

SMART ATM CARD FOR MULTIPLE BANK ACCOUNTS

Mr.M.Jeevanandham
Department of Computer
Science
SRM Valliammai
Engineering College
Chennai,

Mr.S.Madhan Babu
Department of Computer
Science
SRM Valliammai
Engineering College
Chennai,

Mr.Y.Abdul wahid
Department of Computer
Science
SRM Valliammai
Engineering College
Chennai,

1.ABSTRACT :

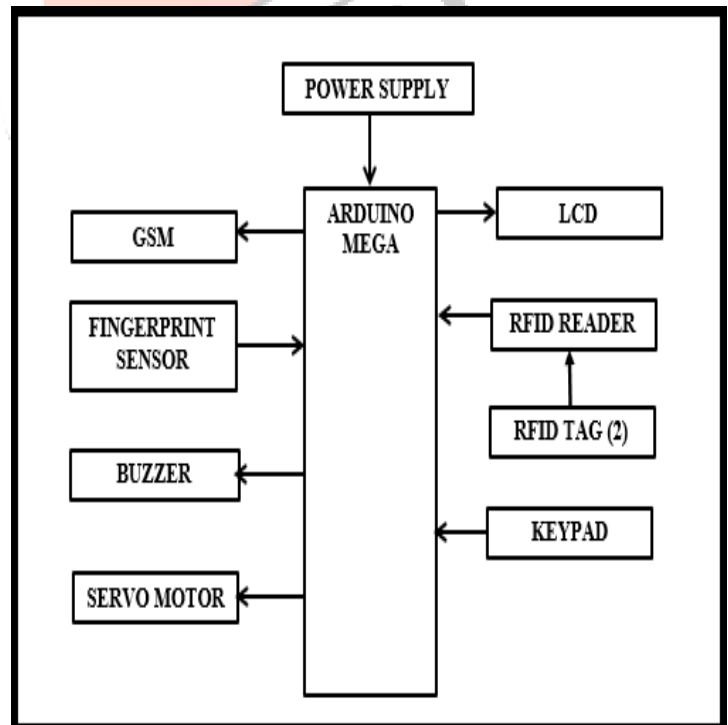
ATM is an condensation of Automated Teller Machine. It's introduced in the time 1959 for encouraging tone-service in retail banking. This makes people to deposit, withdraw and transfer quantum without the help of banking help's and it can be done at anytime and anywhere. At first, the ATM was made to distribute for the particular bank guests but latterly on the ATMs are connected to interbank network, so that it enables people to deposit, withdraw and transfer quantum from the ATM machines not belonging to that particular bank (i.e.) any bone can pierce any banks ATM machine to carry out their deals. ATMs calculate on authorization of a fiscal sale by the card issuer or other authorizing institution via the communication network. This is frequently performed through an ISO 8583messaging system. Numerous bank charges ATM operation freights from the guests for the deals. At present every client has an individual ATM card for each and every bank in which he/ she maintains account. So handling the cards, their watchwords play a major part then. So to overcome these difficulties we bedded further than one bank account of the stoner in a single ATM smart card, so that the stoner can swipe the card and can elect the bank from which he/ she are interested to carry out sale.

INTRODUCTION:

Since ATM's have been getting theft these recent days, it has come veritably much necessary to increase the security of the ATM machines. A single CCTV camera positioned at the corner of the ATM isn't enough to give important security since it only captures the videotape footage of what have been going on in the ATM but doesn't take any measures as such the pincher is locked and handovered to the law. Since the pincher shouldn't escape from the ATM machine, the ideal of this design is to handover the malefactor to the police by making him stay outside by automatically closing of the door due to the damage done to the machine and contemporaneously making him unconscious using poisonous gas and at the same time informing the bank and police station about

