PIR Sensor based Advanced Banking Security System using ARM 7

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Abstract— Banking security system is important concern in today's world. Current system in banks cannot complete the all requirements. So it does not able to provide the security for banks or museum. Basically our project depends upon the human detection. Our system contains three stages. Human detection, processing unit, output stage. In first stage human are detected in restricted area by using proximity infrared sensor. In next stage system will get activate and controller start working on input signal which gives from sensor and send the message to local police and authorized person by using GSM modem 'thieves are detected' . And also the alarm gets activate this is the output stage. In processing unit ARM 7 controller have been used. Our system is different from current system like CCTV cameras. It could not able to capture in night or dark time. It also requires one person to monitor the videos time to time but our system works in anytime and anywhere efficiently and automatically. This system also includes the door lock system and poisonous gas system.

Key words: ARM 7 Controller, GSM Modem, Proximity Sensor

I. INTRODUCTION

In our life the money, gold and important document is very important to secure. So we have use banking locker system for this purpose. So to secure this from robbers the security system of bank need to be untraceable. This advanced banking security system is uses proximity sensor and it has nearly 20 m range for human detection. There is need to be a system is fast and accurate and operate on low power and low cost. This system is operate using ARM7 and GSM modem. After detecting the thieves there is need to catch them so we have use the automatic door lock system. After theft detecting Also the GSM modem sends message to a police and buzzer system alert the local security.

On February 5, 2016 in Bangladesh bank a group of international robbers are successfully robbed the $101 foreign currency by hacking the security system of bank

On Jan 26, 2014 in Sonali bank, Bangladesh. The two robbers robbed the 169 million ' Bangladeshi taka ' after both thieves have tunneled the way in locker room from a neighboring house. So there is need to be a unscrackable system

II. LITERATURE SURVEY OF EXISTING METHOD

To secure bank or museum most of the time some system get used like CCTV cameras, face recognition, fingerprint recognition or biometric authentication. On most of the places CCTV cameras have used for a security but it has a some drawbacks. Cameras are not capture the video perfectly in dark areas and it gets failed if power supply gets failed or thieves have cut off. Thieves have able to see the cameras or light so this system gets failed. It requires at least

one person monitor that data or video time to time and then get action on it [1].

In some time advanced system has been used like a face recognition and fingerprint recognition. This advanced system needed external parameter like a cameras for face image capturing and scanner for fingerprint scanning so it has a high cost. Some robbers can crack that system. Because of high cost it is impossible to use that system in all over and it also requires large memory capacity and power supply [2].

Other system like password or fingerprint system it is possibility to kidnap the manager or the person who have known the password by robbers to crack that system [3].

So our project eliminates some problem and work efficiently and automatically we have try to made this technology by using proximity sensor with low cost and high accuracy [4].

III. PROPOSED SYSTEM

That proposed system proximity sensor is use in input phase. Human detection is the aim of this system so it complete with use of this sensor see in a fig. The concept of a sensor is like a photo detector. When infrared waves are receive by sensor then it sends active high pulse .human have a particular body temperature in form of heat which is wavelength 0.7 to 300 micrometers. So it will emits radiation of 108 Hz frequency in surrounding atmosphere so it is main part of our system.
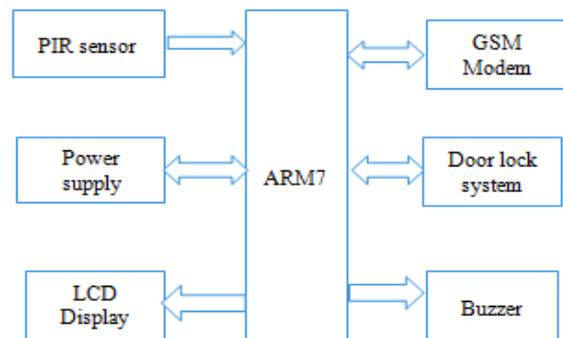

Fig. 1: Proposed block diagram

After detecting human sensor sends the high pulse to ARM 7 controller. We have use here ARM7 as a processing unit it has a 32 bit data rate and low power consumption. So it will process on input signal and gives the output signal to output devices.

On output stage we have use GSM system , alarm system, door lock system and poisonous gas system see in fig. ARM 7 provides the signal to alarm system and this will goes activate after that the GSM modem sends the message to particular person like local police. At that time also the door lock system activate and it locks the door of restricted area. It use to capture the robbers into restricted room. And last function is poisons gas system. This system is use if application is must require. When this application activates

then it release the gas. This gas is harmful to the robbers and they felt uncomfortable and easily caught by police or security. Because many times robbers should be loaded with weapons.

IV. RESULT ANALYSIS

If any human comes in the range of PIR sensor then it detects the human body radiation that time output LED goes to on and LCD display shows the message sending text on display which is sent by GSM modem.

Fig. 2: LED activation

Fig. 3: output display

V. CONCLUSION

This system is highly secure. It also operates on external power supply. If thieves have cut the main power supply then also this system operates on external power supply. There is ARM7, sensor and other application operates on max. 9V.so this has a low power consumption ARM7 gives a fast response and accuracy.

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