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# Developing a Smart Approach for ATM Crime Detection and Avoidance with GSM and Voice Command

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**ABSTRACT:** The proposed framework will give propelled ATM burglary security framework. The afflatus for the venture is picked up from the news and issues which are going on in our day by day life. Presently a day's theft or burglary of ATM is superabundantly expanded so because of that we attempting to reveal solution for it. Keeping the strategy of 'keep it basic' in my brain, I suggested 3-layered propelled ATM burglary security framework for ATM machine, beginning from sensors at the passage to GSM innovation in the ATM machine. And furthermore giving security when ATM card lost by creating OTP at the season of exchange. Taken after by the brilliant unapproved get to recognition and educated to the closest police headquarters and the Bank Authority.

**KEYWORDS:** Metal detector, IR sensor, Vibration sensor, Temperature sensor, ATM theft, GSM, OTP Generation, ATM Security, GPS.

## I. INTRODUCTION

Presently a-days, in the self-benefit keeping money framework has broad promotion with the trademark offering top notch 24 hours benefit for client. People groups are getting more intelligent step by step with the assistance of new innovation, new advancements. Primary explanation for the up-degree of new advances are only to conquer the current issues. Financial development of world improves the life more quick witted and when contrasted with past way of life. A shrewd stride towards economy is the presentation of Automated teller machine (ATM), for speedier and less demanding cash exchange. ATM is one of the programmed frameworks being utilized since 1967 by huge numbers of us. ATM was imagined by John Shepphardbaren on June 1967 at United Kingdom. It initially came in India in 1968. Utilizing the ATM which furnishes clients with the advantageous banknote exchanging is exceptionally normal and conveys benefit in an extensive variety of conditions, from bank offices and comfort stores to unattended areas at shopping centers and business focuses.

Though ATMs are principally built to safely store/administer monetary certificates and take stores, they are simply the favored administration stage for an expanding number of administrations accessible to cardholders. These incorporate installment of service bills, beating up of cell phones, reloading prepaid cards, and so on. Different administrations, for example, instalment of government advantages, qualifications, or small scale credits require the payment of money.

The proposed framework keeps up the single passage of a card holder at once with the assistance of auto sensor discovery. Takes after by the metal location at the passageway of the ATM room. At the point when card holder enter his PIN number then it sends OTP (One Time Password) message for card holder enlisted versatile number. Vibration recognition and Temperature discovery is utilized as a part of ATM machine. On the off chance that any sorts of surprising occasions happened, closest police headquarters and to the bank expert will be educated naturally with the assistance of GSM with the area and furthermore voice yield is delivered in the ATM room.



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## II. RELATED WORK

Right now ATM machines, card holders are not secured, there is no security layer is executed in the ATM card aside from PIN number. There is no OTP era office to give security to card holder. ATM card falling into wrong hands, and the PIN number being split by an outsider. At that point outsider can without much of a stretch utilize the ATM card. In a few machines it gives just card swapping offices at the passage of ATM room. Be that as it may, this office does not control the quantity of clients entered at a specific example, consequently it prompts some provocation of individuals, as we are confronting in everyday life. Presently a-days ATM theft is expanding copiously, subsequently there is no security for ATM machine. It permits the unsafe metallic gadgets inside the ATM room. There is no temperature location and vibration recognition office inside the ATM room. It doesn't send any data to the closest police headquarters and to the expert when unforeseen occasions are happened.

## III. PROPOSED WORK

The fig 1 contains for the most part IR sensor, Metal identifier, Accelerometer sensor, temperature sensor, GSM, FN-M16P3, Keypad, ALCD, Renesas Microcontroller, GPS. The proposed framework is controlled with Renesas microcontroller. at the point when card holder go into the ATM room he enter his mystery PIN number then framework naturally creates OTP and sends to the card holder enlisted versatile number then card holder ought to enter OTP produced for further exchange.

IR sensor keeps up single section of individual into the ATM space to dodge robbery inside it. Metal identifier is set at the passageway of ATM space to identify the hurtful metallic gadgets and GSM sends data to the closest police headquarters and to the bank specialist with the area and voice yield delivered in the ATM room. Accelerometer sensor will detect any kind of undesirable hit or assault on the metallic ATM machine and sends data to the closest police headquarters and to the bank expert with the area and voice yield delivered in the ATM room. At the point when room temperature gets raised then temperature sensor sense and sends data to the closest police headquarters and to the bank specialist and voice yield delivered in the ATM room.