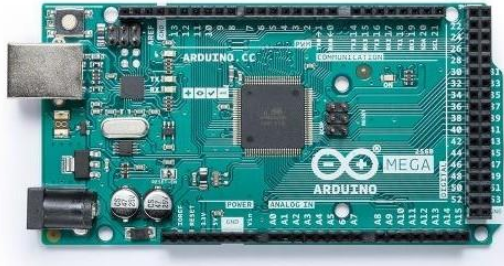
the conditioning that has been being the ATM cabin. In ultramodern period ATM system is veritably essential part of our life. It makes veritably easy our deals which was veritably tedious in early time. As for pullout of plutocrat, different styles are used. For case, punched cards were used. By the use of similar cards, only one payment was authorized. Thereby, a stoner had to get a force of cards from his/ her bank because the punched cards weren't returned to the stoner. Another illustration was the use of a glamorous card which had a limited life. The use of similar cards allowed; for case twenty recessions of plutocrat. For morning, particular identification number (Leg) has been of veritably great significance in the overall operation.

2.BLOCK DIAGRAM:



2.1. ARDUINO MEGA:

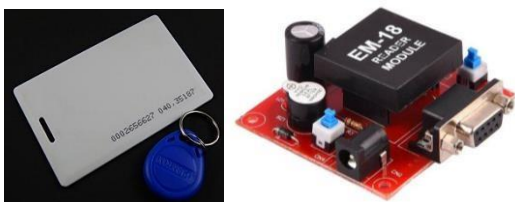
The MEGA 2560 is designed for more complex systems. With 54 digital I/O legs, 16 analog inputs and a larger space for your sketch it's the recommended board for 3D printers and robotics systems. This gives your systems plenitude of room and opportunities.



The Arduino Mega 2560 is a microcontroller board grounded on the ATmega2560. It has 54 digital input/output legs (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (handle periodical anchorages), a 16 MHz demitasse oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything demanded to support the microcontroller; simply connect it to a computer with a USB string or power it with an AC-to-DC appendage or battery to get started. The Mega 2560 board is compatible with utmost securities designed for the Uno and the former boards Duemilanove or Diecimila.

2.2. RFID READER AND TAG:

An RFID anthology is a device that's used to interrogate an RFID label. The anthology has an antenna that emits radio swells; the label responds by transferring back its data. An RFID label is a microchip combined with an antenna in a compact package; the packaging is structured to allow the RFID label to be attached to an object to be tracked. "RFID" stands for Radio Frequency Identification. The label's antenna picks up signals from an RFID anthology or scanner and also returns the signal, generally with some fresh data (like a unique periodical number or other tailored information).

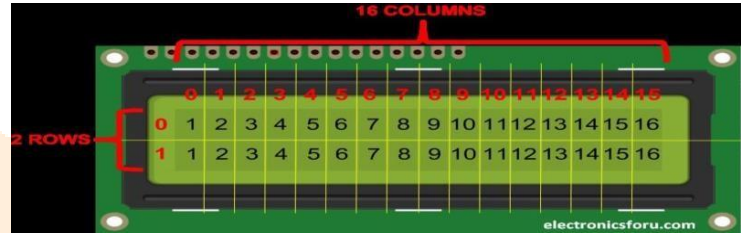


The EM-18 RFID Anthology module operating at 125kHz is an affordable result for your RFID grounded operation. The Anthology module comes with an on-chip antenna and can be powered up with a 5V power force. Power-up the module and connect the transmit leg of the module to admit leg of your microcontroller. Show your card within the reading distance and the card number is thrown at the affair. Voluntarily the module can be configured for also affair.

2.3. LCD:

TV screen is an electronic display module and find a wide range of operations. A 16x2 TV display is veritably introductory module and is veritably generally used in colorful bias and circuits. These modules are preferred over seven parts and other multi member LEDs. The reasons being LCDs are provident; fluently programmable; have no limitation of displaying special & indeed custom-made characters (unlike in seven parts) robustness and so on.

A 16x2 TV means it can display 16 characters per line and there are 2 similar lines. In this TV each character is displayed in 5x7 pixel matrix. This TV has two registers, videlicet, Command and Data. The command register stores the command instructions given to the TV. A command is an instruction given to TV to do a predefined task like initializing it, clearing its screen, setting the cursor position, controlling display etc. The data register stores the data to be displayed on the TV. The data is the ASCII value of the character to be displayed on the TV. Click to learn further about internal structure of a TV.



