

An Efficient Identification System of Currency Status in ATM Machine Using IOT

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Abstract- In recent decade years, the e-networking system plays important role in banking sectors in many ways especially ATM system. ATM or Automated Teller Machines are fast replacing the processing of manual amount transaction directly in bank as a convenient way of drawing money from the banks. In a way ATMs are now rewriting the rules of financial transaction. A person no longer needs to carry a wallet full of paper money on his person. All he needs to do is fish out an ATM card, insert it in the slot, punch in a few details and go home with hard cash. ATMs are the first well known machines to provide electronic access to customers. With the advent of ATMs banks are able to serve their customers outside the banking hall. ATM is designed to perform the most important function of the bank, the money transaction. At the time of Indian money banned such as 500, 1000 Rs, the people has struggled lot against getting the money. The people were searching the money from all teller machines. But they are disappointed due to less or empty of the money from the teller machine and also very complicated for identifying the place of ATM machine which has money. This situation is continuing current time also. Our system is focused towards the identification of the ATM system which has money and status of the currency level also by using internet of things. The IoT is interconnected between ATM networking with subscriber to get know about the status of the money as well as ATM location which has more money.

Keywords- ATM, IoT, e-networking etc.,

I. INTRODUCTION

With the Advancement in the [1] technology in banking the withdrawal of money is made simple with the help of Automatic Teller Machine (ATM) machines. It has now become the widely preferred choice for cash withdrawal for consumers. As the number of customers accessing the ATM has been increased there is a [2] chance for the ATM with amount insufficiency when the customer arrives at the ATM terminal to request for the amount as per his need. In spite of its ease getting the required amount and denomination from the ATM has always proved to be a hurdle for consumers which will lead the customers again to be in search of other ATM to get cash. However this proves to be an

overhead for consumer to know in which ATM the cash is available. The IoT aims to unify everything in our world under a common infrastructure, giving us not only control of things around us, but also keeping us informed of the state of the things. So to overcome the above mentioned problem with ATM currency availability status an architecture is put forward by this work that uses the [5] concept of IoT in order to help the user find the nearest ATM with desired amount and denomination and reduce the operation cost of the ATM for bank utilities by actuating the electrical appliances with the help of microcontroller and sensors. By the concepts of IoT and wireless sensor network the work is done for easy cash search service where the user can know about the availability of cash in the respective ATM with the preferred denomination.

II. EXISTING SYSTEM

Every account holder must have a unique id card for the individual account having a unique pin. On the absence of this card, whatever be the adverse situation the use of this ATM service is not permitted. So, an Internet Of Things and Computer Vision based Smart ATM service is being proposed here, using Raspberry pi microcontroller based embedded system, where each person will be their own identity, where Fingerprint, Face, OTP verifications are key features for security, which in turn reduces the issue of fraud transactions, fraud ATM cards, hence security issue gets resolved.

Drawbacks of existing system

1. The existing system provides card less transaction for the ATM service by verifying the user through IOT server.
2. Money Availability status cannot be predicted in the existing ATM services.

III. PROPOSED SYSTEM

Our proposed work focuses on the ATM currency availability status using IoT technology. By accessing the [1] IOT Server data the user can find the nearest ATM with desired amount and denomination and reduce the operation cost of the ATM for bank utilities by actuating the electrical

appliances with the help of microcontroller and sensors. By the concepts of IoT and wireless sensor network the work is done for easy cash search service where the user can know about the availability of cash in the respective ATM with the preferred denomination.

Advantages of proposed system

Money Availability status of the Nearest ATM along with the denomination details can be obtained. This helps any ATM users to get the timely service as per their need.

IV. SYSTEM ARCHITECTURE

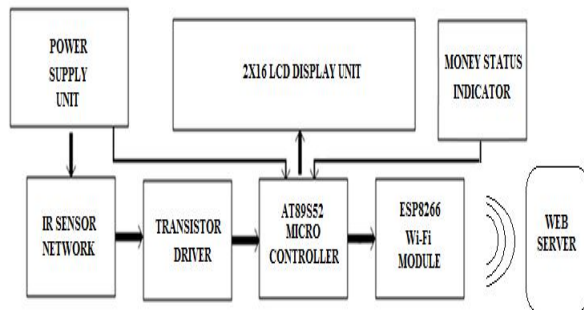


Fig 1- hardware unit

The system consists of IR (Infra Red) LED's, IR photodiodes', AT89S52 Microcontroller, ESP8266 wifi module and +5V power supply unit.

