Obstacle Avoiding Line Following Robot

Team Alfred
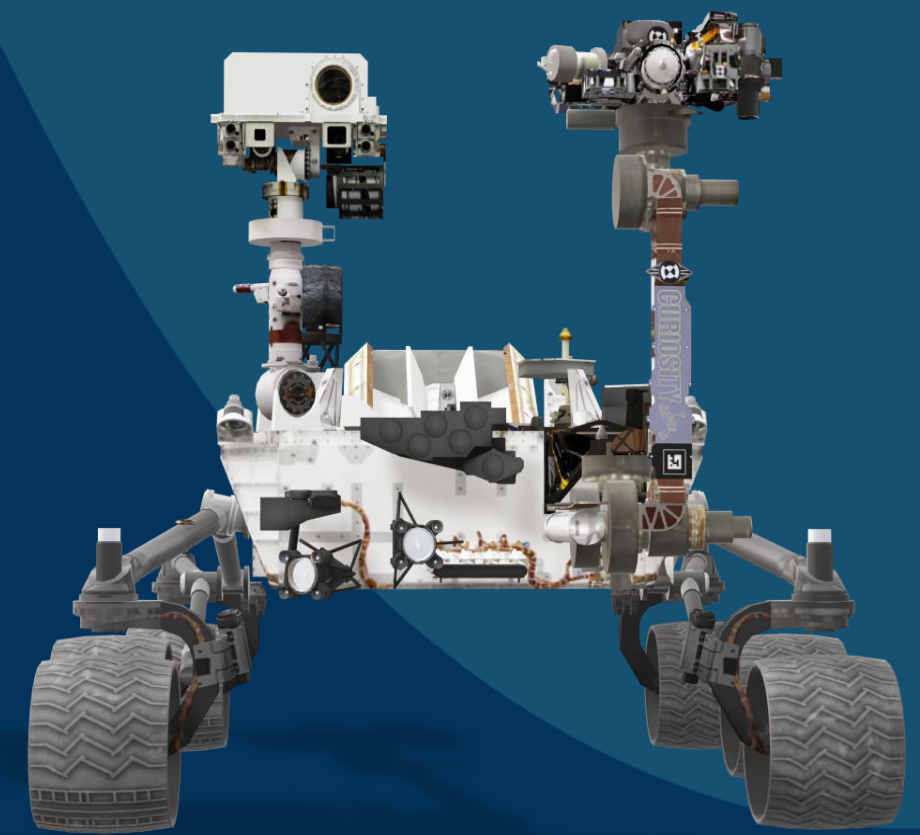
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Introduction

Our target is to design a robot that comes in its path and can avoid obstacles. The Line following robot can follow its own line. This robot is introduced because in many of the industries we have seen that many heavy components which they have to move from one place to another place which is not possible without the help of machines. Obstacle avoiding and line-following robots can be used in mobile robot navigation systems, can be used for household work like automatic vacuum cleaning, and can be used in dangerous environments, where human penetration could be fatal. The main component behind this robot is the Arduino Uno microcontroller, which is the brain of this robot. The best part of our project is that if any obstacle is encountered by the robot.

Goal

If obstacles avoiding and line following robot design is further developed, a large investment can be made and by developing this design at a high cost, a higher price can be obtained in the market.

This robot can be pointed out as a design that is very helpful for hospital systems, restaurants, shops and many more work places

our main goal is to get a good grade by activating this robot

Objectives

The world today is in a situation where doctors are afraid to even go near patients because of the corona epidemic.

And with the advancement of technology, the assistance of robots is now widely used.