We come across TV displays everyplace around us. Computers, calculators, TV sets, mobile phones, digital watches use some kind of display to display the time. An TV is an electronic display module which uses liquid demitasse to produce a visible image. The 16 x 2 TV display is a veritably introductory module generally used in systems. The 16 x 2 translates to a display 16 characters per line in 2 similar lines. In this TV each character is displayed in a 5 x 7 pixel matrix.

2.4. KEYPAD:

At the smallest position, keyboards are organized in a matrix of rows and columns. The CPU accesses both rows and column through anchorages; thus, with two 8-bit anchorages, an 8 * 8 matrix of keys can be connected to a microprocessor.



When a key pressed, a row and column make a connect else, there's no connection between row and column. In IBM PC keyboards, a single microcontroller (conforming of microprocessor, RAM and EPROM, and several anchorages all

on a single chip) takes care of software and tackle interfacing of keyboard. In similar systems it's the function of programs stored in the EPROM of microcontroller to overlook the keys continuously, identify which key has been actuated, and present it to the motherboard. Figure shows a 4 * 4 matrix connected to two anchorages. The rows are connected to an affair harborage and the columns are connected to an input port. However, reading the input harborage will yield 1s for all columns since they're all connected to high (Vcc) If all the rows are predicated and a key is pressed, one of the columns will have 0 since the key pressed provides the path to base, If no key has been pressed. It's the function of the microcontroller to overlook the keyboard continuously to descry and identify the key pressed.

2.5. FINGERPRINT SENSOR:

R305 Fingerprint Module consists of optic point detector, high- speed DSP processor, high- performance point alignment algorithm, high- capacity FLASH chips and other tackle and software composition, stable performance, simple structure, with point entry, image processing, point matching, hunt and template storehouse and other functions



Fingerprint Module R305

R305 is a cutlet print detector module with TTL UART interface. The stoner can store the cutlet print data in the module and can configure it in 11 or 1 N mode for relating the person. The FP module can directly affiliate with 3v Microcontroller. A position motor (like MAX232) is needed for uniting with PC. The R305 point module has two interface TTL UART and USB2.0, USB2.0 interface can be connected to the computer; RS232 interface is a TTL position, the dereliction baud rate is 57600, can be changed, relate to a communication protocol; can and microcontroller, similar as ARM, DSP and other periodical bias with a connection, 3.3 V 5V microcontroller can be connected directly. Needs to connect the computer position conversion, position conversion note, images similar as a MAX232 circuit.

2.6. BUZZER:

A buzzer is a small yet effective element to add sound features to our design/ system. It's veritably small and compact 2- leg structure hence can be fluently used on breadboard, Perf Board and indeed on PCBs which makes this a extensively used element in utmost electronic applications. There are two types are buzzers that are generally available. The one shown then a simple buzzer which when powered will make a Nonstop Beep. sound, the other type is called a readymade buzzer which will look largish than this and will produce a Beep.Beep. Beep. Sound due to the internal oscillating circuit present inside it. but, the one shown then most extensively used because it can be customized with help of other circuits to fit fluently in our operation.



2.7. GSM:

A GSM modem is a wireless modem that works with a GSM wireless network. A wireless modem behaves like a dial-up modem. The main difference between them is that a dial-up modem sends and receives data through a fixed telephone line while a wireless modem sends and receives data through radio swells. The working of GSM modem is grounded on commands, the commands always start with AT (which means Attention) and finish with a character. For illustration, the dialing command is ATD; ATD3314629080; then the dialing command ends with semicolon.

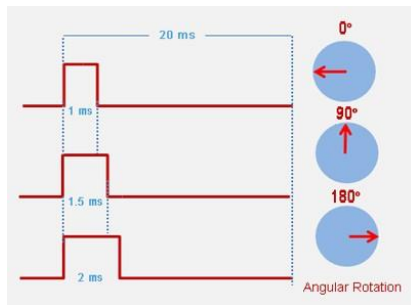
The AT commands are given to the GSM modem with the help of PC or regulator. The GSM modem is serially connived with the regulator with the help of MAX 232. Then uttermost 232 acts as motorist which converts TTL situations to the RS 232 situations. For diurnal interface GSM modem requires the signal grounded on RS 232 situations. The T1_OUT and R1_IN leg of MAX 232 is connected to the TX and RX pin of GSM modem.