A. Hardware Requirements

At89s52 – Generally Microcontrollers have a CPU, Memory, Addressing Circuits, Interrupt handling circuits an internal UART, Ports, timers.

The microcontroller models vary in data sizes from 4 to 32 bits. Four bit units are produced in huge volumes for very simple applications. 8-bit access is more versatile then others 16-32 bit words are used in high speed application in signal processing.

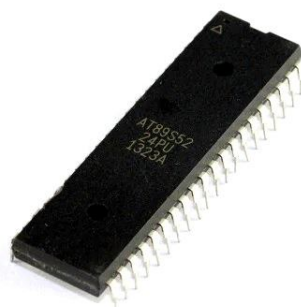


Fig 1-AT89S52 MICROCONTROLLER

IR Sensor –Infrared (IR) light is electromagnetic radiation with a wavelength between 0.7 and 300 micrometres, which equates to a frequency range between approximately 1 and 430 THz. IR wavelengths are longer than that of visible light, but shorter than that of terahertz radiation microwaves. Bright sunlight provides an irradiance of just over 1 kilowatt per square meter at sea level. Of this energy, 527 watts is infrared radiation, 445 watts is visible light, and 32 watts is ultraviolet radiation.

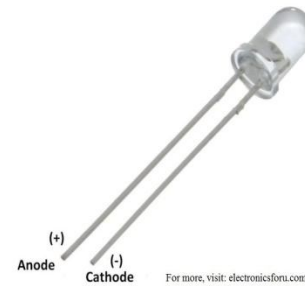


Fig 2-IR SENSOR

2x16lcddisplay-Will be used to visualize the data locally it will help to operate the device standalone



Fig 3 – 2X16 LCD DISPLAY

esp8266wi –fi- The ESP8266 is the best decision for Internet of Things due to its minimal effort and low power utilization capacities. It accompanies inbuilt WiFi Module, Full TCP/IP convention stack, onboard processing, and capacity features.. It has 17 General Purpose Input Output (GPIO) pins for interfacing with outside segments and works with 3.3V.



Fig 4 – ESP8266

Money indicator - This can be used to indicating the availability of the money in the ATM.



Fig 5- LIGHT EMITTING DIODE

B. Software Requirements

Operating System	: Windows Family
Tool	: Wamp Server
Testing Tool	: Selenium
Language (Front End)	: PHP
Language (Back End)	: My SQL

V. EXPERIMENTAL SETUP & RESULTS



Fig 6 - Developed hardware

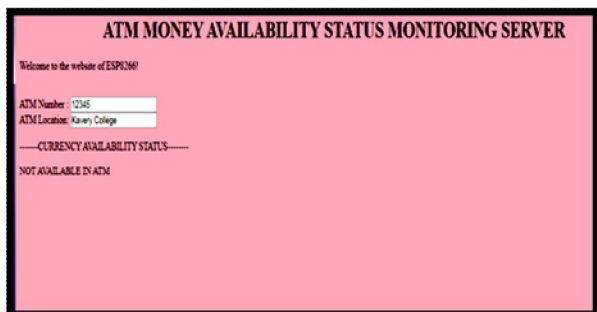


Fig: 7. Web page of the system

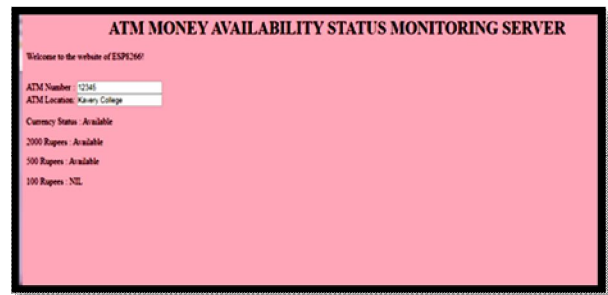


Fig 8- Currency 2000, 500 available & 100 Rs NIL

VI. CONCLUSION

Our System design has been made such that it reduces the burden of searching the money source from the ATM by providing with the ATM currency availability status using the latest IoT technology helps the user find the nearest ATM with desired amount and denomination and reduce the operation cost of the ATM for bank utilities by actuating the electrical appliances with the help of microcontroller and sensors.

VII. FUTURE ENHANCEMENT

The model of currency status in the ATM is proposed we can easily identified the money availability in the near ATMs, In the future system will develop cash availability and also their counting the exact amount in the ATM.

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