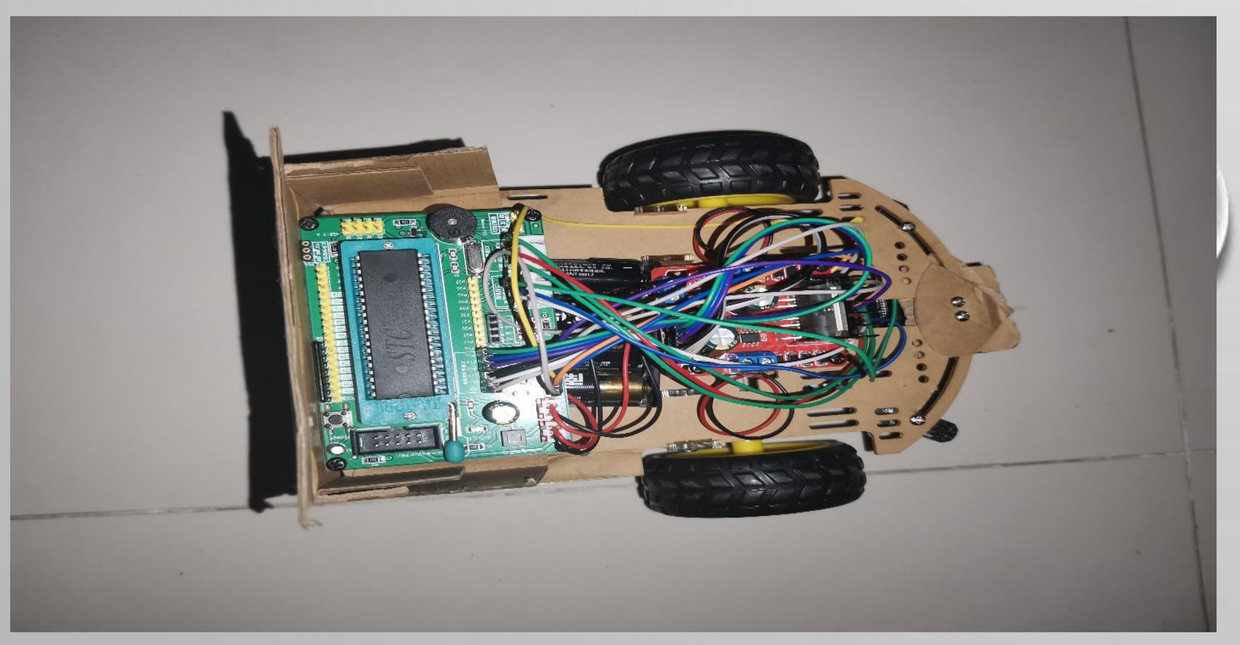
Intelligent car based on 51 microcontroller

51 microcontroller
Model: STC89C52
Low power consumption： Supports low-power mode, reducing energy consumption without affecting performance, making it very suitable for battery powered devices.
Rich I/O interfaces： Featuring32 programmable I/O pins, it supports the connection of various external devices such as sensors, displays, and motor drivers.
Interrupt system： Provide a multi-level interrupt system to improve program response speed and system real-time performance.

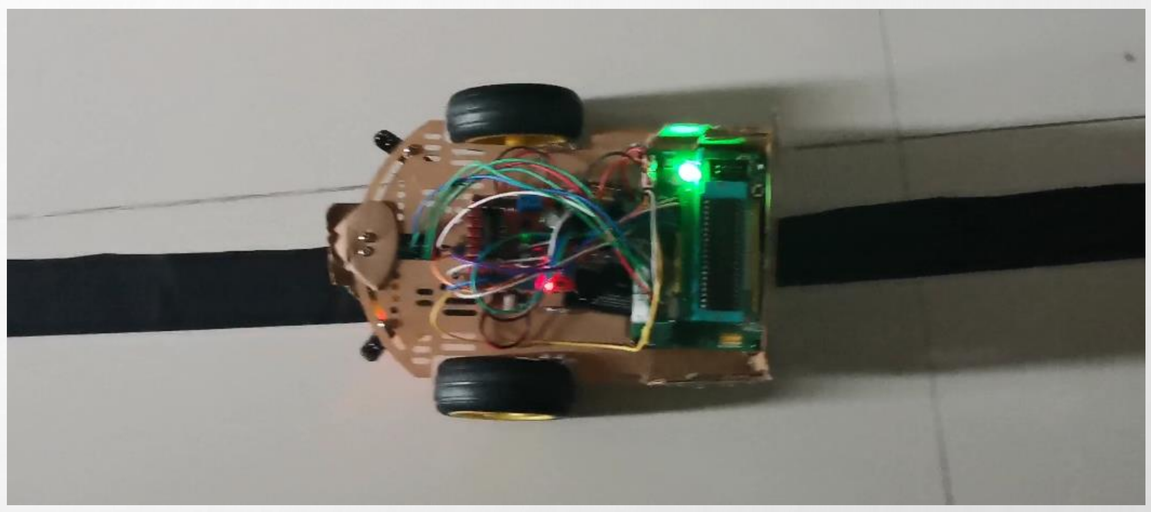
Achieve basic motion control of intelligent vehicles through programming. Using the 51 microcontroller as the main control chip, combined with PWM signal adjustment, the car can achieve functions such as forward, turn left and right, and stopping. In addition, through feedback from sensors, the car can autonomously adjust its position and direction, possessing a certain level of intelligent tracking capability.

