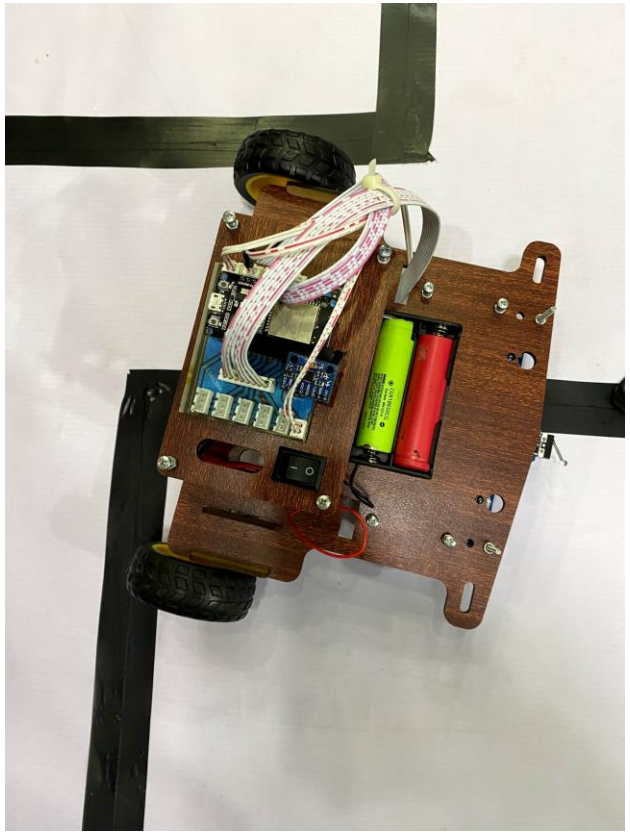
El Sel3wa

Line Maze Solver



The Mechanical team

We were asked for a model like a car to be not exceed 23 *23centimeter

Our goals :

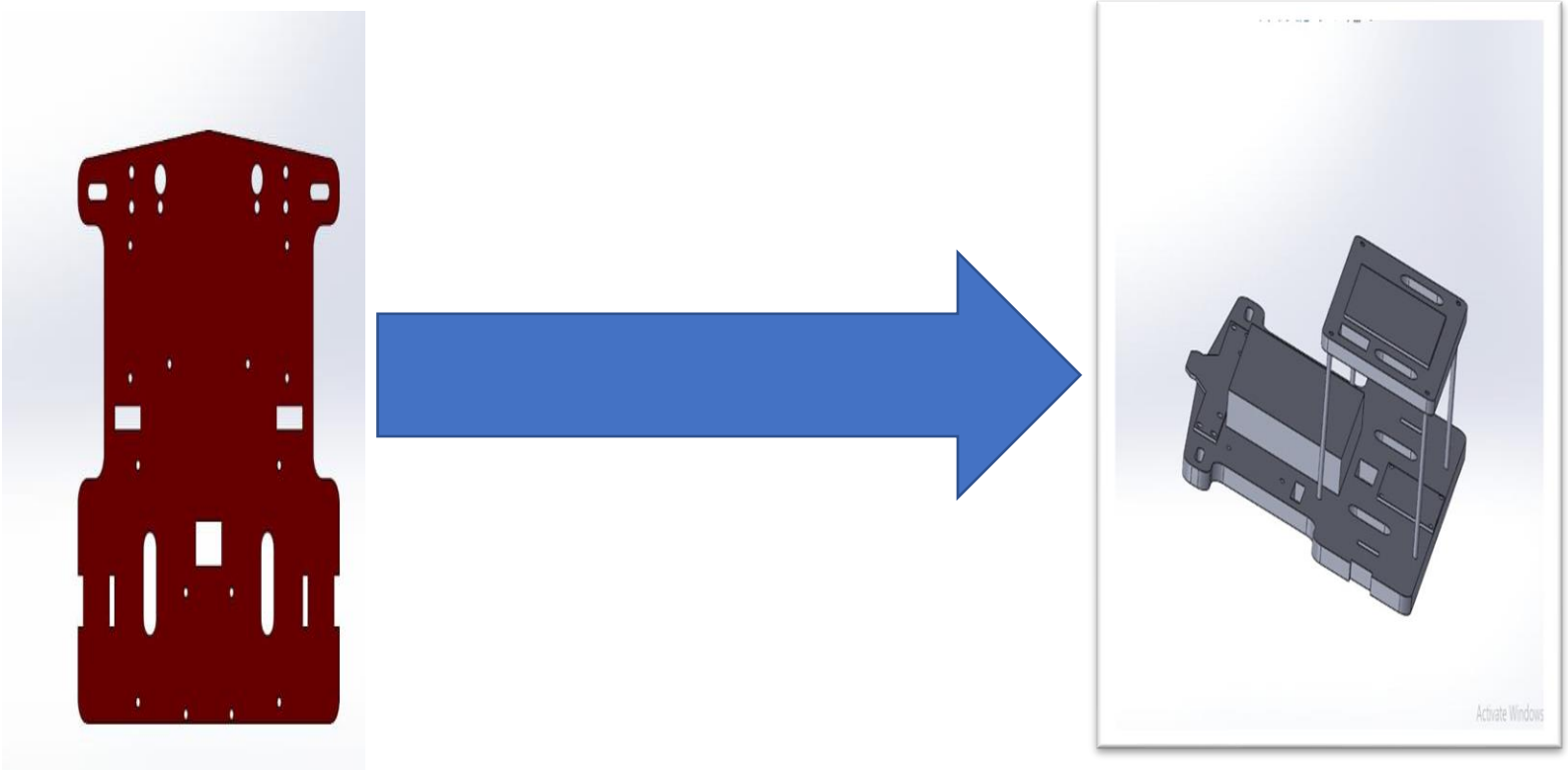
- Communicating with the electrical team
- a Good design
- Trying to reduce the weight to make aerodynamics helps
- Starting the design and machining

