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Research Article

Crime Detection and Criminbal Identification Using IOT

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Abstract

In our project, we propose an approach for the design and implementation of crime detection and criminal identification for Indian cities using IoT techniques. Our approach id divided into six modules, namely-Data Extraction (DE), Data Preprocessing (DP), GSM technology, Google map representation, advanced embedded system (ES). First module, DE extracts the unstructured crime dataset from various crime web sources, during certain period time. Second module, DP cleans, integrates and reduces the extracted crime data into structured crime instances. Safeguard measures are taken for the crime database accessibility. Rest four modules are useful for crime detection, criminal identification and prediction, and crime verification, respectively. Crime detection is analyzed with advanced embedded, which iteratively generates two crime clusters that are based on similar crime attributes. Our approach contributes in the betterment of the society by helping the investigating agencies in crime detection and criminals identification, and thus reducing the crime rates.

Keywords: Serial Parellel Transmission; FP Sensor; GSM Module; Crime Identification

Introduction

The future Internet, designed as an "Internet of Things" is foreseen to be "a world-wide network of interconnected objects uniquely addressable, based on standard communication protocols". Identified by a unique address, any object including computers, sensors, RFID tags or mobile phones will be able to dynamically join the network, collaborate and cooperate efficiently to achieve different tasks. Including WSN sinsucha scenario will open new perspectives. Covering a wide application field, WSNs can play an important role by collecting surrounding context and environment information. However, deploying WSNs configured to access the Internet raises novel challenges, which need to betack led before taking advantage of the many benefits of such integration. The main contributions of this paper can be summarized as follows: We look at WSNs and the Internet holistically, in line with the vision where WSNs will be a part of an Internet of Things. Thereby, we identify representative application scenarios for WSNs) from the multidimensional WSN design space, in order to obtain insights into issues involved with the integration.

Existing method

Crime Detection and Criminal Identification is one of the hot topics in embedded systems industry. The evidence from the criminals is collected by using finger print sensors. In this project ATMEL based microcontroller monitors, GSM module and finger print sensors are used. The police authorities have their own servers individually to access the criminals like National Crime Records Bureau (NCRB), Crime and Criminal Tracking Network System (CCTNS) and Red Eye. Alert message is send by using GSM Module. If the details are recorded then the ATMEL processor will send a message to authorized person through GSM modem and the investigation takes place. But the drawback in this system is we cannot access the criminal data throughout the world. For this purpose, we proposed the following system.

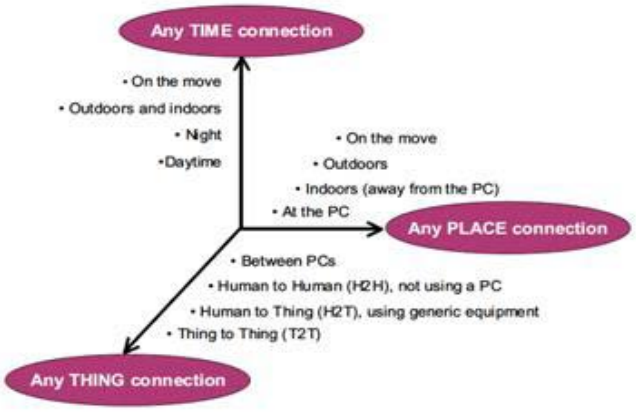

Figure 1: Methodology Introduction to Iot Technology.

Proposed system

In the present scenario, everything is based on IOT. In our system by using IOT the data can be accessed throughout the world. The finger prints collected from the finger print sensor will be tracked by using advanced central data bases like Gods Eye. Gods Eye software is used to track criminal data from all the servers by using IOT. By using this, we can easily detect the criminals from all over the world. In this process each and every criminal is investigated by them. If any fingerprint is matched then message can be sent by using GSM module to the authorized persons. And also the image of the person is captured and sent through mail.

Methodology

Introduction to iot technology

The term "Internet of Things" has come to describe a number of technologies and research disciplines that enable the Internet to reach out into the real world of physical objects. The Internet of Things, also

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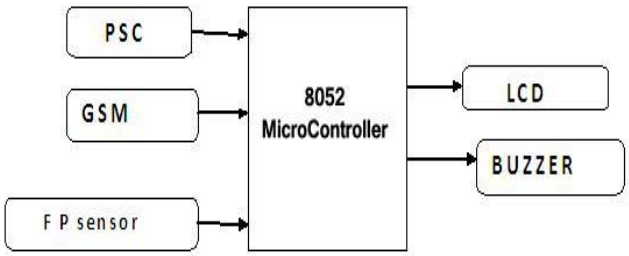

Figure 2: Block Diagram

called The Internet of Objects, refers to a wireless network between objects. From any time, any place connectivity for anyone, we will now have connectivity for anything (Figure 1).

