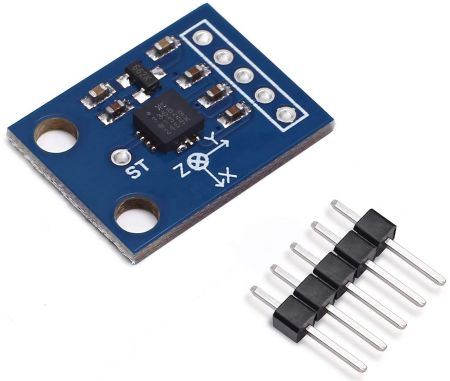
Voice Recognition Module

Hardware Structure Cont.

- Hand Gesture
- Include <SoftwareSerial.h>

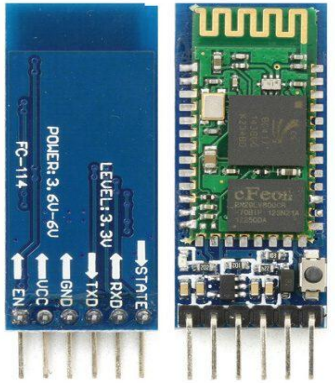
Push button

Light Emitting Diode



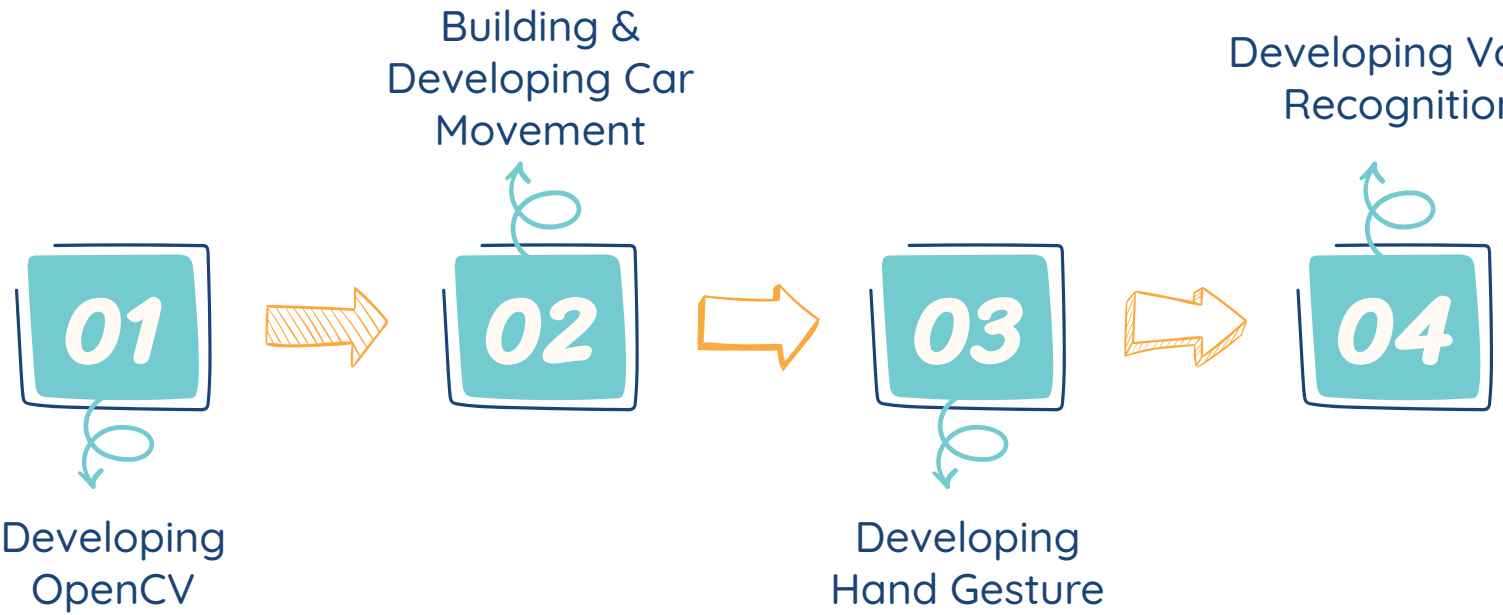
GY- 61 Accelerometer

Arduino UNO



Bluetooth Module

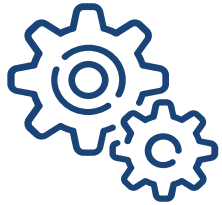
Project Development Stages



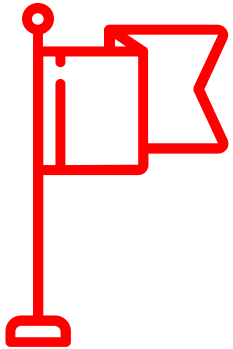
Conclusion and Future Work

The robot will be developed, taken into a bigger scale and include more features in order to be used in warehouses and harbors.

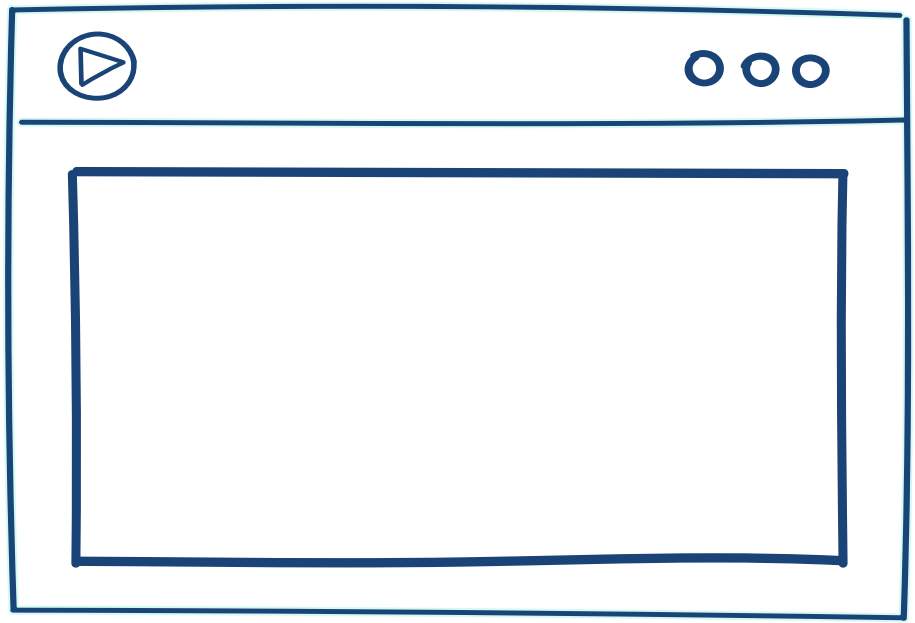
Constraints and Challenges

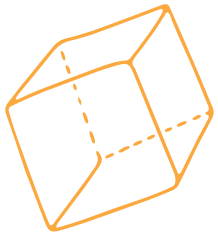


- Hardware problems: Servo Motors and Ultrasonic sensors.
- Delay between Raspberry Pi and Arduino in communication.
- Raspberry Pi availability .
- Limited weight on the robot.
- Time.



Demo





Thanks for listening

Any questions?