Arm Processor Based Bank Locker Security System

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ABSTRACT : The main goal of this project is to design and implement a lockers security system based on Biometric and GSM technology.This can be organized in bank, offices and homes.In this system only the authenticate person recover the documents or money from the lockers. In this security system fingerprint and face biometric security is used. In this system first person enroll use name and password and mobile number. If user name and password matches then. The face and finger of person will detect and store with id. If the id gets matches. Then four digit code will send on authorized person mobile through GSM modem and by punching the code lockers will be open. so biometric and GSM security is more advantages than other system .This system can also create a log containing check in and check out of each user along with basic information.

Keywords – Biometric, fingerprint ARM,GSM, Lockers.

I. INTRODUCTION

An embedded system is a system which is going to do a predefined specified task is the embedded system and is even defined as combination of both software and hardware. A general-purpose definition of embedded systems is that they are devices used to control, monitor or assist the operation of equipment, machinery or plant. "Embedded" reflects the fact that they are an integral part of the system. At the other extreme a general-purpose computer may be used to control the operation of a large complex processing plant, and its presence will be obvious.All embedded systems are including computers or microprocessors. Some of these computers are however very simple systems as compared with a personal computer.

The very simplest embedded systems are capable of performing only a single function or set of functions to meet a single predetermined purpose. In more complex systems an application program that enables the embedded system to be used for a particular purpose in a specific application determines the functioning of the embedded system. The ability to have programs means that the same embedded system can be used for a variety of different purposes. In some cases a microprocessor may be designed in such a way that application software for a particular purpose can be added to the basic software in a second process, after which it is not possible to make further changes. The applications software on such processors is sometimes referred to as firmware.

The simplest devices consist of a single microprocessor (often called a "chip”), which may itself be packaged with other chips in a hybrid system or Application Specific Integrated Circuit (ASIC). Its input comes from a detector or sensor and its output goes to a switch or activator which (for example) may start or stop the operation of a machine or, by operating a valve, may control the flow of fuel to an engine. As the embedded system is the combination of both software and hardware. In more complex systems an application program that enables the embedded system to be used for a particular purpose in a specific application determines the functioning of the embedded system.
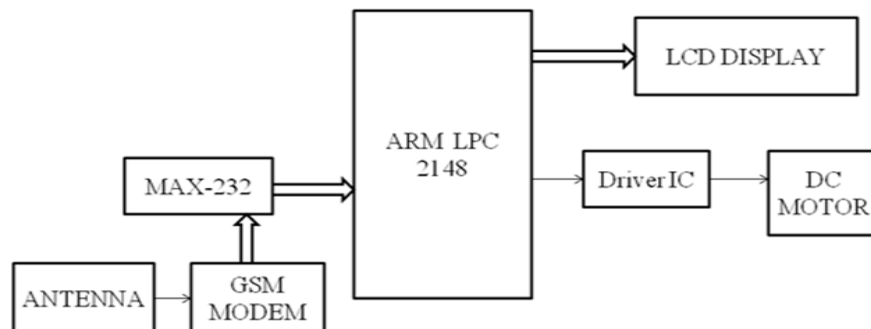
II. HARDWARE SETUP

Figure 1: over all implementation

III.   SOFTWARE USED

Keil compiler is software used where the machine language code is written and compiled. After compilation, the machine source code is converted into hex code which is to be dumped into the microcontroller for further processing. Keil compiler also supports C language code.

To program the flash memory, first keep the microcontroller in PROGRAMMING mode. Launch the LPC2000 flash utility. Select the device as LPC2138; enter 14746 in XTAL Freq (kHz) field and COM1 and 19200 in Communication block. Next, click on the 'Read Device ID' tab; it prompts for reset the board. Acknowledge by resetting the board. If it is successful it returns the 'Part ID' and 'Boot Loader ID' along with an error message "Device not supported". Neglect the error message if you find a valid numbers in the 'Part ID' and 'Boot Loader ID'.

Figure 2: flow process of algorithm

IV.   CONCLUSION

This project can be implemented as a locker security system using GSM for banks. It is a low cost, low in power consumption, compact in size and stand alone system. The authenticated customer's information (phone number, password) can be stored in microcontroller's memory database system and the memory capacity can also be increased if the customer limit exceeds. The microcontroller compares the passwords entered by keyboard and received through mobile phone. If these passwords (codes) are correct the microcontroller provides necessary control signal to open the locker otherwise door remains locked.It is a password detector, can be used to automate the door locking process, so the user need not to carry the door lock keys along with him, he can just remember the password and use it later to open/close the door.

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