Therefore, our main objective is to introduce this product to the global market as a timely and successful solution to adapt to the epidemic situation as well as global technological advances.
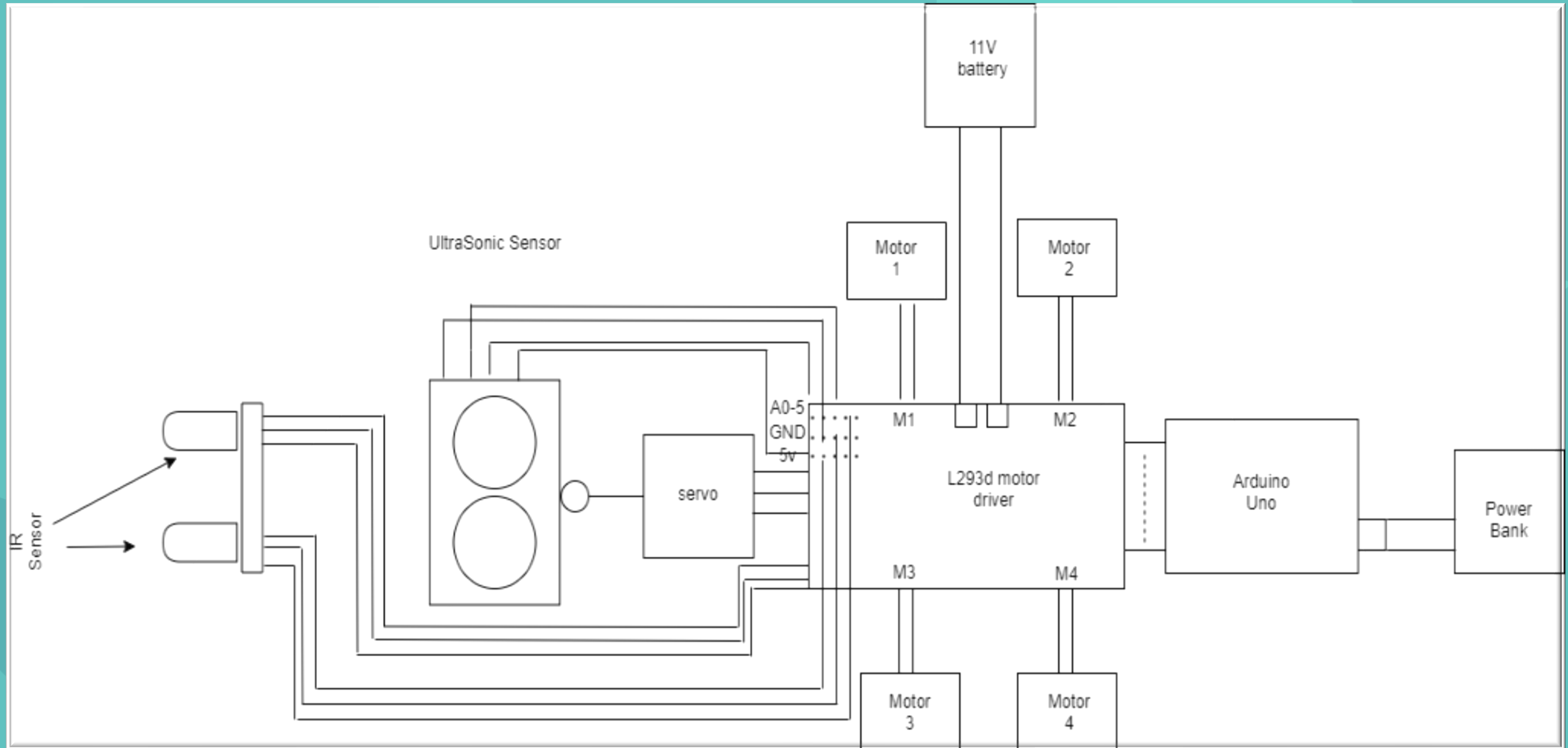
Methodology

Basically, we are planning to use Arduino Programming Language is based on a very simple hardware programming language that is similar to the C Language.

