IOT BASED PATIENT DATE BASE MANAGEMENT SYSTEM USING BIOMETRIC

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ABSTRACT **- In the Healthcare industry, when it comes to Patient Safety and Security, the most debated and talked about subjects are Patient Identification and Patient Data Integrity. Fingerprint Recognition Technology has become part of our daily lives. Few of its most common uses are, timekeeping systems for payroll purpose and Smart-phones with the ability to identify users based on their finger prints. In the similar lines, some of the hospitals are exploring the use of fingerprint scanners. The approach has both benefits and drawbacks. Since the biological pattern found in the fingerprints of every individual is unique and permanent, the use of fingerprint biometrics would provide to be a reliable and accurate method to efficiently identify the patients. The best part of the fingerprint technology is that apart from safeguarding the patient's information, it also protects against fraud and minimizes human intervention. Such use of this technology minimizes the need to enter new information into patients' records, limiting the human element involved with data entry thus making it easier to match the patients' records for his/her future visits. Organizations using the Fingerprint Recognition Technology mostly use the fingerprint scanners. Simply by placing a finger on a self-service kiosk or other reading device, the enrolled patients get registered quickly at the entry point of any facility, like the emergency department, inpatient areas or outpatient locations. Looking at the flip side of the coin, this technology tends to be more challenging and invasive for patients to accept and use at registration desk.**

I.INTRODUCTION

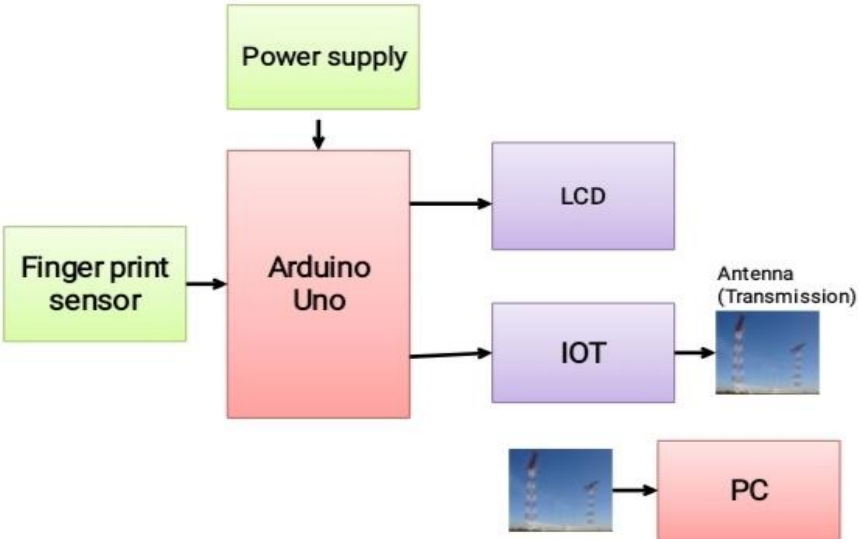
Doctor's facilities continuously require exceptional administration. The database of every last bit patients ought be helpful sufficient. Be that as also, there ought to a chance to be information avoidance. Likewise the tolerant information ought further bolstering be kept private in the event. Social insurance may be the The majority critical concern from claiming numerous nations in the universe. Enhancing those exists of patients particularly in the weaker parts of the particular social order which incorporate those elderly, physically Also rationally handicapped and additionally the chronically sick patients may be the main consideration will make progressed. On existing system, those information is recorded in the manifestation from claiming paperwork or looking into general stockpiling server. However by and large that information will be approachable on every last one of staff Furthermore doctors. Subsequently we need aid proposing another route the place tolerant What's more doctors fit to correspond through versatile requisition Furthermore web requisition.

