SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

CAR IGNITION SYSTEM WITH FINGERPRINT AND ALCOHOL DETECTOR

BATCH NO:15

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Abstract

The "Enhanced Car Ignition System with Fingerprint and Alcohol Detector" integrates cutting-edge technology to enhance vehicle security and safety. Traditional car ignition systems solely rely on keys, leaving vehicles vulnerable to theft and unsafe operation by intoxicated drivers. This project proposes a solution that combines biometric authentication and alcohol detection to address these concerns.

The system utilizes a fingerprint scanner to authenticate the driver's identity before allowing ignition. This adds an extra layer of security, preventing unauthorized individuals from starting the vehicle. Additionally, an alcohol detector is integrated into the system to analyze the driver's blood alcohol content (BAC) level. If the BAC exceeds the legal limit, the ignition is disabled, thus preventing potential accidents due to impaired driving.

By integrating these advanced technologies into the car ignition system, this project aims to promote safer driving practices and reduce the risk of theft. The presentation will delve into the technical aspects of the system, including its components, operation, and potential impact on road safety.

Introduction:

In today's fast-paced world, ensuring safety and security in vehicles is paramount. Our project introduces an innovative solution by integrating a fingerprint recognition system and an alcohol detector into the car ignition system. This advanced technology aims to enhance safety measures, prevent unauthorized vehicle access, and mitigate the risks associated with drunk driving.

Key Features:

1.Fingerprint Recognition:

1. Eliminates the risk of car theft through key duplication.

2.Alcohol Detector:

1. Measures alcohol levels in the driver's breath.

Benefits:

1.Enhanced Security:

1. Provides an additional layer of security against theft.

2.Safety Assurance:

1. Promotes responsible driving behavior.

# Car Ignition System with Fingerprint and Alcohol Detector

An innovative car ignition system integrating fingerprint recognition technology and alcohol detection to ensure safe and secure driving.

Integration of Fingerprint and Alcohol Detection in the Ignition System

Incorporating biometric fingerprint authentication with advanced alcohol detection technology.

Seamless integration ensures enhanced security and safety for vehicle ignition systems.

R-307 Fingerprint Sensor
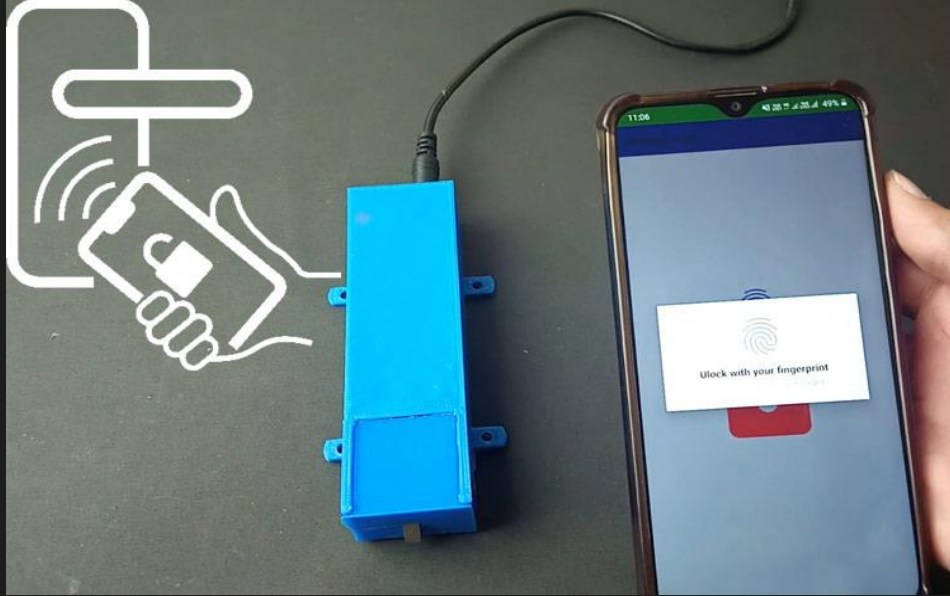
How the fingerprint detection works

Advanced sensors capture unique fingerprint patterns.

Patterns are converted into digital data for authentication.

Highly secure system ensures accurate and rapid identification.

Arduino Door lock APK is used widely.

70-80% of accuracy is required.