Block diagram

This project is implemented for how we utilize the new technologies in our world are useful for everyone ,so we have to implement the internet based data monitoring system IOT technology is used for monitoring this parameters from anywhere (Figure 2 and 3).

Components

Hardware Components:

- Power supply
- LCD
- Finger print sensor
- GSM Module
- Buzzer

Microcontroller 8052

The AT89S52 commonly known as 8052 is a low-power, high-performance CMOS 8-bit microcontroller with 8K bytes of in-system programmable Flash memory. The on-chip Flash allows the program memory to be reprogrammed in-system, the Atmel AT89S52 is a powerful microcontroller, which provides a highly-flexible and cost-effective solution to many embedded control applications.

The AT89S52 provides the following standard features:

- 8K bytes of Flash.
- 256 bytes of RAM.
- 32 Input Output lines.
- Two data pointers.
- Three 16 bit timer/counter.
- A six vector two level interrupt architecture.
- Full duplex serial port.
- On chip oscillator.
- Clock circuitry.

GSM modem SIM300 V7.03

The GSM modem is a specialized type of modem, which accepts a SIM card operates on a subscriber's mobile number over a network,

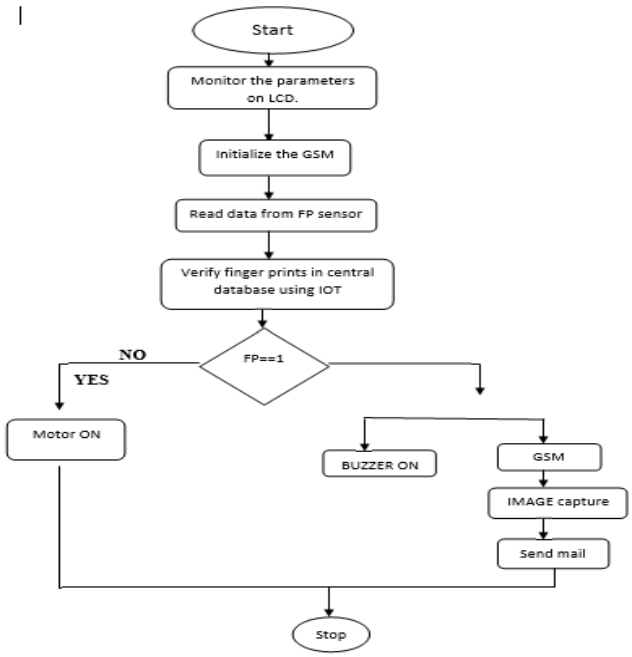

Figure 3: Flow Chart.

Figure 4: GSM module.

just like a cellular phone. Basically, it is a cell phone without display. Modem sim300 is a triband GSM/GPRS engine that works on EGSM900MHz, DCS1800MHz and PCS1900MHz frequencies. GSM Modem is RS232-logic level compatible, i.e., it takes-3v to -15v as logic high and +3v to +15 as logic low (Figure 4).

Features of GSM:

- Single supply voltage 3.2v-4.5v.
- Typical power consumption in SLEEP Mode: 2.5mA.
- SIM300 tri-band.
- MT, MO, CB, text and PDU mode, SMS storage: SIM card.
- Supported SIM Card: 1.8V, 3V.

FP sensor

The FIM10 (Fingerprint Identification Module) is a stand-alone fingerprint recognition device with built-in CPU. FIM10 is a NITGEN Version 1.0, and it is release at the date of February 11, 2004. FIM10 is a standalone Fingerprint Recognition Device with many excellent features. It provides the high recognition performance, the low power

dissipation and the RS-232 serial interface with the simple protocol for easy integration into a wide range of applications. It is a durable and compactable device and made into a fingerprint recognition module with NITGEN optics-based fingerprint sensor.

Applications

- The Food IOT
- The Health IOT
- Crime identification
- Police Department
- Atm's
- Banks

Observation and Result

We designed this project using IoT technology & Wireless technology, using the IOT technology we can monitor and transfer the sensors data through internet. Initially data is transfer to the pc using technology and then data is transfer to other PC using IOT concept.

Conclusion

In crime data clustering techniques plays a vital role to investigate the crime and it helps for solving the unsolved crimes easily. By grouping the data with similar objects we can easily solve the unsolved crimes. For finding similarity objects partitioning clustering algorithm is one of the finest method. It is observed that finding similar words and collect them in a single cluster which helps in crime analysis. This paper deals with the study of clustering techniques and affinity measures in crime data.

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