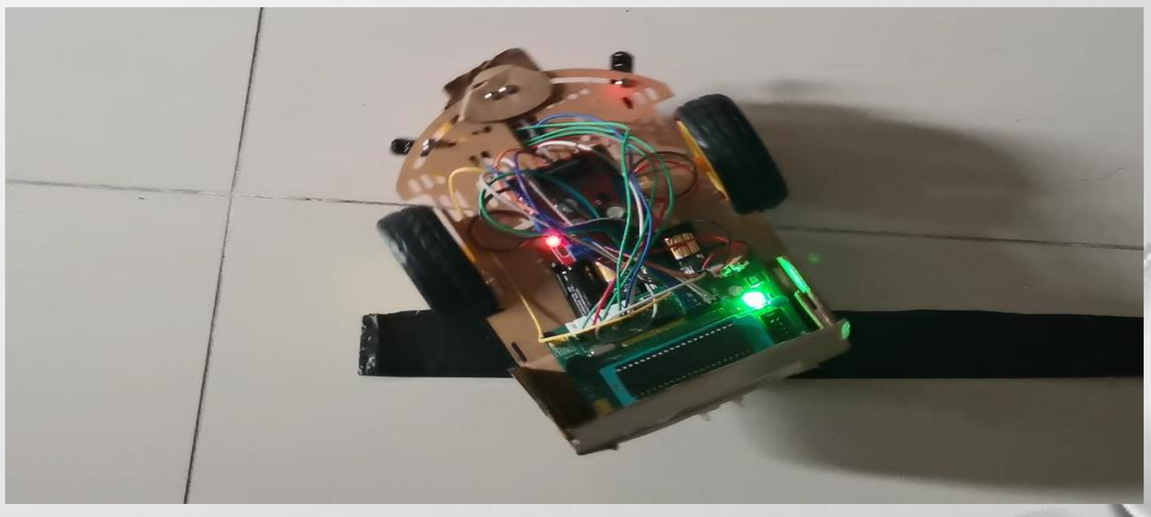
Function description: PWM (Pulse Width Modulation) is used to regulate the speed of a motor by controlling the duty cycle of the signal.
Implementation method: Set a timer to generate PWM signals. Adjust the duty cycle to change the motor speed. The PWM function is used to load PWM output values and control the speed of the motor.

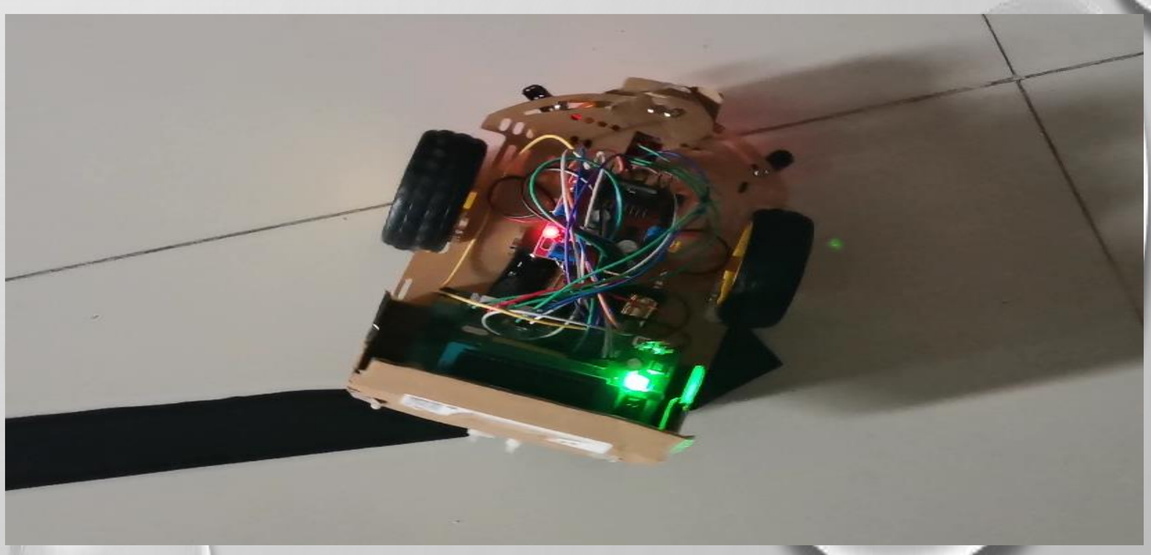


Function description: Generate and adjust control signals for controlling the direction and speed of motors.
Implementation method: Generate output signals using timers and GPIO pins. Accurate control is achieved by adjusting the signal frequency and duty cycle.

According to the probes' status, the car automatically moves forward, turns left, right, and stops







Group members：
GUO HAOCHENG 665380030-8
LIU JIAJING 665380031-6
ZHAN DAKUI 675380021-0
SC328 841: Advanced Computer Network Technology
Prof. Chakchai So-In