Future developments and advancements in car ignition systems

Biometric Authentication

Advancements in fingerprint and facial recognition technology

Smartphone Integration

Seamless integration with mobile apps for ignition control

AI and Machine Learning

Utilizing AI to adapt to driver behavior and patterns

Benefits of using fingerprint detection in car ignition systems

Enhanced Security

Prevents unauthorized vehicle operation

Convenience

Eliminates the need for keys or key fobs

Personalization

Allows for customized driver settings and preferences

How the Alcohol Detector Works

An alcohol detector in a car ignition system utilizes a breath analyzer to measure the driver's blood alcohol content and determine if it's above the legal limit.

It then sends this information to the car's central processing unit, which either permits or prevents the engine from starting based on the reading.

TIGHTENING NOOSE

ALCOHOL LEVEL IN BLOOD
(Figures in mg per 100 ml of blood)

Fine ₹10,000 to ₹30,000

	Current limit	Proposed limit
	30	20

How much can land you in trouble?

▶ 330ml of beer
▶ 200ml of wine
▶ 40ml of whiskey, vodka, brandy

Importance of alcohol detection in car ignition systems

Prevent Impaired Driving

Reduces the risk of drunk driving accidents

Saves Lives

Protects both the driver and others on the road

Legal Compliance

Helps ensure adherence to drinking and driving regulations

Integration of Fingerprint and Alcohol Detection in Car Ignition Systems

Secure vehicle access using fingerprint technology

Reliable alcohol detection to prevent drunk and drive

Seamless integration for enhanced safety

CAR IGNITION CONTROL WITH FINGERPRINT AND ALCOHOL DETECTOR
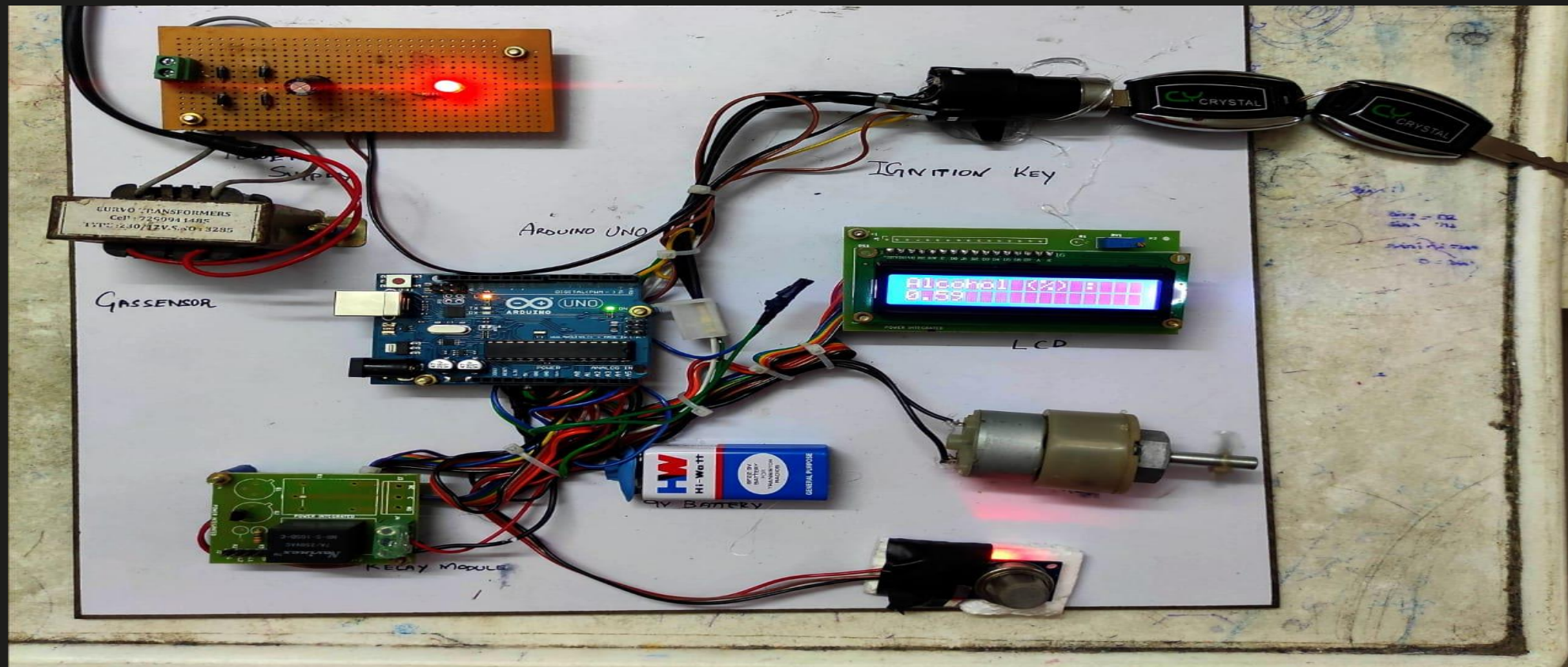
MOTOR

BLUETOOTH

RELAY

MQ3 ALCOHOL SENSOR

ARDUINO UNO

BATCH NO. -15

ECE-B

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Advantages of combining fingerprint and alcohol detection in car ignition systems

