ENGINEER KMIDS13

Navy, Pleum, Beam

WRO 2023

>>>

01

Color Camera

For identifying the color of the obstacles

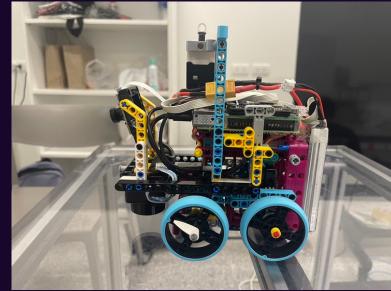


Our Robot



Raspberry Pi

Main board, received each seasons and process also sending the commands to motors.



03

LiDAR

Used for measuring the length between itself and the wall also the obstacles.



Gyro sensor

Allows the robot the understand the direction that it was moving.





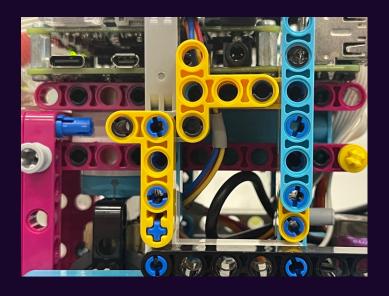
Our Robot

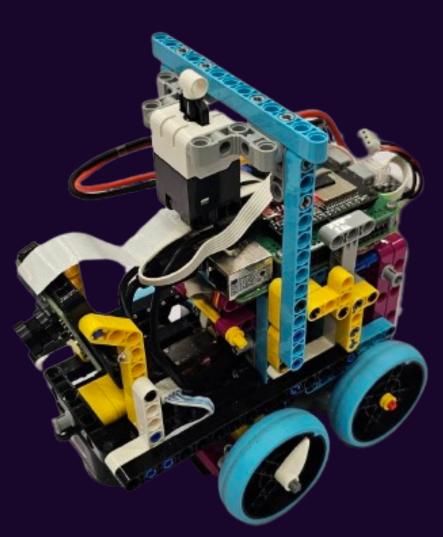
05

Motor

Lego Techinc Medium Angular motor

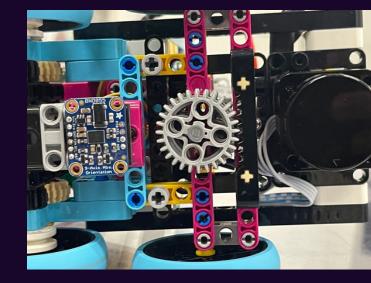
Max Torque: 25 Ncm Max RPM : 175





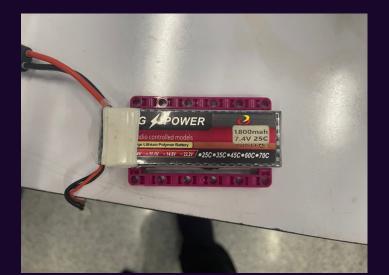
06

Steering System



07

Battery



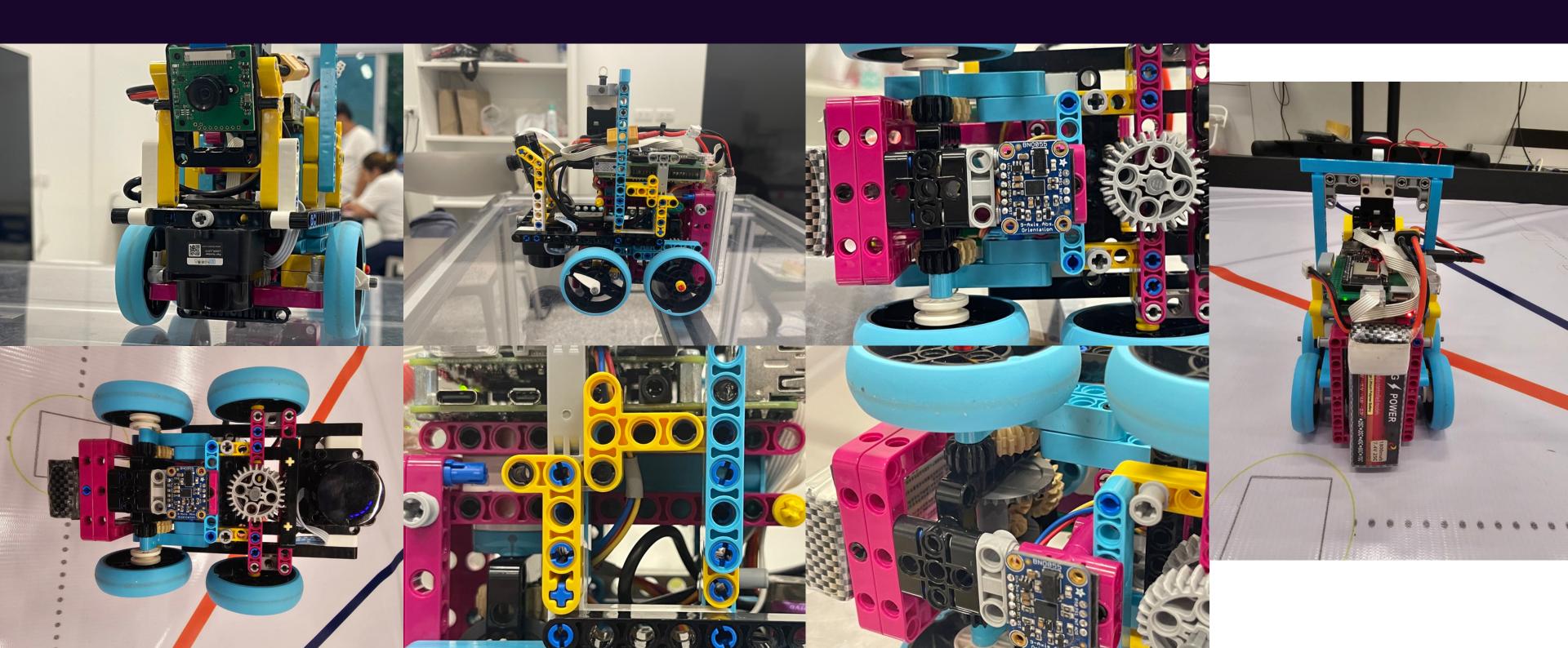
08

Differential



