Anti-Sleep Glass

Hardware Project Documentation

Introduction

Driving for a long time often causes drowsiness. Many road accidents happen because drivers fall asleep while driving. The Anti-Sleep Glass project is designed to detect drowsiness and give an alert to the driver, thereby preventing accidents.

Objective

- To monitor driver's eyes using a sensor.
- To detect sleep/drowsiness.
- To provide buzzer alert when sleep is detected.
- To reduce the number of road accidents.

Components Used

- IR Sensor – To detect whether eyes are open/closed.
- Arduino Uno / Microcontroller – For processing the sensor data.
- Buzzer – To give an alert sound when sleep is detected.
- Battery (9V) – To power the circuit.
- Wires and Breadboard – For circuit connections.
- Glass Frame – To mount the IR sensor near the eyes.

Working Principle

The IR sensor continuously monitors the eye movement. When eyes are closed for more than a threshold time (2–3 seconds), the microcontroller detects it as drowsiness. Immediately, the buzzer rings to wake up the driver. The device resets when the eyes open again.

Applications

- For long-distance truck/bus drivers.
- Car drivers during night journeys.
- Can be modified for machine operators in factories.

Conclusion

The Anti-Sleep Glass is a cost-effective and simple safety device. It can prevent accidents by alerting sleepy drivers and ensuring road safety.