### SOFTWARE

Cube suite +.  
Embedded C.  
Renesas flash tool.

### HARDWARE

Here we utilizing Renesas Microcontroller connecting between all Modules. GSM Module (SIM 900) use for informing. GPS Module use for Global Position. IR sensor keeps up single passage into the ATM room. Metal indicator sense metallic unsafe gadgets. Accelerometer sensor sense vibration of the ATM machine. Temperature sensor sense room temperature of the ATM room. FN-M16P3 module is utilized to give voice yield. GSM is utilized to send notice for enrolled portable number. GPS sends the area where burglary happened.

#### 1. OTP Generation

In this work when card holder embed his card into the ATM machine then it naturally produces OTP and send message to the card holder enrolled versatile number by means of GSM then card holder ought to enter the OTP for further exchange

#### 2. IR Transmitter & Receivers

To screen the thickness of the activity, we will keep a couple sets of IR transmitter and beneficiary sensors in favour of the ATM room entryway. On side IR transmitter will be put and ideal inverse to the IR transmitter, an IR recipient will be kept. This arrangement of IR transmitter and beneficiary will limit the passageway of a solitary individual as it were. When the card holder go into the room, no sooner other can enter for that session. More than one section into the ATM room, will obstruct the move naturally. Furthermore, GSM sends data to the closest police headquarters and to the bank specialist with the area and voice yield created in the ATM room.

#### 3. Metal detector

A metal locator is an electronic instrument which distinguishes the nearness of metal close-by. Metal indicators are helpful for discovering metal incorporations covered up inside articles, or metal items covered underground. They regularly comprise of a handheld unit with a sensor test which can be cleared over the ground or different articles. On the off chance that the sensor draws close to a bit of metal this is shown by a changing tone in headphones, or a needle proceeding onward a marker. Metal sensor is associated with the microcontroller, and is put at the section entryway of the ATM, when it sense the unsafe metallic gadgets, send the contribution to microcontroller, then microcontroller sends warning to the closest police headquarters and to the bank expert with the area and furthermore gives voice yield.

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## 4. Sensor on the machine

### • Accelerometer sensor

The ADXL335 is a little, thin, low power, finish 3-hub accelerometer with flag molded voltage yields. The item measures speeding up with a base full-scale scope of  $\pm 3$  g. It can gauge the static speeding up of gravity in tilt-detecting applications, and also powerful increasing speed coming about because of movement, stun, or vibration. The client chooses the transfer speed of the accelerometer utilizing the CX, CY, and CZ capacitors at the XOUT, YOUT, and ZOUT pins. Transfer speeds can be chosen to suit the application, with a scope of 0.5 Hz to 1600 Hz for the X and Y tomahawks, and a scope of 0.5 Hz to 550 Hz for the Z pivot. Accelerometer sensor is associated with the microcontroller, and is put on the ATM machine, vibration sensor will detect any sort of hit or assault on the metallic ATM machine, or if aggressor tries to move the ATM machine then sensor send the contribution to microcontroller, then microcontroller sends notice to the closest police headquarters and to the bank expert with area and furthermore gives voice yield.

### • Temperature sensor

The LM35 arrangement are accuracy coordinated circuit temperature sensors, whose yield voltage is directly relative to the Celsius (Centigrade) temperature

Temperature sensor is associated with the microcontroller, inside the ATM room temperature edge is set, when sensor identifies any fire or smoke inside the room then quickly sensor esteem surpasses the edge esteem this info is send to the microcontroller, then microcontroller sends warning to the closest police headquarters and to the bank expert with area and furthermore gives voice yield.

## 5. GSM

GSM modem is a specialized type of modem which accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. From the perspective of mobile operator, a GSM modem looks just like a mobile phone. GSM module is connected to the microcontroller, when microcontroller receives an input from sensors and gives the output, this output is send to the nearest police station and to the bank authority via GSM.