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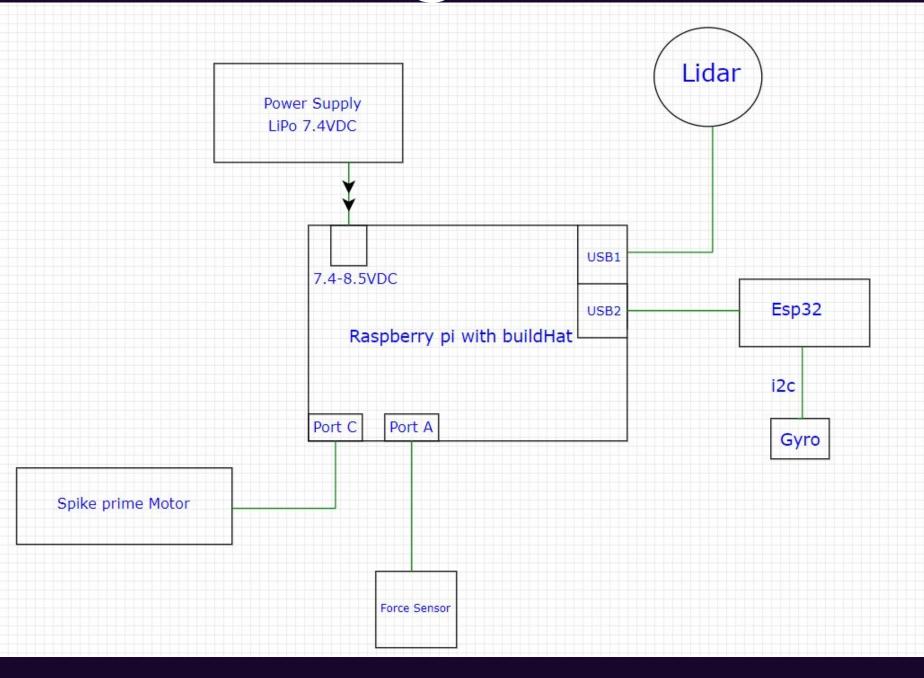
Robot Photo



BOM Sheet

Raspberry Pi model b	x1
Gyro sensor(BNO055)	x1
LiDAR id06	x1
Build Hat	x1
Lego Techinc Medium Angular motor	x1
Lipo Battery(1800mah, 2s(7.4V)	x1
Spikprime	x1
Picamer	x1
Esp 32	x1

Power Management





Program

AUTONOMUS

Then the robot will move forward in a straight line using a gyro to support the machine also responding the information back to the robot.

IDENTIFY WALL

Lidar detects the wall and returns the value allowing the robot to understand which side to turn and when to do it.

IDENTIFY OBSTACLE

Color camera to detect the color of the obstacles which when it is green it must pass from the left side and right side when the obstacles are red.

THANK YOU