The first mission was to know what exactly does the electrical team needs to control model well and preventing it from running from the path so e communicate to see if they need to stick the controller and what cases should we leave a hole to pin it with nail and for safety and to make sure that all is good we made it with two floors for more accuracy so we started to search for it

A Good **design**

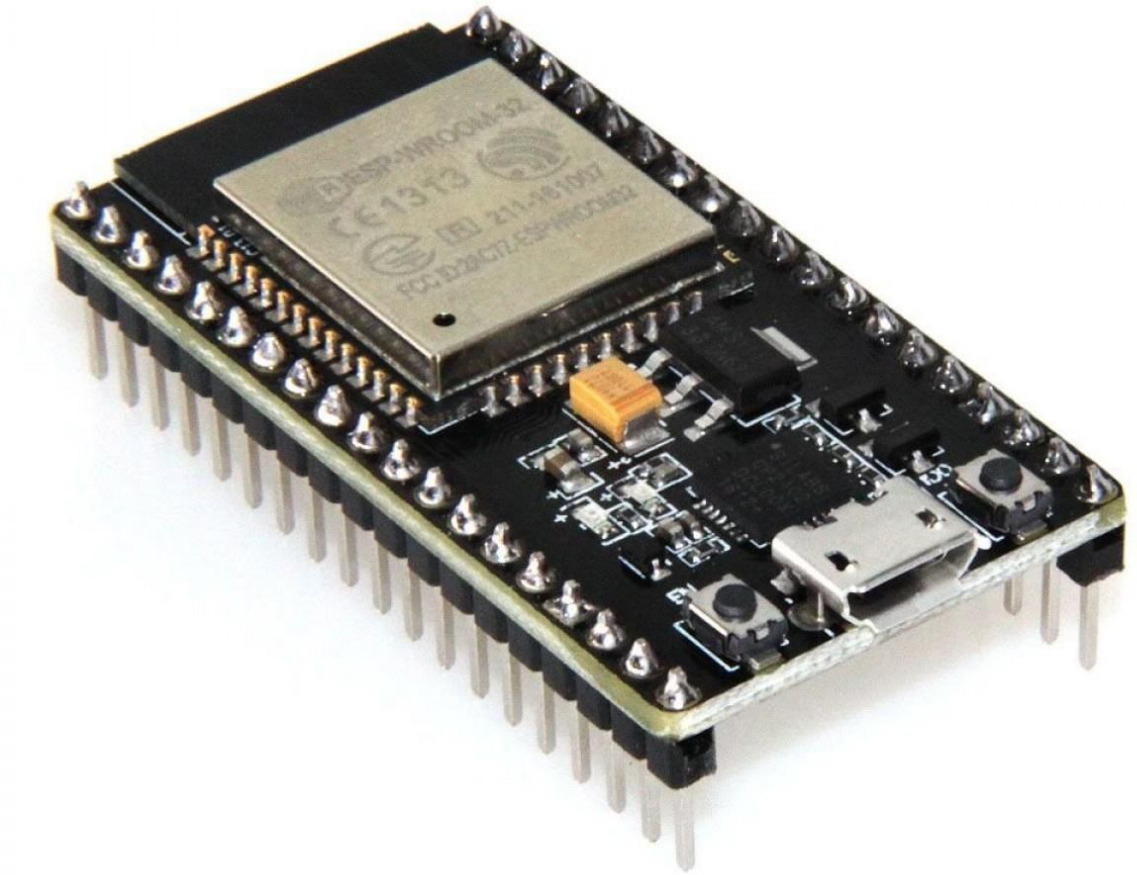
This was the primary and the important mission for the mechanical team was the design our priorities was that every electrical component fits in the model then making a second floor for it and then making the balance so we added two cast wheels on the left – right side then the installments of the motor and its holder and the cast wheels was pinned on the bottom