II.SYSTEM DESIGN

The system IoT Based Patient Date Base Management System Using Biometric :

- Power supply
- Fingerprint sensor
- IOT
- LCD
- Arduino Uno.(Atmega 328p)
- PC (personal computer)

III.BLOCK DIAGRAM



INTERNET OF THINGS

Appliances and other embedded with electronic software,sensor, actuators, and connectivity which enables this Objects to connect and exchangedata.Each think is uniquely identifiable through is embeddedComputing system but is able toInter- operate within the existingInternet infrastructure .

DNA analysis devices for environmental/food/pathogen monitoring, or field operation devices that assist fire fighters in search and rescue operations. Legal scholars suggest regarding "things" as an "inextricable mixture of hardware, software, data and service".

The applications for internet connected devices are extensive. Multiple categorizations have been suggested, most of which agree on a separation between consumer, enterprise (business), and infrastructure applications. George Osborne, the former British Chancellor of the Exchequer, posited that the Internet of things is the next state of the information revolution and referenced the inter-connectivity of everything from urban transport to medical devices to household appliances.

The ability to network embedded devices with limited CPU, memory and power resources means that IoT finds applications in nearly every field. Such systems could be in charge of collecting information in settings ranging from natural ecosystems to buildings and factories, thereby finding applications in fields of environmental sensing and urban planning. Intelligent shopping systems, for example, could monitor specific users' purchasing habits in a store by tracking their specific mobile phones. These users could then be provided with special offers on their favourite products, or even location of items that they need, which their fridge has automatically conveyed to the phone. Additional examples of sensing and actuating are reflected in applications that deal with heart, water, electricity and energy management, as well as cruise-assisting transportation systems.

FINGERPRINT:

A fingerprint in its narrow sense is an impression left by the friction ridges of a human finger the recovery of fingerprints from a crime scene is an important method of forensic science. Fingerprints are easily deposited on suitable surfaces (such as glass or metal or polished stone) by the natural secretions of

sweat from the accrue glands that are present in epidermal ridges. These are sometimes referred to as "Chanced Impressions".

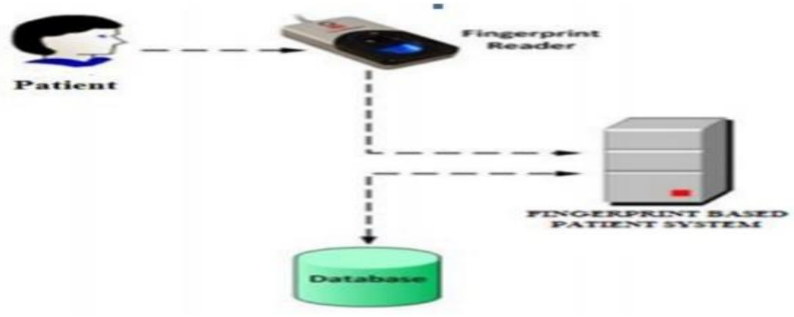


Fig. 2 System Architecture

In a wider use of the term, fingerprints are the traces of an impression from the friction ridges of any part of a human or other primate A print from the sole of the foot can also leave an impression of friction ridges.

Deliberate impressions of fingerprints may be formed by ink or other substances transferred from the peaks of friction ridges on the skin to a relatively smooth surface such as a fingerprint card. Fingerprint records normally contain impressions from the pad on the last joint of fingers and thumbs, although fingerprint cards also typically record portions of lower joint areas of the fingers.

Human fingerprints are detailed, nearly unique, difficult to alter, and durable over the life of an individual, making them suitable as long-term markers of human identity. They may be employed by police or other authorities to identify individuals who wish to conceal their identity, or to identify people who are incapacitated or deceased and thus unable to identify themselves, as in the aftermath of a natural disaster. Fingerprint analysis, in use since the early 20th century, has led to many crimes being solved. This means that many criminals consider gloves essential.

LCD(liquid crystal display):

LCD is used to display the results of the system operation such as sensed values, motor status et….A liquid-crystal display (LCD) is a flat panel display, electronic visual display, or video display that uses the light modulating properties of liquid crystals. Liquid crystals do not emit light directly. The LCD standard requires 3 control lines and 8 I/O lines for the data bus. The most commonly used Character based LCDs are based on Hitachi's HD44780 controller or other which are compatible with HD44580. In this tutorial, we will discuss about character Based LCDs, their interfacing with various microcontrollers, various interfaces (8-bit/4-bit), programming, special stuff and tricks you can do with these simple looking LCDs which can give a new look to your application.