- **Improved safety:** Prevents unauthorized use and drunk driving

- **Enhanced security:** Reduces car theft and unauthorized access

- **Legal compliance:** Meets regulatory requirements for alcohol detection

Challenges and Limitations of the System

Technological Constraints

Integration with older car models

Accuracy and reliability in varying conditions

Privacy Concerns

Storage and protection of fingerprint data

Potential misuse of biometric information

Licensing and Regulations

Compliance with legal requirements

Challenges in implementation across different regions

Future Developments and Improvements

1   **Enhanced Fingerprint Technology**
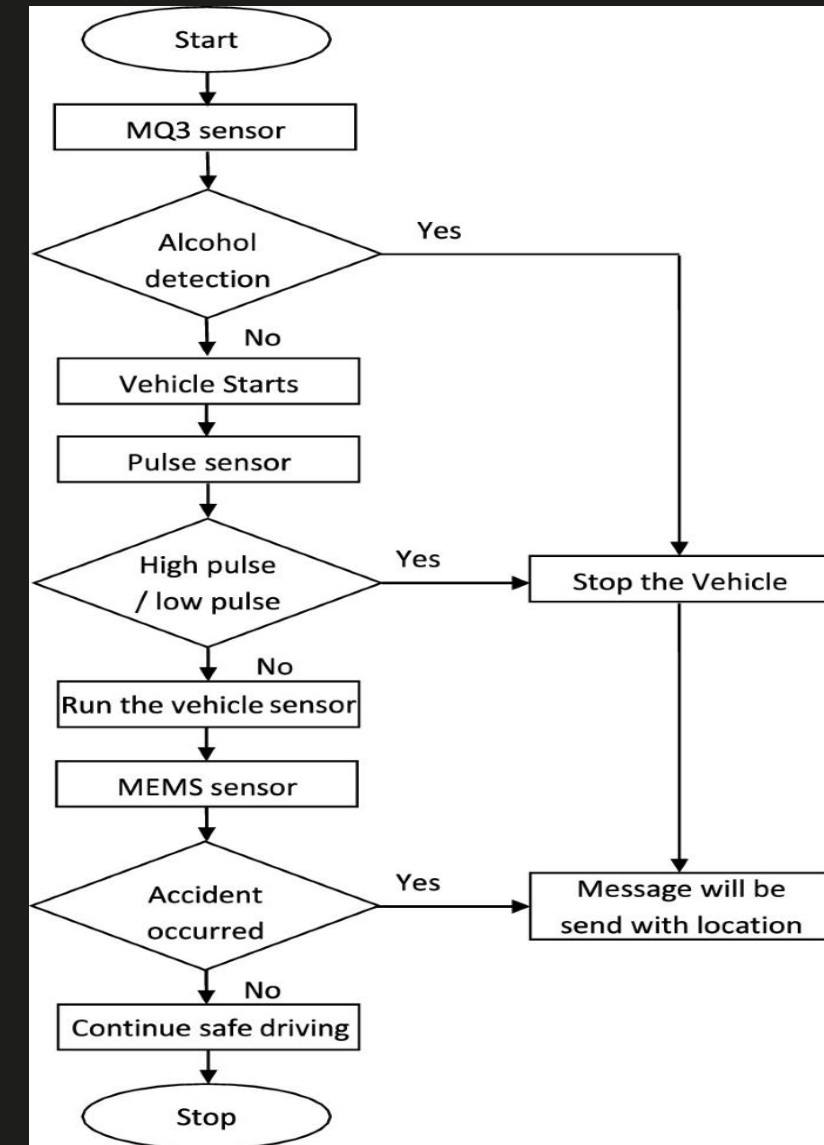
Improved accuracy and speed

2   **Advanced Alcohol Detection Algorithms**

Increased sensitivity to detect low alcohol levels

3   **Integration with Biometric Access Control**

Seamless combination with vehicle security systems

Conclusion

Summarizing the benefits of the integrated car ignition system with fingerprint and alcohol detection.

Highlighting the potential impact on road safety and future developments for further improvement.

THANK YOU