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FINGER PRINT BIKE STARTER

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ABSTRACT

This fingerprint system is a project to prevent motorcycle thefts these days. So with our projector initiative, this will reduce the risk of thefts that happen in India. We got this idea based on the collected problem statement which is nowadays motorcycle are easily being stolen by the thieves. The objective of this project is to upgrade the safety system, to ease the ignition of thebike and reduce the loss of motorcycles in the present time. Basically, we are making a new way to start a bike that is originally used starter. By using our project, they can ignite their motorcycle just by using their fingerprint. In our preliminary study, this project requires us to study about electronic devices and circuits. Thus, we have to make research to make a circuit so, the fingerprint sensor will work well. In conclusion, we hope our project could decrease therate of stolen motorcycle and give a new interesting way of starting your motorcycle.

INTRODUCTION

Motorcycle fingerprint sensor is our project for final year project. This project is inspired from the smartphone fingerprint sensor that is widely used in any smartphones in this world. We cannot unlock our phone if the sensor cannot recognize the fingerprint and this way is safer thanusing the old way which is pin lock or pattern lock. Nobody can use your phone unless you openit with your own fingerprint. Because of this, we would like to apply this application for motorcycle due to the increased number of stolen motorcycle cases lately. This case is getting worst and it does not only happen to the moped bike, this case only happens at the superbike. But for the superbike, it is not so famous because stealing a superbike is not that easy like stealinga moped bike.

I. LITERATURE SURVEY

1.1 Anti-Theft Protection of Vehicles by using Fingerprint

The use of vehicle is a must for everyone. In the same way, safeguarding the vehicle against theftis also very essential and it is done by vehicle tracking system. The roots of Vehicle Tracking Systems lie in shipping industry. They required some sort of system to determine where each vehicle was at any given time and for how long it travelled. Modern vehicle tracking uses the active vehicle tracking and GPS technology. This technology provides with a split screen view when reviewing your driver's route. Stop and transit times, as well as speed information, are displayed in the bottom pane. It can easily toggle between stops by clicking the stop number onthe track detail pane and the system can save the information about the engine that it is in workingcondition or stop by ignition ON/OFF detection. Fingerprint sensor captures the fingerprint images, matches the uniqueness of each print read by the sensor and compares it to the one storedin its module or local system database. A vehicle tracking system that works using GPS and GSM technology, which would be the cheapest source of vehicle tracking and it would work as anti-theft system. It is an embedded system which is used for tracking and positioning of any vehicle by using Global Positioning System (GPS) and Global system for mobile communication(GSM).

1.2 Finger Print Based Bank Locker Security System

The main goal of this project is to design and implement a bank locker security system based on Finger print and OTP technology. This can be organized in bank, offices and homes. In this system only the authenticate person recover the documents or money from the lockers. In this security system fingerprint and OTP is used. In this system first person enrol user name and password and mobile number. If user name and password match then Finger of person will detectand store with ID. If the ID gets matches. Then four-digit code will be sent on authorized personmobile to unlock. So biometric and Bluetooth security is more advantages than other system. This system can also create a log containing check in and checkout of each user along with basicinformation.

1.3 IoT Based Accident Prevention & Tracking System for Night Drivers

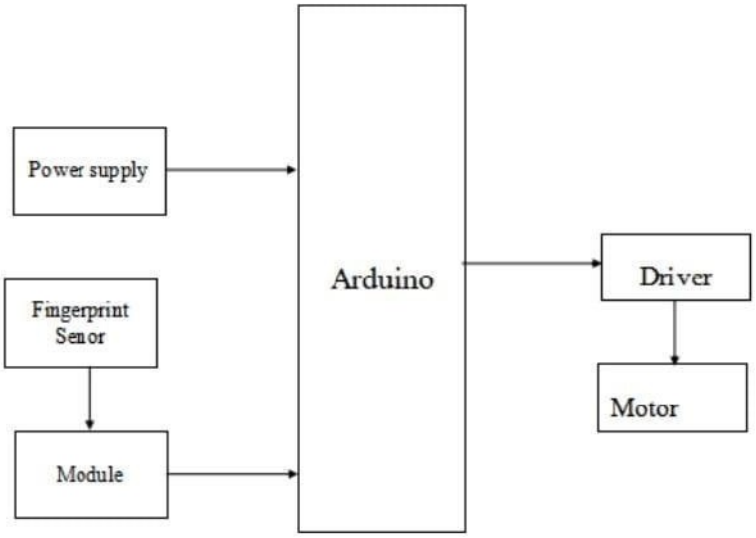
Fatal Road accidents can be easily avoided by understanding the psychological state of drivers. Majority of road accidents occur during night driving due to drowsiness state of vehicle drivers (Subject). This paper provides Eye Blink Monitoring System (EBM) that alerts the subject during state of drowsiness. An embedded system based on psychological state of Subject by monitoring eye movements and head movements are useful in warning drivers during initial sleep cycle phase of drowsiness. The physiological sleep state analysis of subject can be determined by monitoring subjects' eye-blink rate using an IR sensor and head movement using an accelerometer. A normal eye blink rate has no effect on the output of the system.

