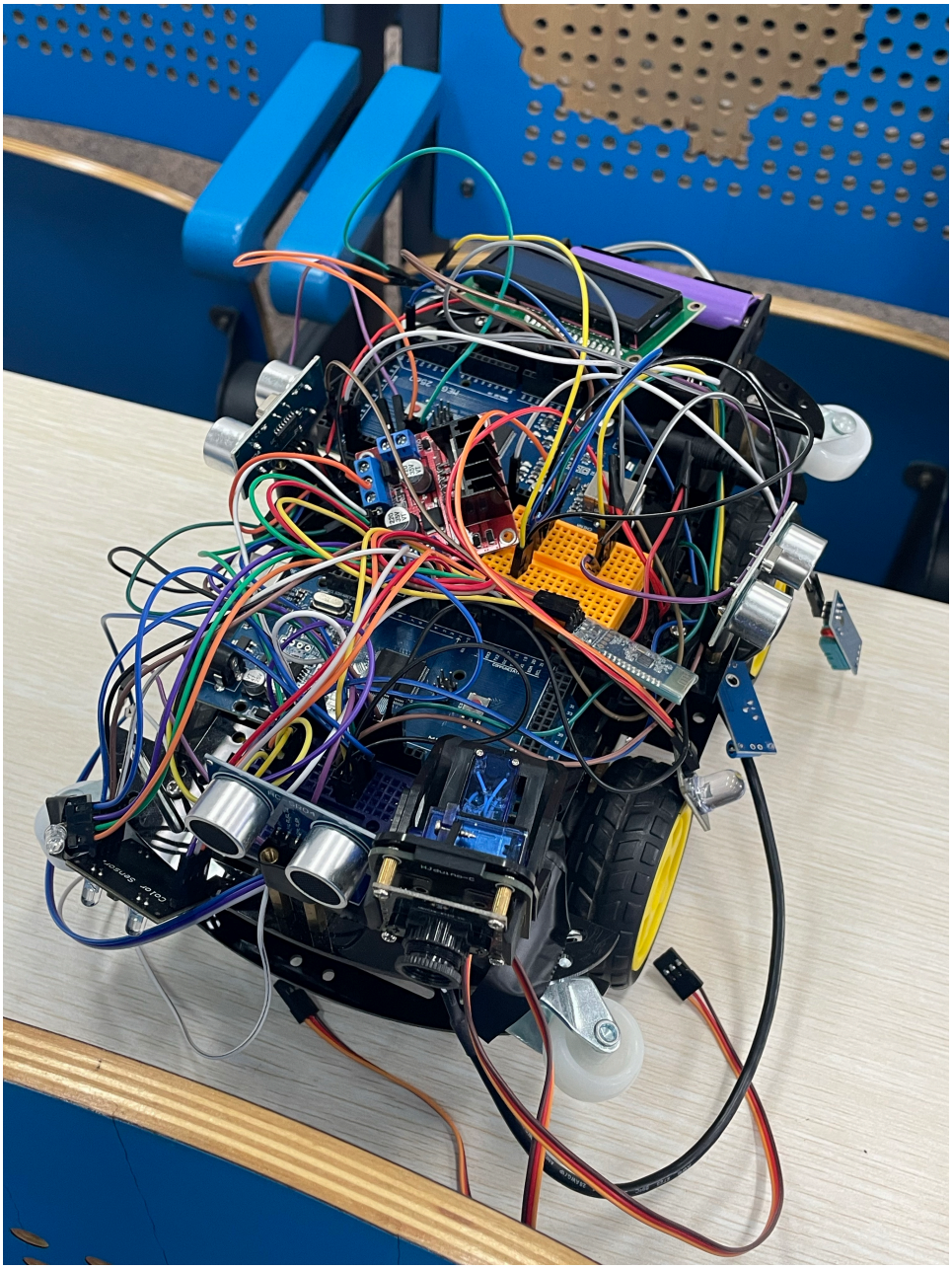
Group 12

Smart Car



User Manual

Smart car design based on Arduino. We have used 2 Arduino mega 2560 board to build the car.

This is for the Board#1:

1. How to turn on the car?

Once you put in 3 batteries needed on the top of the car, the car will be activated and ready to explore the maze.

2. How does the car explore the maze?

The front left and right sides of the car are equipped with distance sensors to detect the distance between the car and the maze wall in each direction, so as to use the algorithm to decide if the car should go straight, turn or turn around. The car will be put at the entrance of the maze and will walk out of the maze after a complete exploration of the maze.

3. How the car distinguish and show different colours of treasures?

There is a colour sensor at the front of the car for colour recognition, and the recognised colour will be reflected by the led lights on the car. e.g. If the led light on the red treasure car is recognised, it will be displayed in red.

This is for Board#2:

1. How to turn on board#2?

The source of board#2 is in the middle of the car and requires 2 batteries, once all batteries are put in, board#2 is activated.

2. How to know the current status of the car?

The car is equipped with Bluetooth. You can connect your mobile phone to the Bluetooth on the car to get that the current state of the car is left and right, forward or backward. At the same time, Bluetooth can return to the running time of the car.

3. How to know the collision when the car walks through the maze?

The car is equipped with a vibration sensor. When the car encounters a relatively violent vibration, there is a large LED light (compared with the led light that returns colour recognition) on the car.

4. How to use the camera on the car?

The camera on the car is connected to the Wi-Fi on the car. If you need photos taken by the car camera, you need the computer to connect to the Wi-Fi. The real-time picture of the camera and a shooting button will be displayed on the computer. After clicking the shooting, the photo will be stored locally on the computer.