Balance cast wheels



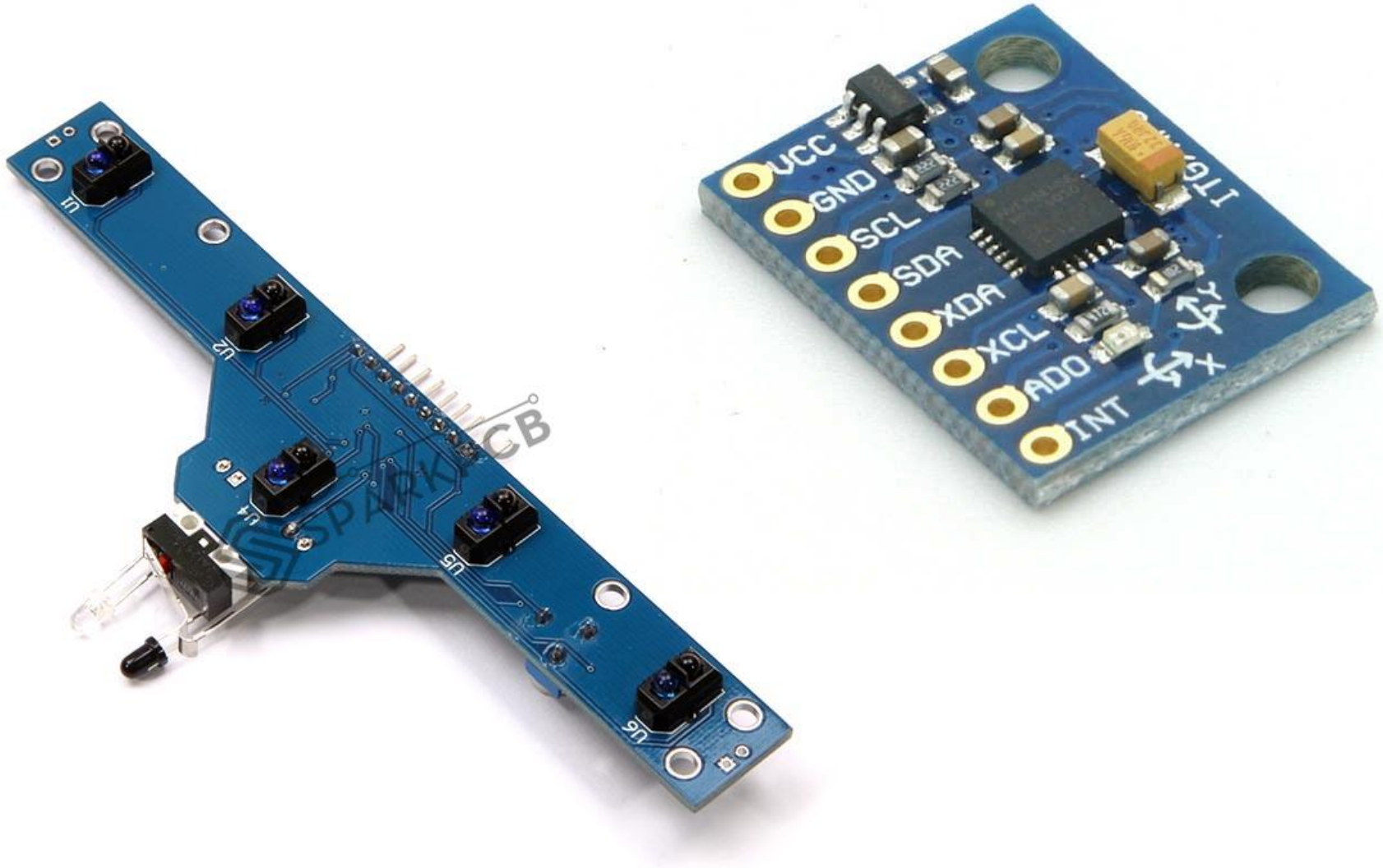
Microcontroller

- ESP32



Sensors

- IR Sensor Array
- IMU MPU-6050