However, if subject is in extreme state of sleep-cycle, then IR sensor receives abnormal eye blinking rate & an alarm is initiated to wake the subject. An Internet of Things (IOT) enabledsensors are used to transmit the entire data collected by sensors over a smart grid network forquick response team to take actions under emergency conditions.

1.4 SMART HELMET AND INTELLIGENT BIKE SYSTEM

The main objective of this paper is to build a safety system which is integrated with the smart helmet and intelligent bike to reduce the probability of two-wheeler accidents and drunk drivecases. The flex sensor checks if the person wearing the helmet or not. Alcohol sensors detect the alcoholic content in riders' breath. If the rider is not wearing the helmet or if there is any alcohol content found in rider's breath; the bike remains off. The bike will start until the riderwears the helmet and if there is no alcoholic content present. When the rider crashes, helmet hits the ground, sensors detect the motion and tilts of helmet and reports the occurrence of an accident. It sends information of the corresponding location to family members of the rider and emergency contact number Index Terms: Biker's safety, Accident detection, Smart helmet, Alcohol detection.

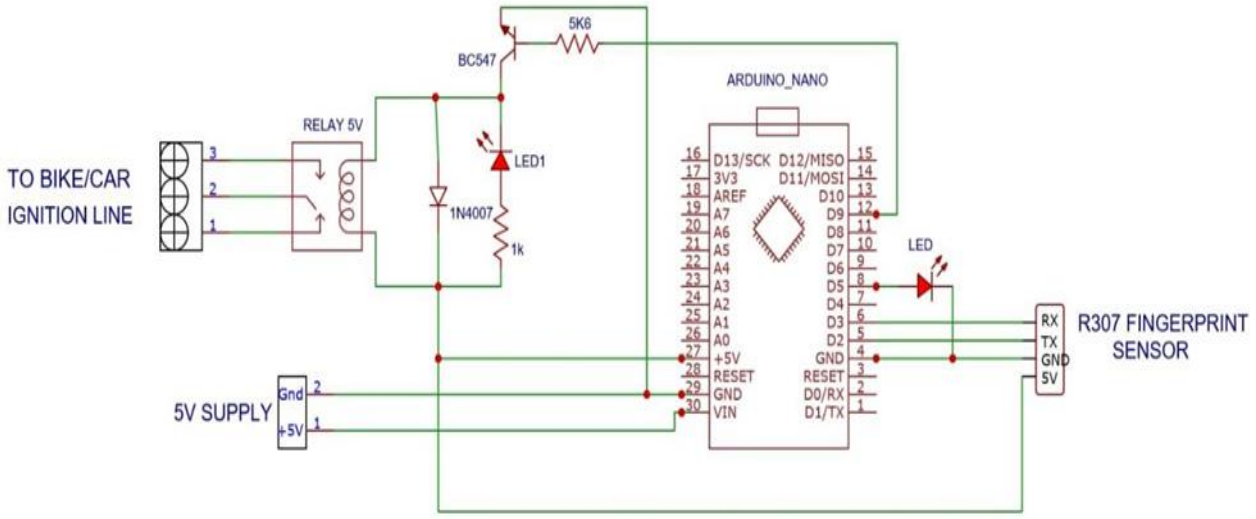
BLOCK DIAGRAM



V. PROBLEM IDENTIFICATION

Fingerprint bike starters use a fingerprint module that compares data from a user's finger to data already stored in the module. When the bike starts, the microcontroller will only ignite thebike if the fingerprint data matches the stored data. Fingerprint recognition technology can helpkeep the bike secure by only allowing access to those whose fingerprints are pre-stored in the memory. These fingerprints are retained even if the battery drains or there is a complete power failure. This eliminates the need for remembering a combination password or PIN, or keeping track of keys.

