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Virtual Banking System over IOT

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Abstract: ***This project aims at designing & developing biometric finger print technology based money transaction system for shopping. As extra global commercial activity becomes digitally based, banks are utilizing fresh technologies to develop next generation identification controls to combat fraud make transactions more safe, Now a day's ATM's plays major role in our society. But sometimes we are facing lot of problems due to ATMs. If we lost the virtual cards there is a chance of misusing our ATMs by someone. Even if we forgot the password we cannot do transactions. To avoid these drawbacks here we are introducing a new technology that is Virtual Banking System using IOT.***
Keywords: Ardunio Uno, Adafruit, Fingerprint Module, GSM modem, NodeMcu.

I. INTRODUCTION

The sensor device is a solid-state fingerprint sensor that constantly captures fingerprint information's. It is considered to integrate into devices for better-quality security &suitability. The sensor offers a reliable, rapid& user-friendly alternate to passwords, PIN's &other forms of user verification. User need not carry any physical cards (credit, debit etc.) or mobile phone for currency transaction. Consumer just need to retain finger print arrive transaction cash using keypads. This transaction data is sent to server done safe IOT (Wi-Fi) & further handling complete there. If the transaction is effective then user gets an SMS approval message to his itemized phone number. This is onboard computer contains of digit input and output ports. This onboard desktop be usually named as micro-controllers. The input and output port of the micro-controllers this are interfaced with dissimilar input & output modules dependent on the necessities. The microcontrollers is a communication medium to all this modules intricate in this project.

II. FUNCTIONAL BLOCK DIAGRAM AND DECRIPTION

Microcontroller takes the input from finger print module then checks whether the person is autherioused or not, If it is legal then it asks the password. Then enter the password through the keypad which is perform as input. If password is correct then account balance of the consumer is displayed on LCD & IOT device. Now consumer has to enter the shopping amount over Keypad. These value is associated with available balance. If enough funds are accessible then transaction finishes. Transaction data is sent to consumer over GSM network as SMS & also over IOT to browser. We can prolong the project by addition of the feature of eye retina scanning with display of image of particular consumer.

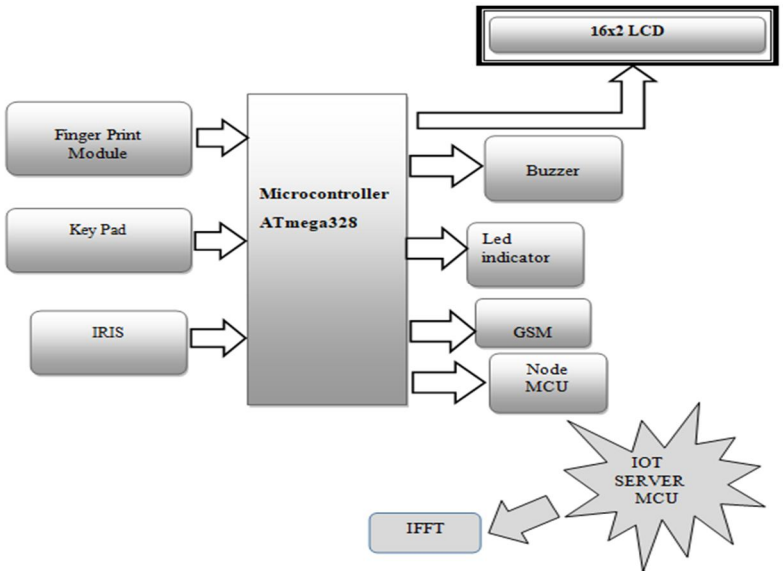


Figure 1: Proposed system block diagram

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III.PROPOSED SYSTEM FLOWCHART

To start the system when the finger print is access and it says enter the UID if no finger not found will go IRIS through MATLAB. If finger print access enter the UID, it will ask to select the bank here some options (ex: SBI, HDFC so on) are there to select bank. In that we select WDL or deposit. In that we select WDL is says enter the amount it display available balance on LCD. While we select deposit is says enter the account number that amount add to the available balance. This message sent to user through GSM module as well as IOT browser the transaction is complete.