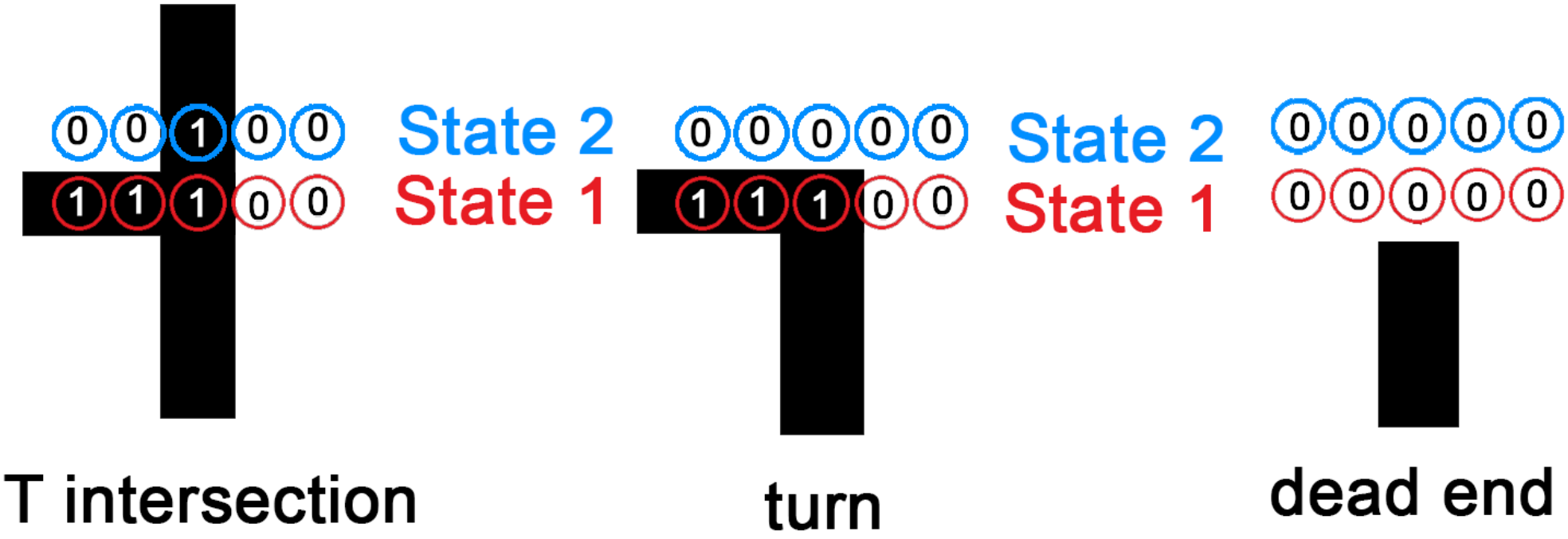


Motor Driver

- L298 Dual Motor Driver

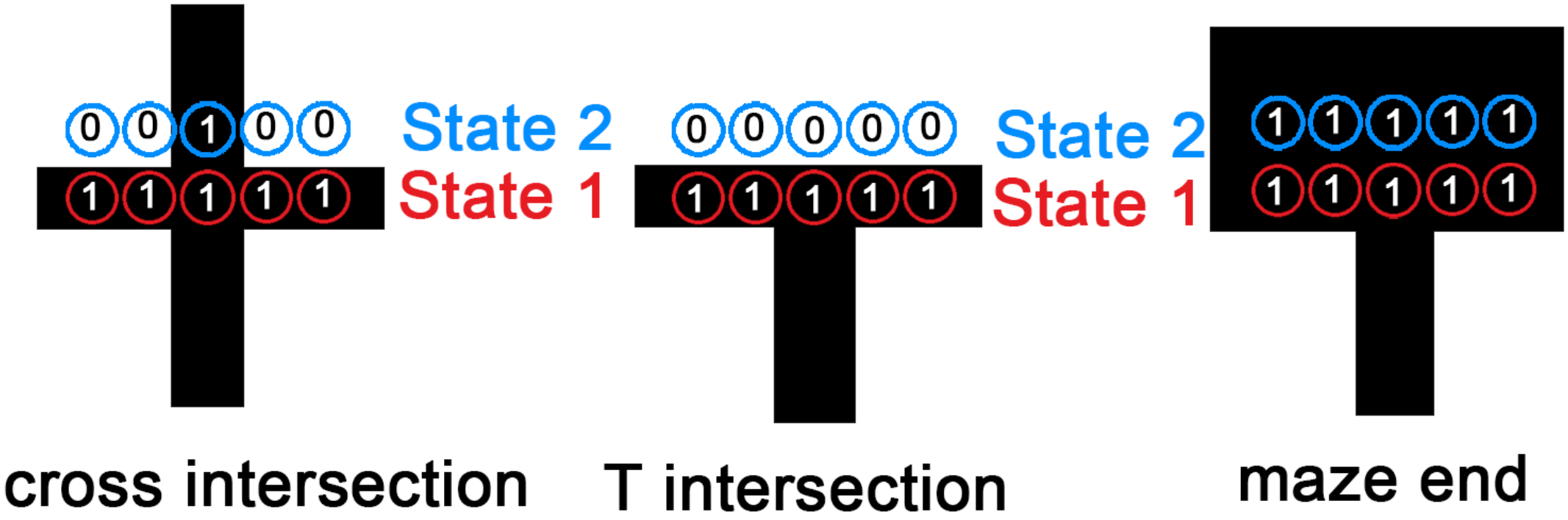