2.8. SERVO MOTOR:

Servo motors can rotate from 0 to 180 degrees, but depending on the manufacturer, they can reach up to 210 degrees. This degree of gyration can be regulated by transferring a proper- range electrical palpitation to the Control leg. Every 20 milliseconds, the servo examines the palpitation. The servo can be rotated to 0 degrees with a 1 millisecond palpitation, 90 degrees with a 1.5



millisecond palpitation, and 180 degrees with a 2 millisecond palpitation.



1. SOFTWARE REQUIREMENTS:

1.1. EMBEDDED C:

Embedded C is the most widely used programming language in the software industry for creating electronic devices. Embedded software is coupled with each processor in an electronic system.

Embedded C programming is essential for the CPU to accomplish specified tasks. We utilize various technological equipment in our daily lives, such as cell phones, washing machines, digital cameras, and so on. All of these devices run on a microcontroller that is coded in embedded C.

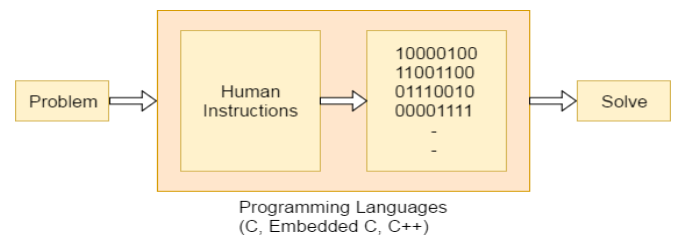
- Easy to understand
- High Reliability
- Portability

1.2. EMBEDDED SYSTEM PROGRAMMING:

Function is a collection of statements that is used for performing a specific task and a collection of one or more functions is called a programming language. Every language is consisting of basic elements and grammatical rules. The C language programming is designed for function with variables, character set, data types, keywords, expression and so on are used for writing a C program.

Function is a collection of statements that's used for performing a specific task and a collection of one or further functions is called a programming language. Every language is conforming of introductory rudiments and grammatical rules. The C language programming is designed for function with variables, character set, data types, keywords, expression and so on are used for writing a C program. The extension in C language is known as embedded C programming language. As compared to above the embedded programming in C is also have some fresh features like data types, keywords

and title train etc is represented by #include.



ADVANTAGES:

- Same hardware can be used in variety of application.
- Lesser power requirement
- Lower operational cost of system
- Provide high performance and efficiency

DISADVANTAGES:

- Developing a system required more time. Due to functional complexity.

1.3. PROGRAMMING:

The Mega 2560 board can be programmed with the Arduino Software (IDE). For details, see the reference and tutorials. The ATmega2560 on the Mega 2560 comes preprogrammed with a charge haul that allows you to upload new law to it without the use of an external tackle programmer. It communicates using the original STK500 protocol (reference, C title lines). You can also bypass the charge haul and program the microcontroller through the ICSP (In-Circuit Periodical Programming) title using Arduino ISP or analogous; see these instructions for details.

```

Ultrasonic_Sensor | Arduino 1.8.5
File Edit Sketch Tools Help
Ultrasonic_Sensor
void setup() {
  //Serial Port begin
  Serial.begin (9600);
  //Define inputs and outputs
  pinMode (trigPin, OUTPUT);
  pinMode (echoPin, INPUT);
}

void loop() {
  // The sensor is triggered by a HIGH pulse
  // Give a short LOW pulse beforehand to eni
  digitalWrite (trigPin, LOW);
  delayMicroseconds (5);
  digitalWrite (trigPin, HIGH);
  delayMicroseconds (10);
  digitalWrite (trigPin, LOW);

  // Read the signal from the sensor: a HIGH
  // duration is the time (in microseconds) !
  // of the ping to the reception of its ech
  pinMode (echoPin, INPUT);
}

```

EXISTING SYSTEM:

In the being system, when the stoner enters the ATM system the stoner has to fit the separate card of the stoner's choice into the ATM system's card niche. The coming immediate step the stoner has to do is enter the leg for that

particular card. There are multiple cards if the stoner has bank accounts and there's a possible chance of entering Leg's of other cards which may affect the sale process.