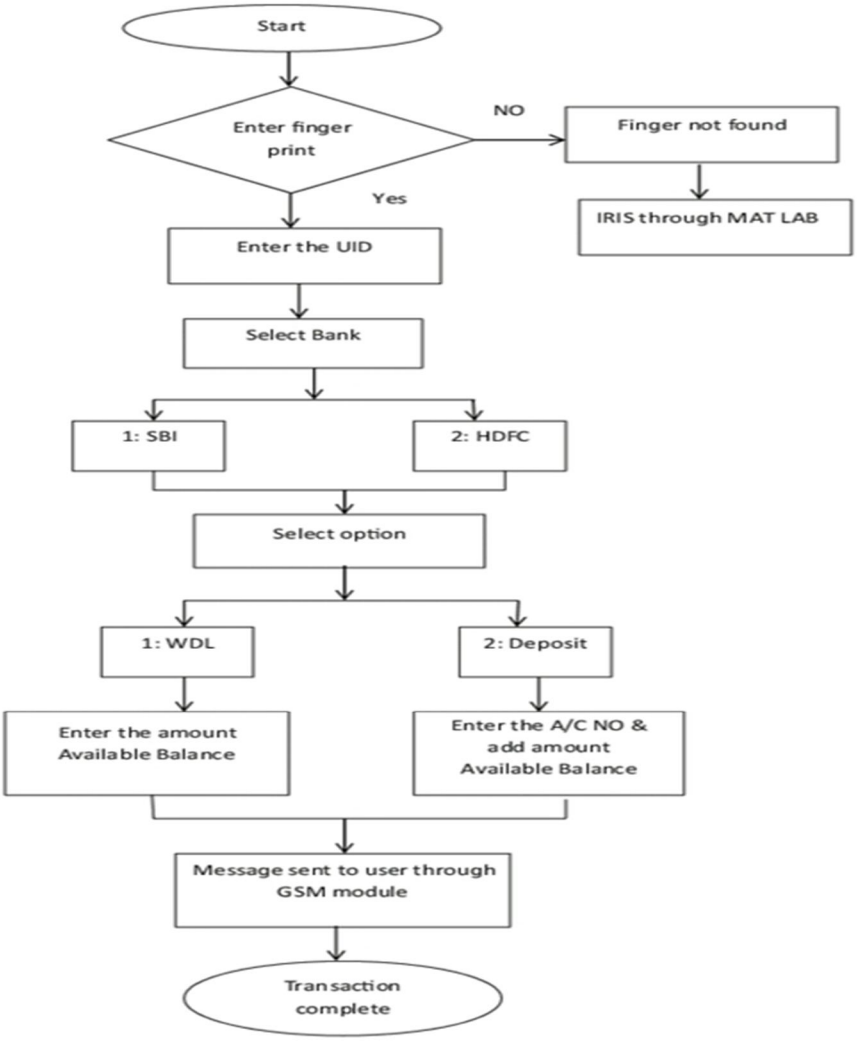


Figure 2: proposed system flowchart.

IV.SOFTWARE IMPLEMENTATION

A. Arduino IDE Software

Arduino is an open-source stage utilized for structure gear undertakings. Arduino incorporates both a physical programmable circuit load up (in many cases recommended as a microcontroller) and a dash of programming, or IDE (Integrated Development Environment) that keeps running on your PC, used to make and trade PC code to the physical burden up.

The Arduino stage has wound up being standard with individuals basically beginning with hardware, and everything considered. Dissimilar to most past programmable circuit sheets, the Arduino does not require a substitute bit of rigging so as to stack new code onto the board – you can essentially utilize a US-B interface. Likewise, the Arduino IDE utilizes a disentangled change of C++, making it less intricate to comprehend how to program.

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Fig 3: Example program in Arduino IDE

B. Adafruit IO

Adafruit IO is a stage intended to show, react, and communicate with the undertaking's information. Adafruit.IO can deal with and envision numerous feeds of information. Feed are the centre of Adafruit IO. They hold the information that is transferred and the metadata about the information, sensors push to Adafruit IO. Dashboards are an element coordinated into Adafruit.IO which permit to outline, diagram, check, log and show the information.

It gives administrations like

1) Communicating with microcontroller over the web.
2) Display information progressively, on the web.
3) Make venture web associated: Control engines, read sensors information and some more.