Line Following

- IR Sensing



Line Following

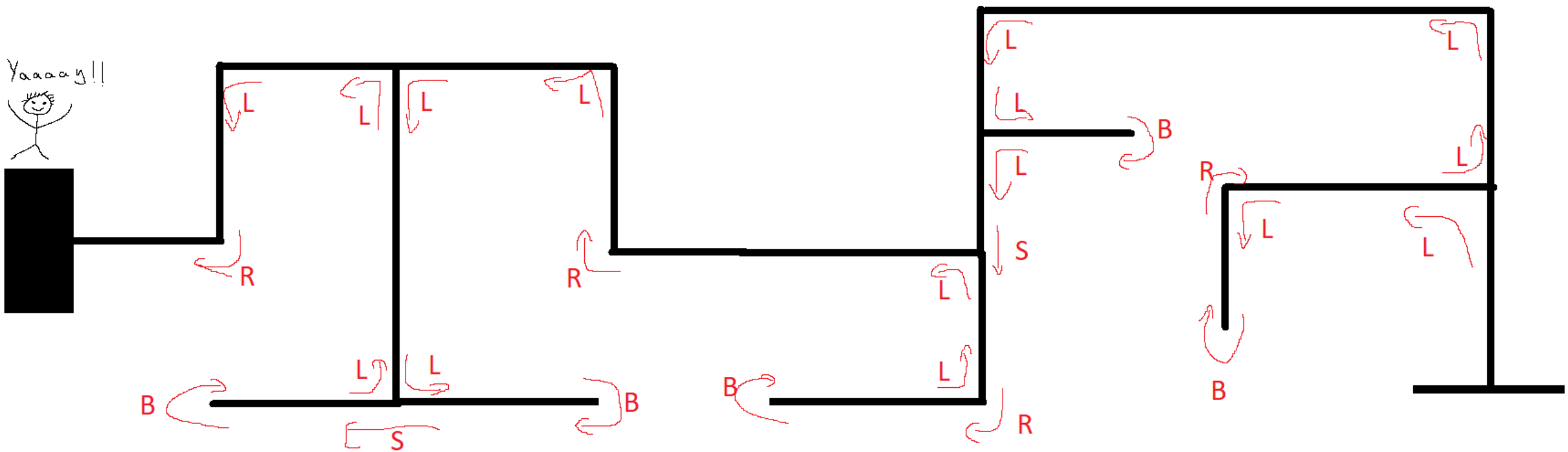
- IR Sensing



Maze Solving