We hope to use Arduino IDE to run this program. To control the robot, we hope to use IoT (Internet of things) technology.
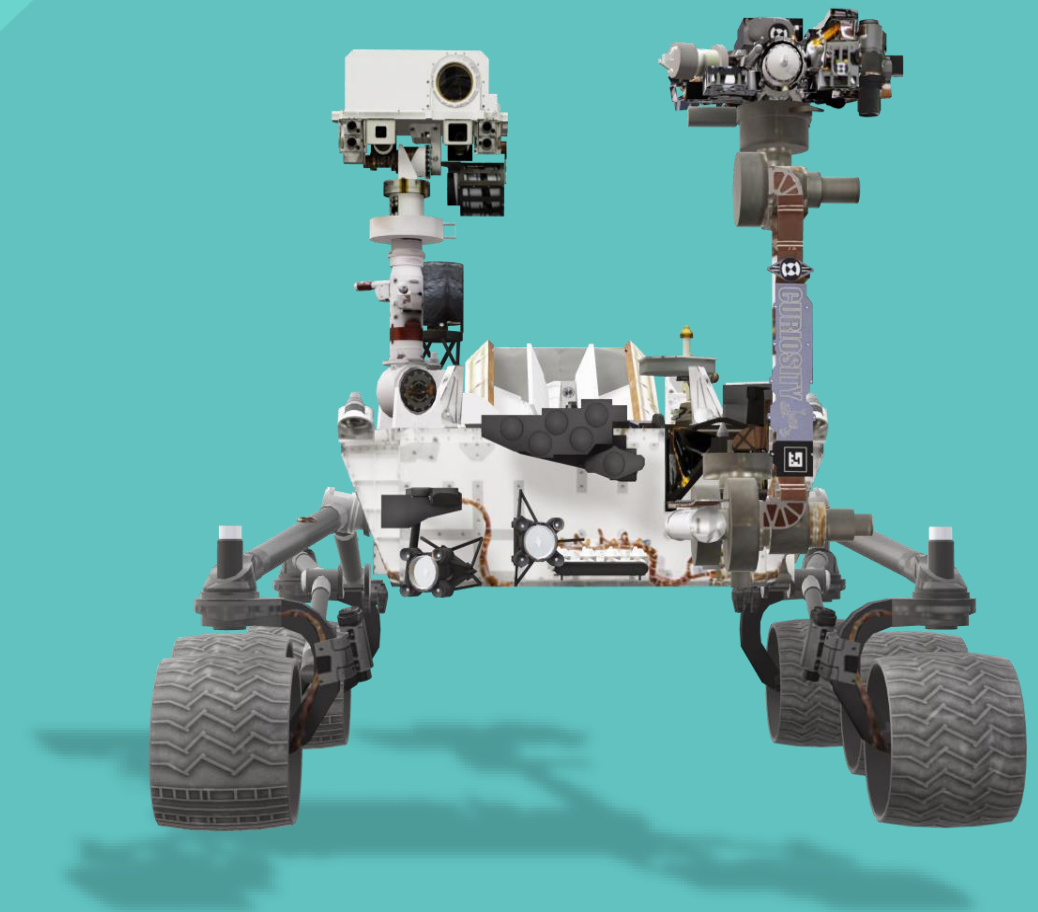
Block diagram

Tools and Technologies

TOOLS

Multimeter

Glue Gun

Electronic Bouth Soldering

Basic Electronic Tool Kit

TECHNOLOGY

IOT

Embedded System

Budget Plan

Product	Quantity	Price
Arduino UNO R3 ATMEGA328P ATMEGA16U2 with cable.	01	Rs.1,740.00
L293D Motor Driver/Servo shield	01	Rs.380.00
Micro servo SG90G Servo Motor	01	Rs.290.00
40x1 Male Header SIL	01	Rs.20.00
4WD Smart Robot Car Chassis kit	01	Rs.1,490.00
M to M 10cm Jumper Wire	40	Rs.140.00
M to F 10cm Jumper Wire	40	Rs.140.00
F to F 10cm Jumper Wire	30	Rs.105.00
HCSR04 Ultrasonic Sensor	01	Rs.180.00
HC–SR05 Ultrasonic Sensor Bracket	01	Rs.80.00
Mini Rocket Switch (ON/OFF)	01	Rs.15.00
IR Sensor	02	Rs.714.00
9v Rechargeable Battery	01	RS.1000.00
SUBTOTAL:		Rs.6,294.00
SHIPPING:		Rs.280.00
PAYMENT METHOD:		BANK TRANSFER
TOTAL:		6,574.00
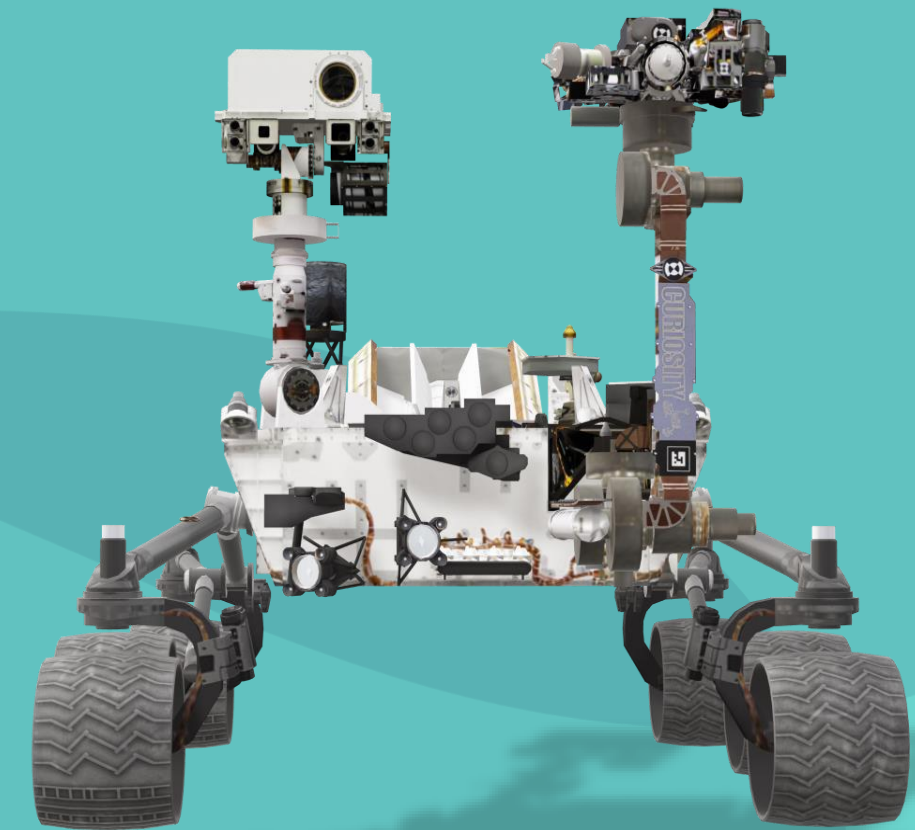
Time Allocation

