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Overall Solution

In this document, the current state of the project is explained with a block diagram. In addition, the proposed solution is represented with another block diagram. Furthermore, algorithm for the movements of the robot is also shown.

Solution as it stands today

The solution as of yet consists of a robot capable of following a mockup robot on which the required markers are installed.

Block Diagrams

Block Diagram of the Project

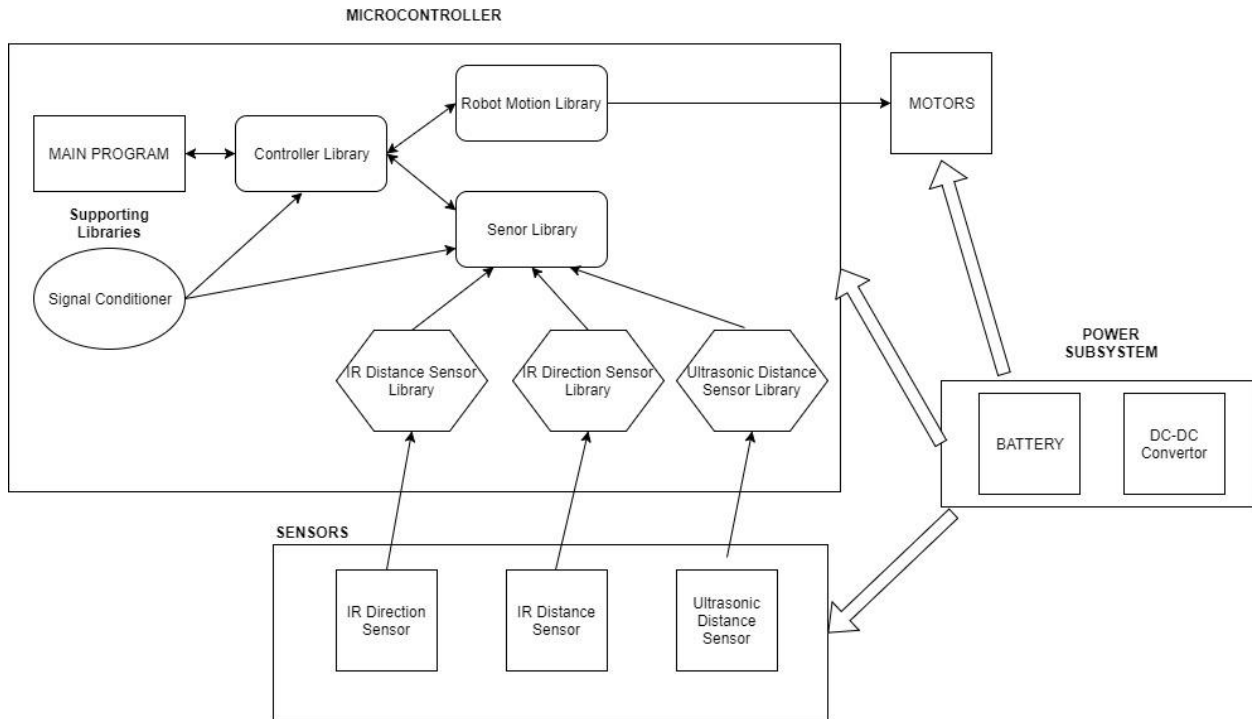


Figure 1: The block diagram of the current system

In Figure 1, the current state of the system is shown. Microcontroller runs the main program and libraries. The data taken from sensors are taken by sensor libraries and it is processed in controller library. Then the required information is sent to motors via Robot Motion Library. In addition, there is the power system which is composed of battery and DC-DC converter. It provides the energy to the microcontroller to run the system.