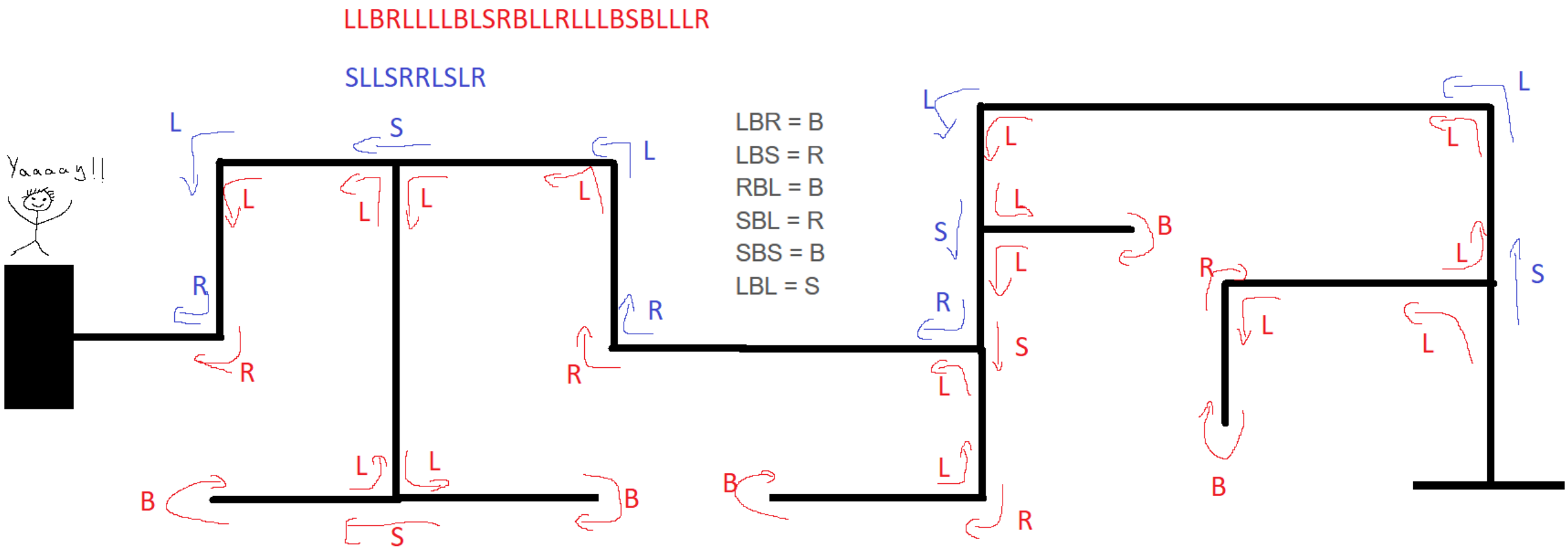
- Left-Hand Rule

LLBRLLLLBLSRBLLRLLLBSBLLLR



Maze Solving

- Left-Hand Rule



PID CONTROLLER