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VEHICLE ANTI-THEFT FACE RECOGNITION SYSTEM

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INTRODUCTION

The vehicle crimes result in vehicle theft and trafficking, which affect owners, companies which are responsible for insurance, and public safety in all countries, and have connections to major organized crime networks. In order to prevent vehicle theft, latest systems based on innovative technologies must be implemented to assist law enforcement agencies as well as vehicle owners in tracking, controlling, recovering, and arresting thieves. With this presented system, vehicle pursuing, and IOT based control system, which monitors, controls, and proposes clear information about nearby law enforcement agency headquarters that perhaps be analyzed rapidly and a reliable mode of transportation. A networked connection of devices for instance cell phones, sensors, PDAs and additional devices that communicate and connect without any human interference with each other is identified as Internet of Things (IoT).

Internet-of-vehicles is the area in which there is communication between vehicles and surroundings the information is shared with the network. The current paper is focused on microcontrollers for real time- vehicle monitoring and IoT technology describing the vehicle-tracking and control system. GPS, GPRS or GSM, and by using a microcontroller to incorporate this device, which allows the car to be tracked easily. The device can control and monitor vehicles remotely via SMS control (emergency stop by cutting-off the fuel impeller) People use vehicle tracking devices as a recovery mechanism and a burglary deterrent. The biggest advantage of vehicle tracking devices is that they provide surveillance by detecting the vehicle's location, and can be used as a deterrent for stolen cars by sending their position coordinates to a police center as a stolen vehicle warning. When a police station gets a stolen car warning, they will take steps to detect the burglary.

Vehicle-tracking is the most widely used software nowadays. For example, the maps provided to vehicle drivers can perform a major task in monitoring in addition to vehicle tracking. Main issue is that car owners will not be able to identify their vehicle in a location due to conflicting maps, which makes tracking and monitoring difficult. It necessitates the need of such devices to locate and detect where items were at any given time, as well as the distance traveled on a trip to a car. This may be an extra point to help the police detect robberies and locate the car by drawing on reports from these licensed databases and reviewing and evaluating them.

LITERATURE SURVEY

A.M. Salman in 2020, conceptualized as well as executed a system aimed at conveying essential data for pursuing to reduce the conveyed data between GPS receiver and the host-server. Module combines GPS, GSM for conveying data and Arduino-UNO R3 microcontroller. Position coordinates are conveyed to a server by GSM as well as GPRS sends Hypertext Transfer Protocol requests. The duration between two Hypertext Transfer Protocol requests was ten seconds when the vehicle moved and no Hypertext Transfer Protocol requests when the vehicle was stopped. Information is displayed by Google Maps after storing it in the server. This made use of web and mobile applications for tracking and retrieving information.

O. A. Awad as well as D. A. Bahr in 2019 came up with a system to avoid automobile vehicle theft, that is an integrated anti-theft system. This system is based on Raspberry Pi and LTE communication technology Release Module is mounted in the hidden place of automobiles. Whenever theft occurs, a call from the proprietor's mobile phone is started to GSM, which Raspberry Pi disconnects as well as trigger GPS to broadcast automobile location information to proprietor as SMS through GSM also possibly monitor it on Google-map, triggering Pi-Camera to take a still image of offender finally sends it to proprietor by superior internet services. proprietor directs regulator signal to halt machine ignition module.

P. Chandra Shreyas et al in 2019 came up with a blueprint for tracking and also monitoring theft so that owners can identify them. When the offender switches-on his/her vehicle, GPS a Qumulate the variations of entity position as well as embedded photographic-camera takes a still image of the burglar and delivers it to Raspberry Pi. In addition to this, information is stored in the cloud, which collects all the data including the data from the GSM module as well as is sent to the vehicle's owner. Property proprietor checks the picture and in case of an intruder, he can turn off the vehicle by a special mobile app which can exchange information with the cloud in addition get remote access to the automobile.

Shruthi. K et al implemented an anti-robbery system suitable for taking offender photographs as well as mailing it. which assists in supervision as well as pursuing vehicles, which has been extended for utilization of car owners to empower them to take security contrary to robbery. This setup further enhances to perform as Black box of airplanes. Owner keeps position backup to decrease driver overtime, therefore enhances yield unique purposes for example passage of inmates or protected transport.

K. Kumar Jha implemented an IoT based oil monitoring system. This system compromises Temperature, Ultrasonic sensor and photodiode sensor with interfacing microcontroller and Arduino based programming of each sensor. The data obtained from various samples and analysis of each sample using Thing speak Channel is a math work product. This paper explains details of sensor programming and extracting input and analysis of output data in real time.

➢ EXISTING SYSTEM AND PROPOSED SYSTEM

The existing system is made by using a raspberry pi microcontroller. But in this proposed system we had used ESP 32 and ESP 32 CAM instead of raspberry pi. The ESP 32 costs very less when compared to the raspberry pi.