Block Diagram of the Project

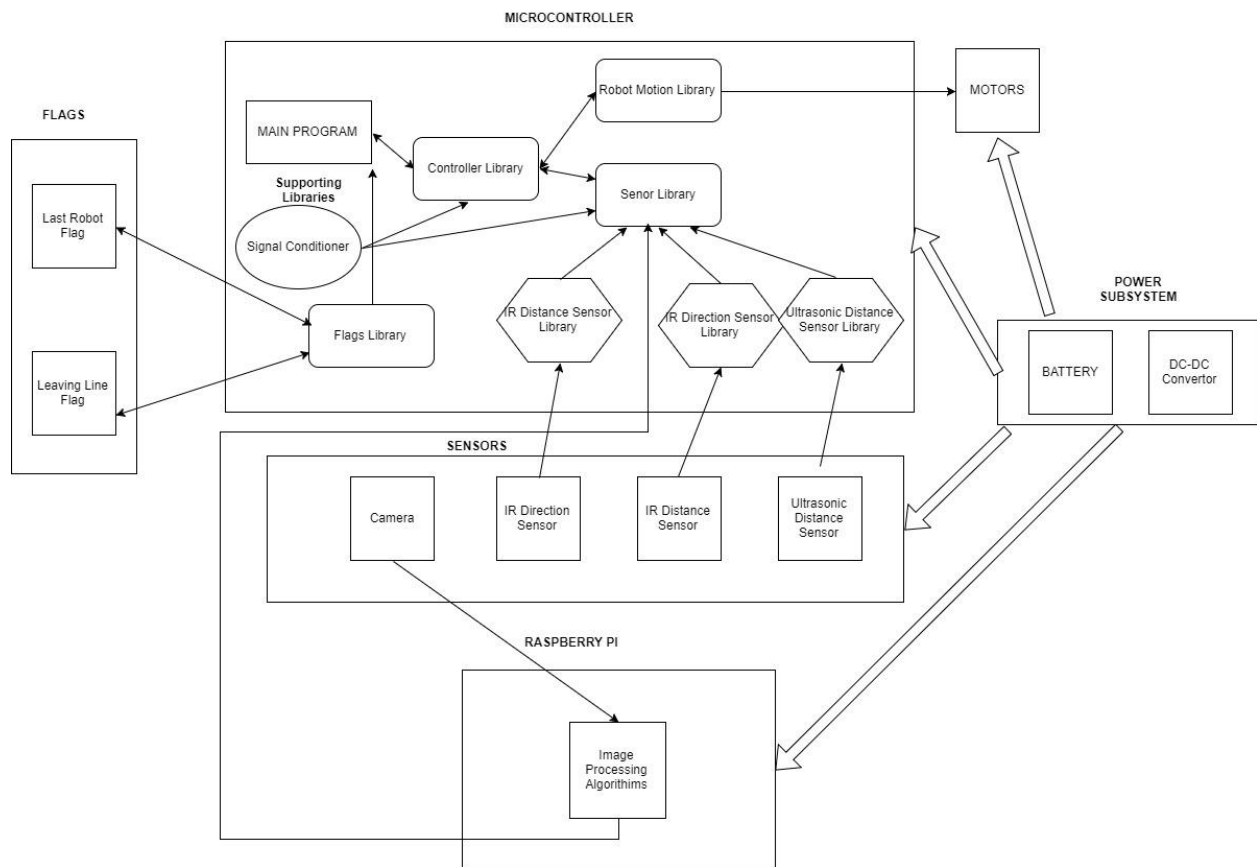


Figure 2: The block diagram of the proposed system

In Figure 2, it can be seen that in addition to the microcontroller we are using, we are going use a Raspberry Pi for image processing. There will also be a camera for the image processing. Furthermore, there will a flag library to detect and set the required flags.

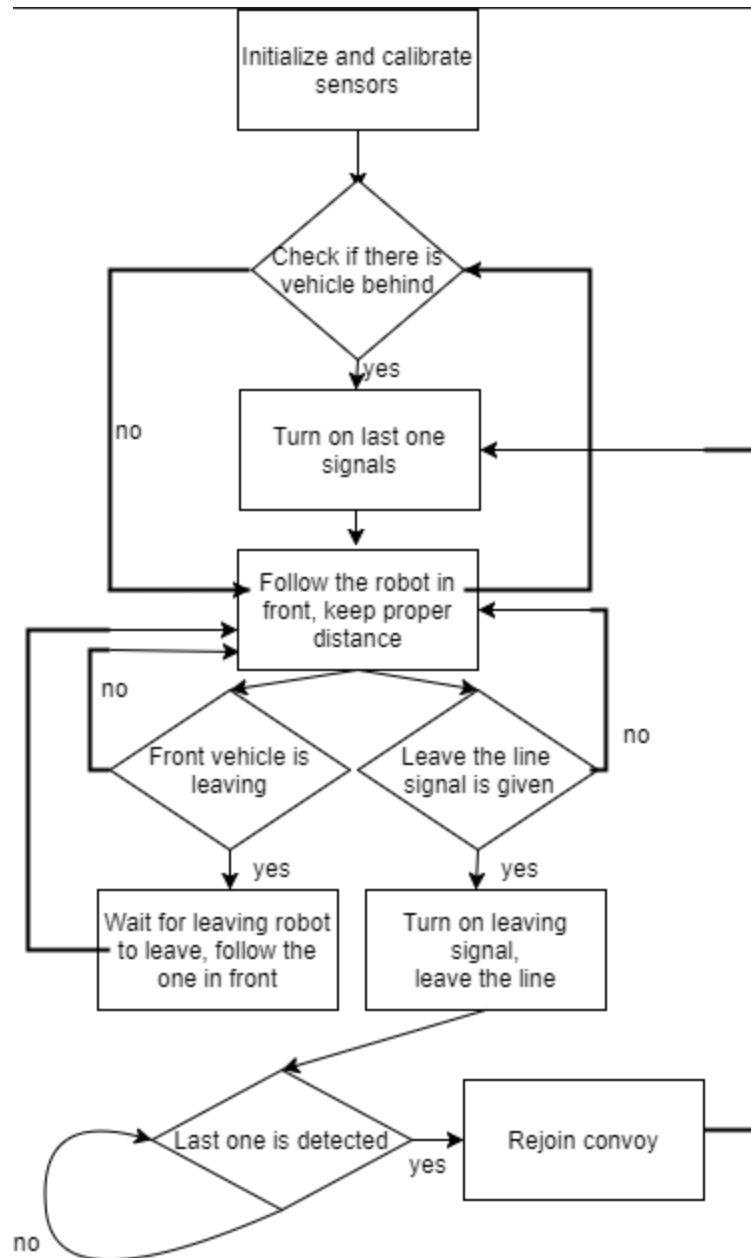


Figure 3: The solution diagram for the system

In Figure 3, the algorithm for the movement of the robot is explained in a simple manner with a flowchart.