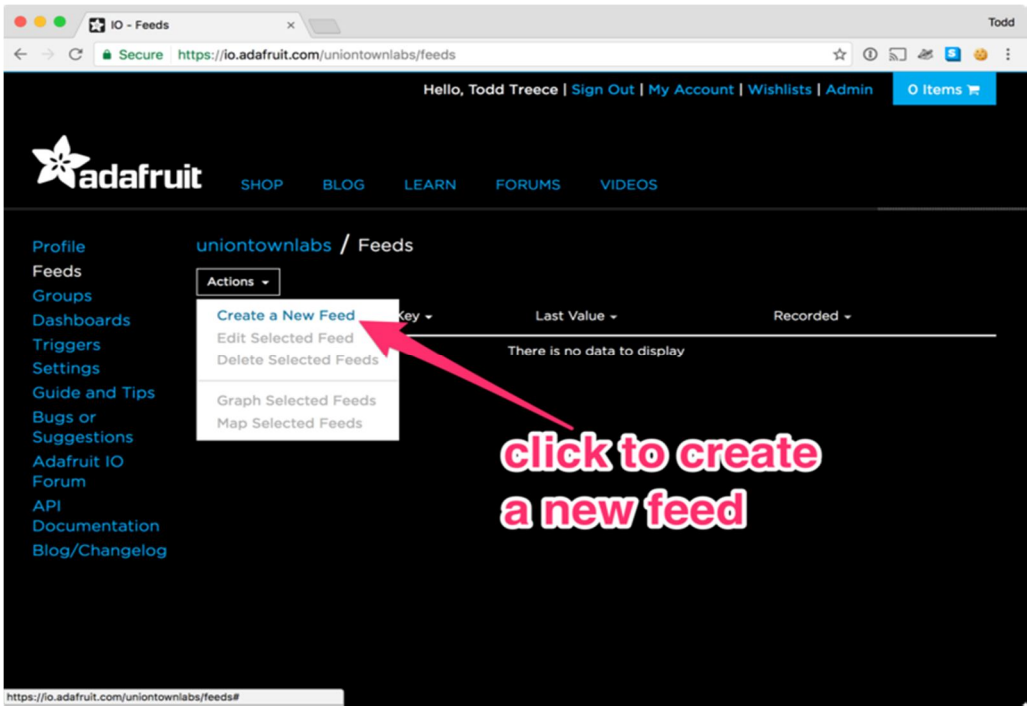


Fig 4: Steps to create new feed

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V. RESULTS

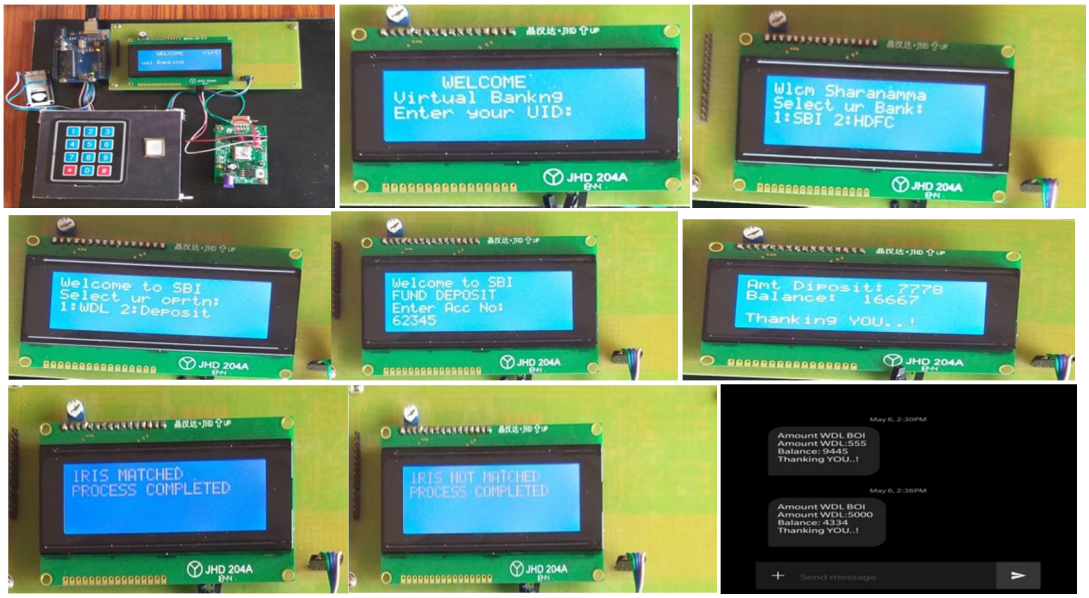


Fig 5: experimental view of a virtual banking system using IOT

In above figure, if the finger print is access its shows in display enter the UID Once we enter the UID and it gives the many option to select a bank for example 1:SBI , 2:HDFC and so on , In that we select WDL or deposit. In that we select WDL is says enter the amount it display available balance on LCD. While we select deposit is says enter the A/C number. While we select deposit is says enter the account number that amount add to the available balance. This message sent to user through GSM module as well as IOT browser the transaction is complete. If IRIS is matched that IRIS matched Process completed. If IRIS is not matched that IRIS not matched Process completed.