The ESP 32 CAM comes with an inbuilt camera and it consists of Wi Fi and Bluetooth. So, by using ESP 32 and ESP 32 CAM we can get the same output in less cost. Here we are considering ESP 32 CAM instead of raspberry pi for its relative specifications.

HARDWARE DESCRIPTION

➢ ESP 32

Few years back, ESP8266 took the embedded IoT world by storm. For less than $3, you could get a programmable, Wi Fi enabled microcontroller being able to monitor and control things from anywhere in the world. Now Espressif (The semiconductor company behind the ESP8266) has released a perfect supercharged upgrade: the ESP32. Being successor to ESP8266; not only does it have Wi Fi support, but it also features Bluetooth 4.0 (BLE/Bluetooth Smart) – perfect for just about any IoT project.

When we think about using a microcontroller for a project, we usually consider an Arduino. It's inexpensive, easy to use and has a generous number of digital I/O ports, and a few analog inputs as well. But the Arduino, for all of its wonderful benefits, is lacking in a number of areas. The first one is speed, the popular Arduino AVR series of boards run at 16 MHz. That's certainly fast enough to build thousands of applications, but it's a bottleneck for others.

The Arduino certainly has enough digital outputs and inputs to satisfy most requirements, and its analog inputs are also useful. But adding features like Wi-Fi and Bluetooth requires external components. Let's face it, the Arduino has been around since 2005. That's fifteen years, which in terms of technology is one.

The ESP32 is actually a series of microcontroller chips produced by Espressif Systems in Shanghai. It is available in a number of low-cost modules.

fig.1 ESP32.

➢ ESP32 CAM

The ESP32-CAM is a small size, low power consumption camera module based on ESP32. It comes with an OV2640 camera and provides an onboard TF card slot.

The ESP32-CAM can be widely used in intelligent IoT applications such as wireless video monitoring, Wi Fi image upload, QR identification, and so on.

fig.2 ESP32 CAM.

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➢ Relay

A relay is an electromechanical switch, which performs ON and OFF operations without any human interaction. General representation of double contact relay is shown in fig. Relays are used where it is necessary to control a circuit by a low-power signal (with complete electrical isolation between control and controlled circuits), or where several circuits must be controlled by one signal.

fig: 3 RELAY

➢ Reed Switch

fig.4 Reed Switch.

The reed switch was born in 1936. It was the brainchild of W.B. Ellwood at Bell Telephone Laboratories, and it earned its patent in 1941. The switch looks like a small glass capsule with electrical leads poking out of each end.

The switching mechanism consists of two ferromagnetic blades, separated by only a few microns. When a magnet approaches these blades, the two blades pull toward one another. Once touching, the blades close the normally open (NO) contacts, allowing electricity to flow. Some reed switches also contain a non-ferromagnetic contact, which forms a normally closed (NC) output. An approaching magnet will disconnect the contact and pull away from the switching contact.

➢ Push Buttons

A push-button (also spelled pushbutton) or simply button is a simple switch mechanism for controlling some aspect of a machine or a process. Buttons are typically made out of hard material, usually plastic or metal. The surface is usually flat or shaped to accommodate the human finger or hand, so as to be easily depressed or pushed. Buttons are most often biased switches, though even many unbiased buttons (due to their physical nature) require a spring to return to their un-pushed state. Different people use different terms for the "pushing" of the button, such as press, depress, mash, and punch.

fig.5 Push Buttons.

Digital Humidity and Temperature Sensors (DHT11)

This DHT11 Temperature and Humidity Sensor features a calibrated digital signal output with the temperature and humidity sensor capability. It is integrated with a high-performance 8-bit microcontroller. Its technology ensures high reliability and excellent long-term stability. This sensor includes a resistive element and a sensor for wet NTC temperature measuring devices. It has excellent quality, fast response, anti-interference ability, and high performance.

fig.6 DHT11 Sensor.

➢ DC MOTOR

A DC motor is an electric motor that runs on direct current (DC) electricity. In any electric motor, operation is based on simple electromagnetism. A current-carrying conductor generates a magnetic field; when this is then placed in an external magnetic field, it will experience a force proportional to the current in the conductor, and to the strength of the external magnetic field. As you are well aware of from playing with magnets as a kid, opposite (North and South) polarities attract, while like polarities (North and North, South and South) repel. 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 generate rotational motion.

fig.7 DC Motor.

Piezo Buzzer

fig.8 Piezo buzzer.