Phase 1 Title				
Task 1	Researching period	75%	9/1/21	9/7/21
Task 2	Designing the plan	0%	9/8/21	9/15/21
Task 3	Program Planning	0%	9/8/21	9/15/21
Task 4	Collection Ingredient	0%	9/16/21	9/21/21
Task 5	Start	0%	9/22/21	10/22/21
Task 6	Adding Aditional Option	0%	10/23/21	10/30/21
Task 7	Test Run& Fixing Errors	0%	10/31/21	11/6/21
Task 8	Final Test Run	0%	11/7/21	11/12/21
Task 9	Finishing	0%	11/13/21	12/6/21
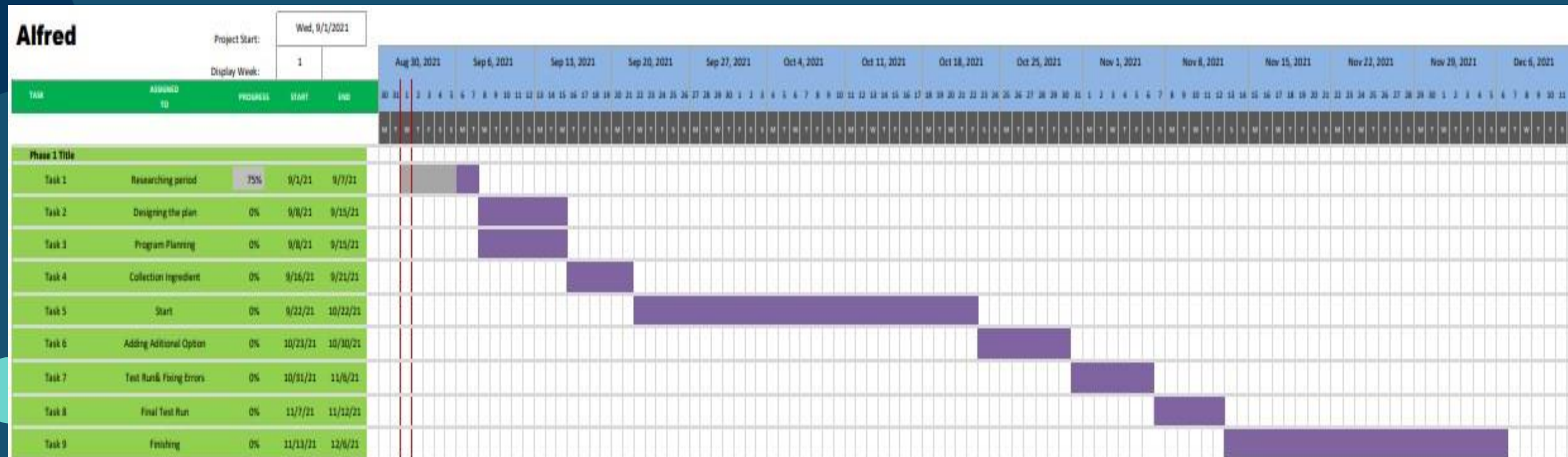
Conclusion

This project will give so much of benefits to the industry and world as well. Many efforts were put into design, implementation and days of toil in front of computer writing and debugging the code .Also, we learn a lot about microcontroller programming. However, most of these ideas will cost more money and time as well. But we hope to use modern technologies we and tools to develop this product with the minimum budget allocation . And this can be used as household work and so many other indoor applications.

THANK YOU !