## 6. GPS

GPS framework will work and no more most noteworthy security level. In the event that any sort of lose of ATM machine is happened, the GPS framework will consequently demonstrate the present area to the base station of the separate bank and send data to the closest police headquarters.

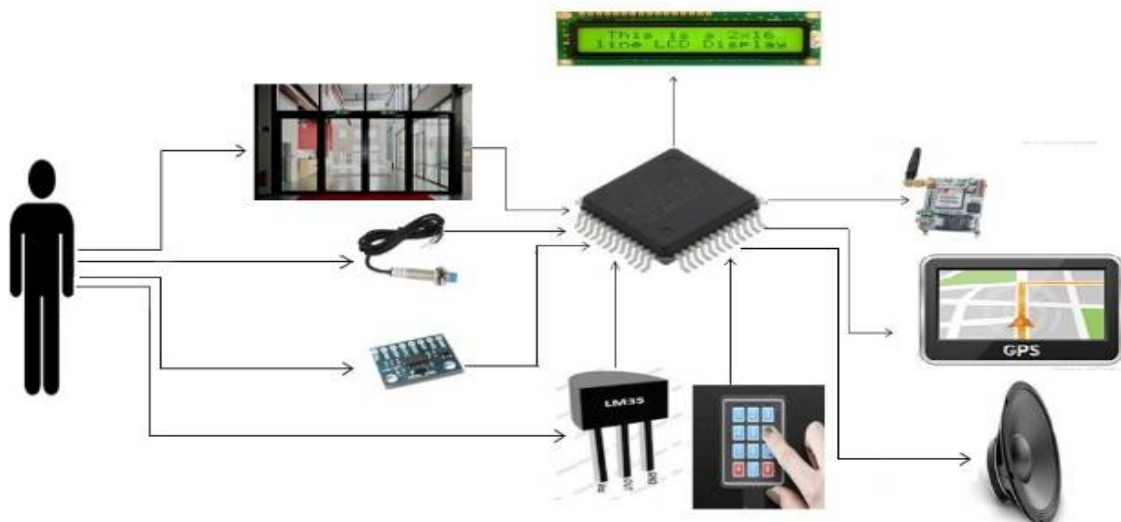


Fig: 1 Block Diagram

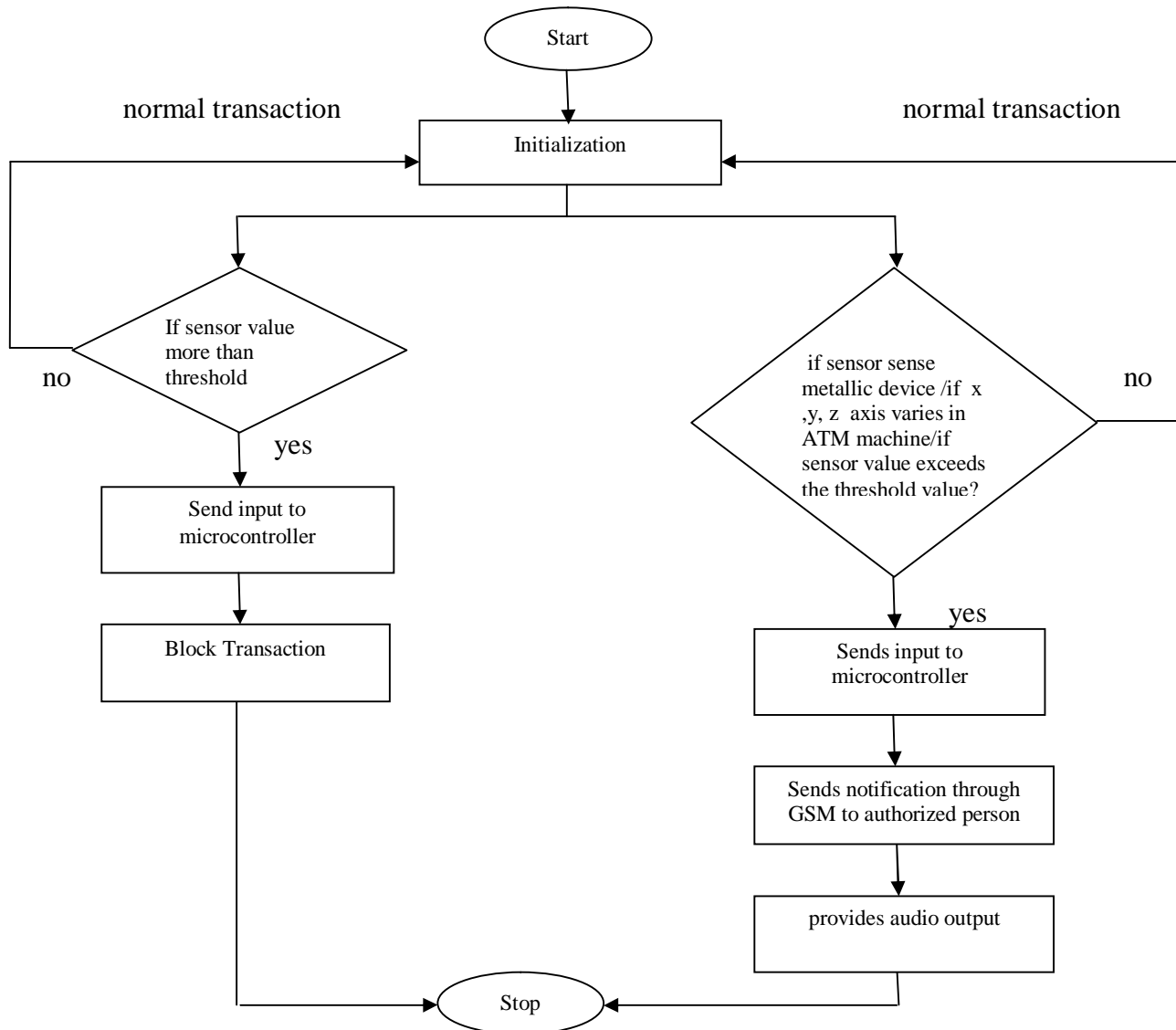
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Flow Chart



## IV. RESULT

Our recommended framework will be especially compelling to lessen the ATM burglary. This secured framework will likewise help the higher expert to make fundamental strides before occurring of a burglary or unapproved access by any trespasser and furthermore it gives second level security for card holder by creating OTP.

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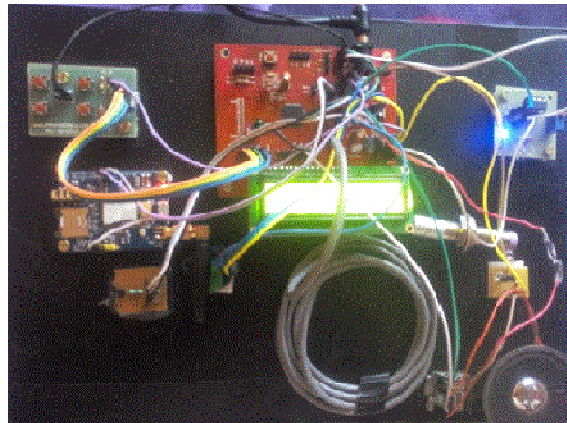


Fig: 2 Snapshot of Overall ATM Model

## V. CONCLUSION AND FUTURE WORK

The proposed framework will be particularly powerful to lessen the ATM burglary. This secured framework will likewise help the higher expert to make important strides before occurring of a robbery or unapproved access by any trespasser. This framework gives second level security to card holder by sending them OTP SMS at the season of exchange henceforth unapproved individual can not abuse the ATM card.

This proposed framework might be a tiny bit exorbitant when contrasted with current ATMs, however when it's about somebody's cash, possibility is a greater amount of this framework. This propelled ATM burglary security framework will give secured, more quick witted and better tomorrow for the person.

Anticipating the fate of pretty much anything is exceptionally hazardous business. At the point when burglary happened inside the ATM room instantly cameras catch the pictures and send email specifically to the police headquarters and to the bank expert, All the robbery happened are put away in the server. The GSM modem can be supplanted with web association in which every one of the information which information base of the considerable number of clients are kept up. Henceforth the SMS is sent through the net to which the concerned bank and ATM are interlinked.

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## BIOGRAPHY

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