A buzzer or beeper is an audio signaling device, which may be mechanical, electromechanical, or piezoelectric. Typical uses of buzzers and beepers include alarms, timers and confirmation of user input such as a mouse click or keystroke. A piezoelectric element may be driven by an oscillating electronic circuit or other audio signal source, driven with a piezoelectric audio amplifier. Sounds commonly used to indicate that a button has been pressed are a click, a ring or a beep

➢ Light Emitting Diode

A **light-emitting diode** (**LED**) is a two-lead semiconductor light source. It is a p-n junction diode that emits light when activated. When a suitable current is applied to the lead's electrons are able to recombine with electron holes within the device, releasing energy in the form of photons. This effect is called electroluminescence, and the color of the light (corresponding to the energy of the photon) is determined by the energy band gap of the semiconductor. LEDs are typically small (less than 1 mm^2) and integrated optical components may be used to shape the radiation pattern.

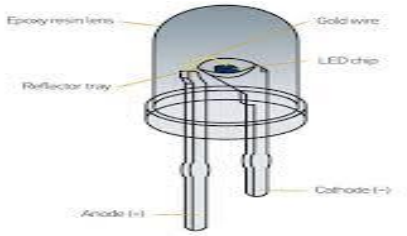

fig.9 Led.

➢ Schematic Diagram

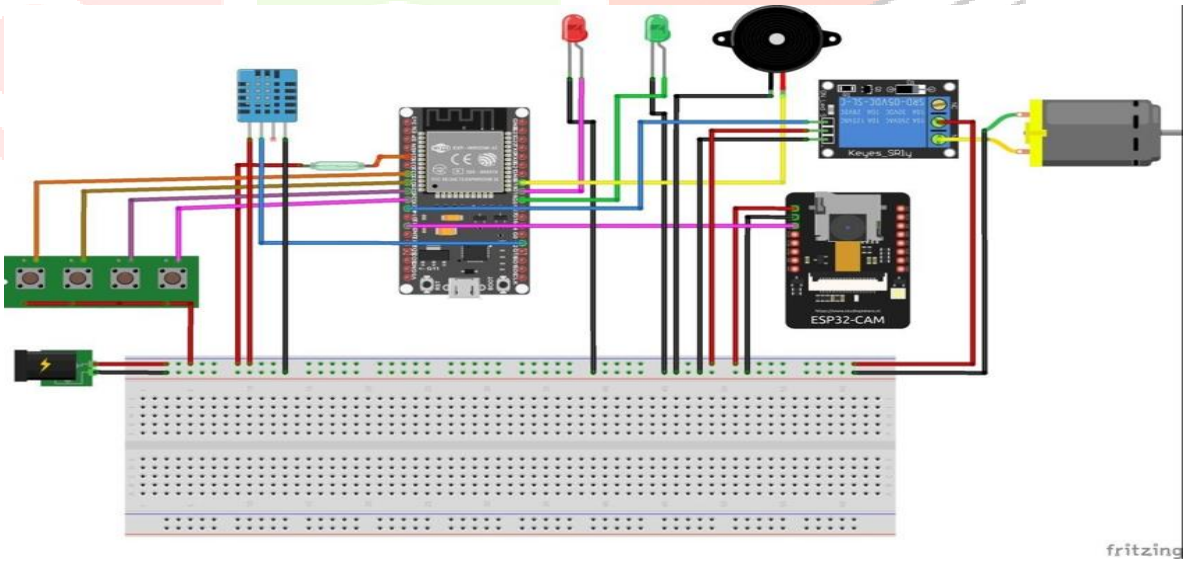

fig.10 Schematic Diagram.

SOFTWARE DESCRIPTION

➢ Arduino software

The Arduino Integrated Development Environment or Arduino Software (IDE) contains a text editor for writing code, a message area, a text console, a toolbar with buttons for common functions and a series of menus. It connects to the Arduino and Genuine hardware to upload programs and communicate with them.

➢ Steps to Write Program

- · **Step 1**

  Arduino microcontrollers come in a variety of types. The most common is the Arduino UNO but there are specialized variations. Before you begin building, do a little research to figure out which version will be the most appropriate for your project.

- · **Step 2**

  To begin, you'll need to install the Arduino Programmer, aka the integrated development environment (IDE).

- · **Step 3**

  Connect your Arduino to the USB port of your computer. This may require a specific USB cable. Every Arduino has a different virtual serial-port address, so you 'll need to reconfigure the port if you're using different Arduinos.

- · **Step 4**

  Set the board type and the serial port in the Arduino Programmer.

- · **Step 5**

  Test the microcontroller by using one of the preloaded programs, called sketches, in the Arduino Programmer. Open one of the example sketches, and press the upload button to load it. The Arduino should begin responding to the program: If you've set it to blink an LED light, for example, the light should start blinking.

- · **Step 6**

  To upload new code to the Arduino, either you'll need to have access to code you can paste into the programmer, or you'll have to write it yourself, using the Arduino programming language to create your own sketch. An Arduino sketch usually has five parts: a header describing the sketch and its author; a section defining variables; a setup routine that sets the initial conditions of variables and runs preliminary code; a loop routine, which is where you add the main code that will execute repeatedly until you stop running the sketch; and a section where you can list other functions that activate during the setup and loop routines. All sketches must include the setup and loop routines.