VI. COCNCLUSION AND FUTURE WORK

The project based on "VIRTUAL BANKING OVER IOT" is successfully designed for developing & designing biometric finger print technology based money transaction system for shopping by using fingerprint module, GSM and Node MCU.

By using internet and biometric methods which will eliminates the risk in the banking sector and allows the users to access the account in easy and secure manner. This project has great use in future.

Our paper "IOT BASED VIRTUAL BANKING" is mainly used for banking perpose like payments & transfer of money with additional secure without any virtual cards. We can extends as ATM machines without using any virtual cards money withdrawal & transfer & also addition of feature eye retina scanning for additional secure.

"IOT BASED VIRTUAL BANKING" is mainly intended to monitor the status of the device through server (Wi-Fi).

VII. ACKNOWLEDGMENT

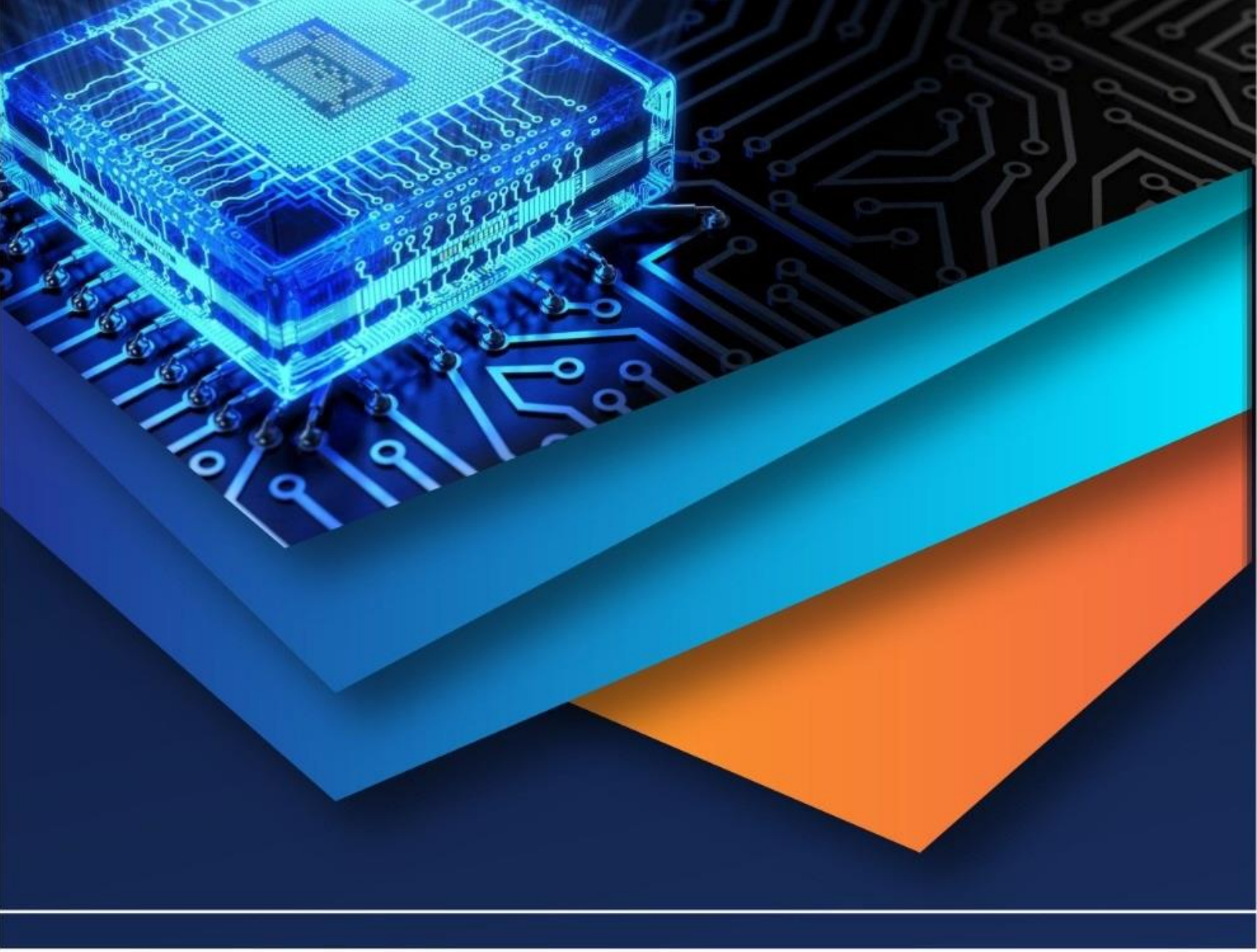
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