VI. CIRCUIT DIAGRAM



METHODOLOGY

Arduino Controlled Smart Bike Starter

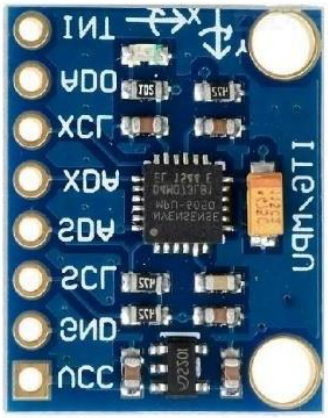
This system uses a fingerprint sensor to access the motorcycle and a relay to control the ignition.The fingerprint sensor is designed to fit inside electrical devices. Fingerprint Based Smart Bike This system uses a fingerprint module to start the ignition of the vehicle. The module is placed inside the vehicle and its location is tracked in real-time. Fingerprint Based Motorbike Starter Using Arduino This system uses a fingerprint sensor module to authenticate a person by taking their finger input. It uses four push buttons to register new fingerprints, delete stored fingerprints, or match stored fingerprints. Here are some other details about fingerprint-based bike starting systems: The fingerprint sensor collects accurate fingerprint data. If the fingerprint matches the registered fingerprint, the bike will start. If the fingerprint does not match, a red LED will glow.The fingerprint sensor is designed to fit inside electrical devices. The fingerprint module is placedinside the vehicle. The fingerprint module can be used to protect the vehicle from being stolen.

COMPONENTS DESCRIPTION

1. ARDUINO UNO

Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message – and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board.

2. ACCELEROMETER SENSOR



The capacitance accelerometer senses the changes in capacitance between microstructures. If the accelerative force moves one of these microstructures, the capacitance changes and the accelerometer translates this capacitance into voltage for interpretation.

3. GSM MODULE

The GSM module plays a crucial role in the communication between devices and the GSM network. Itis responsible for establishing and maintaining the communication link between the device and the network. The module also handles the encryption and decryption of data, which ensures the security of the communication's

4. FINGERFRINT SENSER

Fingerprint recognition systems work by examining a finger pressed against a smooth surface. The finger's ridges and valleys are scanned, and a series of distinct points, where ridges and valleys end or meet, are called minutiae. These minutiae are the points the fingerprint recognition system uses for comparison.

5. VIBRATION SENSER

The vibration sensor consists of a piezoelectric crystal that has a seismic mass attached to it. When the equipment/machine under study experiences vibrations, the crystal is subjected to stress, and an electricsignal is generated, which is then converted to valuable data.

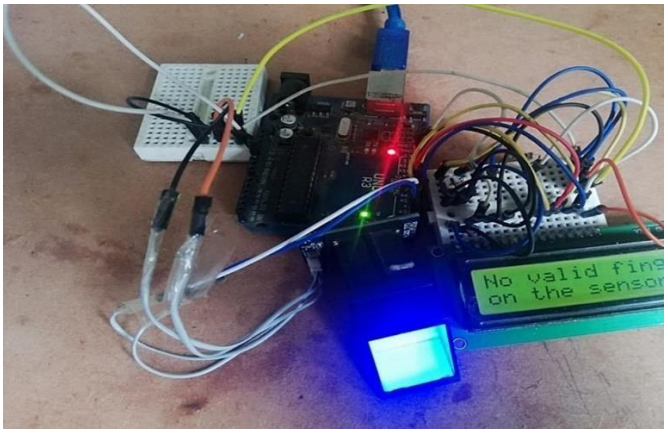
6. DC MOTOR

Motors convert electrical energy into mechanical energy. A **DC motor** is an electric motor that runs on direct current (DC) electricity. The internal configuration of a DC motor is designed to harness the magnetic interaction between a current-carrying conductor and an external magnetic field to generaterotational motion.

7. MICROCONTROLLER ATMEGA 328

The Atmel 8-bit AVR RISC-based microcontroller combines 32 KB ISP flash memory with read-while-write capabilities, 1 KB EEPROM, 2 KB SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byteoriented 2-wire serial interface, SPI serial port, 6-channel 10-bit A/D converter (8-channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal oscillator, and five software selectable power saving modes. The device operates between 1.8-
5.5 volts. The device achieves throughputs approaching 1 MIPS.

8. RESULT DESIGN AND IMPLEMENTION



ADVANTAGES

- It is highly accurate.
- It is unique and can never be the same for two persons.
- It is the most economical technique.
- It is easy to use.
- Use of small storage space.

APPLICATIONS

- A person can start the vehicle, but only upon fingerprint authentication can the person put thevehicle into motion.
- A fingerprint bike starter project is a safe and secure way to start a bike. The system is portableand uses little power.
- recognition of the fingerprint, the valve fixed in the outlet of fuel tank opens, thereby allowingthe flow of fuel to the engine.

CONCLUSION

As we all know, these days motor vehicle accident is not an odd incident. Also there is regular increases in the theft of motor vehicle after the year by year. This finger print base biometric authentication provides a strong secure authentication of owners and riders. Also it will sent the location of the vehicle every second and alerts.

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