AURDINO UNO CONTROLLER:

The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which six can be used as PWM outputs), six analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get started. The Arduino Uno differs from all preceding boards because it does not use the FTDI USB-to-serial driver chip. Instead, it features the ATmega8U2 programmed as a USB-to-serial

converter. Revision 2 of the Arduino Uno board has a resistor pulling the 8U2 HWB line to ground, making it easier to put into DFU mode.

"Uno" means one in Italian and was chosen to mark the release of Arduino Software (IDE) 1.0. The Uno board and version 1.0 of Arduino Software (IDE) were the reference versions of Arduino, now evolved to newer releases. The Uno board is the first in a series of USB Arduino boards, and the reference model for the Arduino platform; for an extensive list of current, past or outdated boards see the Arduino index of boards.

This is the Arduino Uno R3. In addition to all the features of the previous board, the Uno now uses an ATmega16U2 instead of the 8U2 found on the Uno (or the FTDI found on previous generations). This allows for faster transfer rates and more memory. No drivers needed for Linux or Mac (inf file for Windows is needed and included in the Arduino IDE), and the ability to have the Uno show up as a keyboard, mouse, joystick, etc.

The Uno R3 also adds SDA and SCL pins next to the AREF. In addition, there are two new pins placed near the RESET pin. One is the IOREF that allow the shields to adapt to the voltage provided from the board. The other is a not connected and is reserved for future purposes. The Uno R3 works with all existing shields but can adapt to new shields which use these additional pins.

The Arduino Uno is a microcontroller board based on the ATmega328. Arduino is an open-source, prototyping platform and its simplicity makes it ideal to use as well as professionals. The Arduino Uno has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

POWER SUPPLY

AC-DC adapter (wall-wart) or battery. The adapter can be connected by plugging a 2.1mm center-positive plug into the board's power jack. Leads from a battery can be inserted in the GND and Vin pin headers of the POWER connector. The board can operate on an external supply from 6 to 20 volts. If supplied with less than 7V, however, the 5V pin may supply less than five volts and the board may become unstable. If using more than 12V, the voltage regulator may overheat and damage the board. The recommended range is 7 to 12 volts.

Vin. The input voltage to the Arduino Uno board when it's using an external power source (as opposed to 5 volts from the USB connection or other regulated power source). You can supply voltage through this pin, or, if supplying voltage via the power jack, access it through this pin. 5V This pin outputs a regulated 5V from the regulator on the board. The board can be supplied with power either from the DC power jack (7 - 12V), the USB connector (5V), or the VIN pin of the board (7-12V). Supplying voltage via the 5V or 3.3V pins bypasses the regulator, and can damage your board. We don't advise it. 3V3. A 3.3volt supply generated by the on-board regulator. Maximum current draw is 50 mA. GND. Ground pins. IOREF. This pin on the Arduino Uno board provides the voltage reference with which the microcontroller operates. A properly configured shield can read the IOREF pin voltage and select the appropriate power source or enable voltage translators on the outputs to work with the 5V or 3.3V.

CONCLUSION

All over the world, governments, corporations, military establishments and others are using biometric technology for identification objectives. The use of biometrics is rapidly becoming the de-facto means of person authentication in healthcare because there is no other method more safe, secure, affordable, or efficient. Patient safety continues to be one of healthcare’s most pressing challenges, although there are

many angles from which patient safety can be addressed, the prevention of duplicate medical records and the elimination of medical identity theft stand out as two of the main culprits jeopardizing the integrity of the healthcare industry In addition placing patient safety atrisk, the root cause of these problems are generally inaccurate patient identification, a problem that can be rectified through the adoption of biometric technology.

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