Micro_Bots : MAX

Name: Max

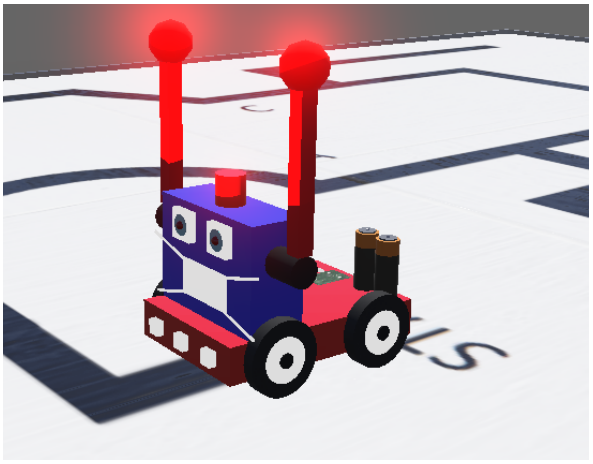
“Ideas don’t come out fully formed,they only become clearer as you work on them.You just have to get started”.-Mark Zukerberg

A week back when we got this project we didn't have any idea how we were going to proceed through it, all we had was enthusiasm and excitement to participate in our first Robo competition in our online college and the guidance and resources provided by our respected seniors.

And here, team **Micro_Bots** presents all of you our first *Line Follower* robot **“MAX”.**

PROJECT OUTLINE

1. ABOUT MAX:



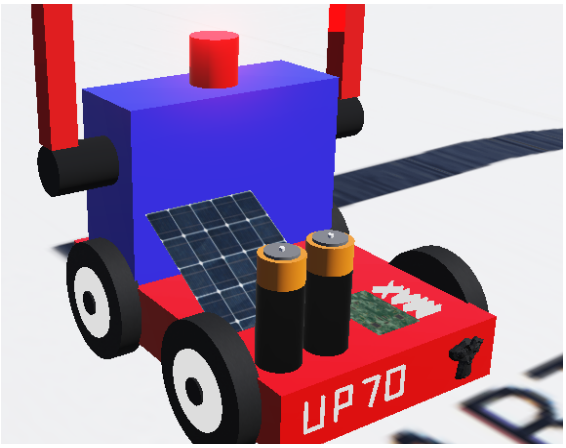
We have made a model of the robot from scratch using different options available in **Webots**.Here we present the outline of structure of **“MAX”.**

Designing of **MAX** starts from a **BOX** which is the **base** of the robot, then we added **4 wheels** and it somewhat resembles **a car**,modifying our design with time we decorated it with all our creativity it has **a solar panel** with **two batteries** all in beautiful colors, also provided our robo a mask to be safe in this pandemic.

There are **4-IR sensors** used,**3 sensors in front** of the robo for the direction of motion and **1 at** the **back left** wheel for stopping the robo.

There are **4 motors** connected to **4 wheels** using **hinge joints**.All **4** of them are independent of each other and have their own works. All 4 of them are used for turning.

We have used **two LED l**ights for making our robo a little bit bright and happy.

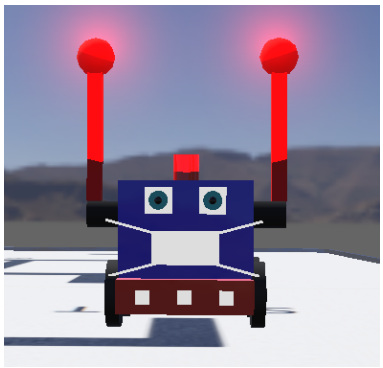


Above all of this our robo is legal with its number plate UP 70 so that no one can stop its path.

So this is all about our dear **MAX.**

2. ABOUT SIMULATION:

In this project we have simulated a robot navigating efficiently through guided black lines on a white floor.
We have adjusted the sensors in a way that,when the analogue reading of **IR sensor** is less than **600** then it detects white radiation and when the reading of the sensor is between **600 -1000 it** detects the black lines.



LOGIC FOR MOVING RIGHT:
If there is no path available in left and straight then it will move towards right.

LOGIC FOR MOVING LEFT :
If there is path available in left it will move towards left.

LOGIC FOR THE "STOP"
If all the **4 sensors** are giving reading more than 600 then it will sto**p**

LOGIC FOR MOVING STRAIGHT:
If none of the above logics are followed the robo will move straight by default.

Micro_Bots and 7 DAYS:

DAY-1: Nothing :) yes nothing,day 1 we opened webots,discussed some unuseful things, closed it and went off to sleep.

DAY-2: A little bit of designing watching some youtube videos ,the robo was ok but god knows why it was stumbling down again and again,we weren't tensionised rather were laughing at our foolishness and the day passed.

DAY-3: Might sound funny but we did a lot of hard work only to know how to import arena in the webots. Seriously,did tried some codes,logics,designs all in vain.

DAY-4: Whatever we made,gone,software crashed,data lost,yes this is an issue with webots,hopes lost we had almost gave up,watched **THE PITCHERS** and went off to sleep.

DAY-5: No one slept for the whole night,it was a whole night marathon beginning it all again fighting with the codes,logics with a basic design as there was no proper documentation available about it .somehow we made our robo move but again stopping it still was a challenge and it was the most difficult portion to think how to stop it.again one more episode of THE PITCHERS and the day ended.

DAY-6: Hitting all the logics that we can think of,conditions and loops whatever we can think tried again and again for about 6 continuous hours and finally found that beautiful logic to stop the robo,this was the first sense of relaxation in these 6 days. And yes this day our robo was moving swiftly,taking all the turns correctly and stopping too at the end.

DAY-7: This was the **"KALAKAARI AND NAMKARAN DAY"** the designing day, utilised all our creativity and designed it fully with solar panels and LED lights, named our dear robo as MAX,did all what we can do we did.
And this way after 7 days MAX was completely ready to be submitted.

So this was all from our side about our project and our journey of our first robo project.
Signing off
TEAM Micro_Bots.
SUDHANSHU KESHARWANI (Team Leader)
RISHABH SINGH
SHIKHA TIWARI
TANISHI SINHA.