EXISTING SYSTEM DISADVANTAGES

- Multiple Cards
- Security of ATM card is less

PROPOSED SYSTEM:

The proposed scheme of MAASC (Multiple Account Access using Single ATM Card) provides the individual, the comfort of penetrating druggies multiple accounts of different banks using a single card. Also, it provides the stoner one position advanced convenience than the being system. The deals are approved by biometric authentication of the stoner which is replaced rather of Leg. As the bank garçon are different so the linking of single card to multiple garçon won't be a tough process

PROPOSED SYSTEM ADVANTAGES:

- Single ATM card provides more convince of using multiple bank transactions
- Higher security based on the biometric module
- More secure transaction using biometric of the user.

APPLICATIONS:

- ❖ Single card can be used for multiple bank transaction.
- ❖ Transaction

FUTURE ENHANCEMENT:

- ✓ Face identification and biometric can be used in the future for bank transactions.
- ✓ Several other security measures can be implemented in the future.

ADVANTAGES:

- Single ATM card provides more convince of using multiple bank transactions.
- Higher security based on the biometric module.

CONCLUSION:

Several cards with different Legs to them is a delicate process to remember it and occasionally the stoner can mis typed the leg with can lead to blockage of ATM card. so this system is proposed to exclude similar issues and this system can make the stoner accessible with one card. And rather of Leg the stoner use their biometric which make it more secure. The deals are same as the sense of anormal ATM. There will be an alert system so the stoner can identify their abuse of cards. This reduces the card blockage and other issues like mismatch of Legs.

REFERENCES:

1. Sakr, Sharif. "ARM co-founder John Biggs". Engadget. Retrieved December 23, 2011. "[...] the ARM7- TDMI was licensed by Texas Instruments and designed into the Nokia 6110, which was the first ARM powered GSM phone."
2. Kim, Bo-Ra, "Domestic ATM status and meanings", Payment and Settlement, and IT, Vol. 44, pp. 76, 2011.
3. Karki, James (September 2000). "Signal Conditioning Piezoelectric Sensors" (PDF). Texas Instruments. Retrieved 2007-12-02.
4. "GSM UMTS 3GPP Numbering Cross Reference". ETSI. Retrieved 30 December 2009.
5. "Gsmd – Openmoko". Wiki.openmoko.org. 8 February 2010. Retrieved 22 April 2010.
6. Rana, G.M.S.M., Khan, A.A.M., Hoque, M.N. and Mitul, A.F. (2016) Design and Implementation of a GSM Based Remote Home Security and Appliance Control System. Proceedings of the 2nd International Conference on Advances in Electrical Engineering, Dhaka, 19-21 December 2016, 291-295.
7. Ahmad, A.W., Jan, N., Iqbal, S. and Lee, C. (2011) Implementation of ZigBee—GSM Based Home Security Monitoring and Remote control System. IEEE 54th International Midwest Symposium on Circuits and Systems, Seoul, 7-10 August 2011, 1-4.
8. El-Medany, W.M. and El-Sabry, M.R. (2008) GSM-Based Remote Sensing and Control System using FPGA. Proceedings of International Conference on Computer and Communication Engineering, Kuala Lumpur, 13-15 May 2008, 1093-1097.
9. Yuksekkaya, B., Kayalar, A.A., Tosun, M.B., Ozcan, M.K. and Alkar, A.Z. (2006) A GSM, Internet and Speech Controlled Wireless Interactive Home Automation System. IEEE Transactions on Consumer Electronics, 52, 837-843.
10. Golzar, M.G. and Tajozakerin, H.R. (2010) A New Intelligent Remote control System for Home Automation and Reduce Energy Consumption. 4th Asia International Conference on Mathematical/Analytical Modelling and Computer Simulation, Kota Kinabalu, 26-28.