- **Step 7**

  Once you've uploaded the new sketch to your Arduino, disconnect it from your computer and integrate it into your project as directed.

➢ **Flow chart**

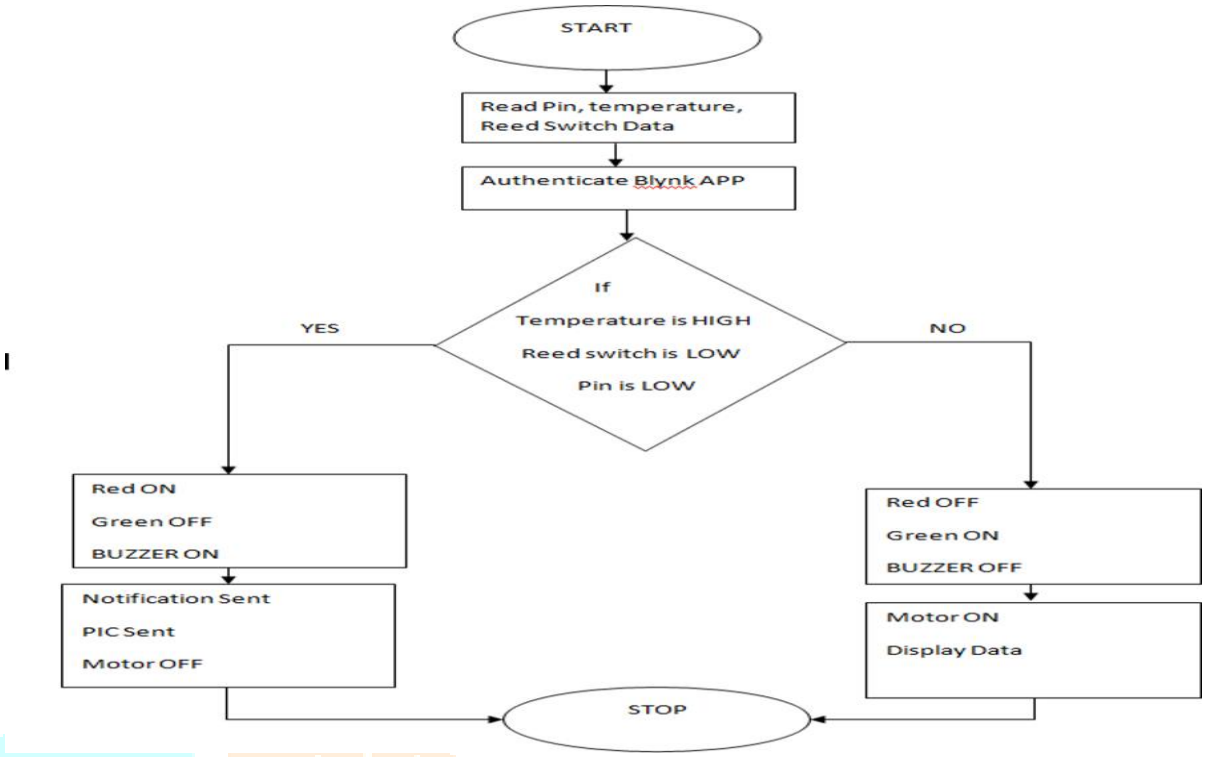

fig.11 Flow Chart.

CONCLUSION

The ongoing research in the field of IoT and its implementation in full or partial manner will improve the quality of life. Thus, the proposed project "IoT Based Advanced Vehicle System" would take the security level a step forward and try to cover many of the loopholes which are in existing technology. The verification shows that the IOT based advanced vehicle System is realistic and can control the theft automatically. The response time delay is also less. This IOT based advance vehicle system enables user safety by seat belt compulsion, key less locking /unlocking system to operate the car. In addition to the above, it gives security from towing of car and theft through the car window. The system is ideal for cars, further it can be used for other vehicles too by using these components and modules used in this project. IOT based advance vehicle system offers utmost efficiency, convenience, safety & reliability. It is an ideal solution for car users.

REFERENCES

[1] M.S. Joshi and Deepali V. Mahajan, "vehicle security system for defending against collaborative attack system"

International Journal of Innovative Technology and Exploring Engineering, vol. 4, no.2,

July 2014.

[2] Ms. S.S. Pethkar, Prof. N. Srivastava, Ms.S.D.Suryawanshi ,"RFID, GPS andGSM Based Vehicle Tracking and Employee Security System",

International Journal of Advanced Research in Computer Science and Electronics

Engineering, vol. 1, no. 10, Dec 2012.