CHAPTER 1

INTRODUCTION

1.1 Project Background

Real time counting audience system is one of application detector system consumption. This project was head for reckon the presence of audience at entrance and perform the basic calculation to get the exact number spectator with considering circumstance in/out them. Nowadays the technology of detectors system becomes sophisticated and blooming. One of branch system detector is motion detector. The creation of motion detector system was an interesting project since it combines both usage software and hardware components. On the hardware part, there are motion detector, pc and controller board circuit interfacing, and on software part, there is data encoding and intelligent counting data. The main purpose of this project is able to invent the control system with equipped detector system for upgrade the existing security stadium. Nevertheless this system can be also embezzled in everywhere as enumerate presence such UniMAP laboratories, library, office, main hall and classes. These in accordance with development of sophistication engineering world which have entered the millennium epoch replace the transition of technology era. The entire manual work field is going to change to automatic system with equipped high standard electronic system.

The system will begin reckon when motion detector detects the presence of someone pass by. The most importance features of system are alert and sensitive and also must be nimble performs the cycle counter. To be more systematic and facile to system process, the data decompose into four main portion that are data base/security, data collection, data management and data output.
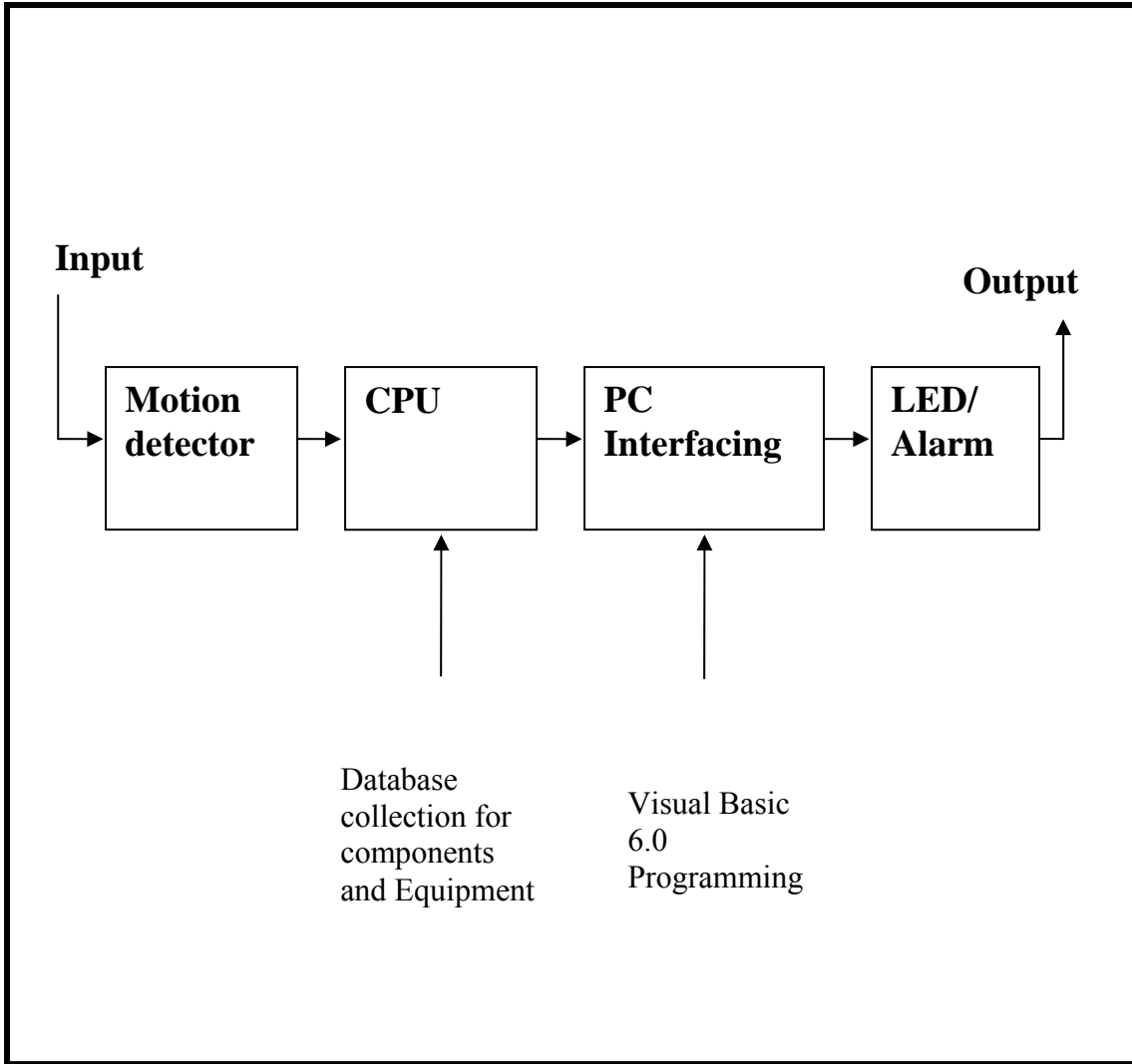
```
┌─────────────────────────────────────────────────────────────┐
│                                                             │
│   Input                                    Output           │
│                                                             │
│  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐    │
│  │ Motion   │→ │ CPU      │→ │ PC       │→ │ LED/     │ →  │
│  │ detector │  │          │  │Interfacing│  │ Alarm    │    │
│  └──────────┘  └──────────┘  └──────────┘  └──────────┘    │
│                     ↑              ↑                         │
│                                                             │
│                Database       Visual Basic                  │
│                collection for 6.0                           │
│                components     Programming                   │
│                and Equipment                                │
│                                                             │
└─────────────────────────────────────────────────────────────┘
```

Figure 1.1: Block diagram for real time audience counting system

Refer to Figure 1.1, comprises four main blocks which represent the real time audience counting system. The position of each block is arranged according to the flow process of system. The motion detector will trace the human when pass by the sensor area. Then this data will send to Central Processing Unit (CPU) which develop interface between device and PC. In PC interfacing it will implement through the Visual Basic 6 (VB 6) software to display the total number count of sensor trace. Every time when sensor detect human it will trigger LED to ON as sign someone had pass by the entrance.

**1.2	Aim of Project**

This project is developed to reckon the presence on audience who come to stadium and record the overall statistic of audience in database system. The aim of this project to improve the security level system with more systematic and secure and able to know the total number of audience at one time in stadium. Beside that the project were look to enhance accuracy of the system process to count and record entry of bystander and also able to compare the differences between the total presence audiences with the total capacity equipped to shun from wreck the stadium structure.

**1.3	Objectives**

i.	To explore how different motion detectors operate.

ii.	To gain the knowledge how to construct transmitter and receiver detector circuit.

iii.	To develop real time counting audience system.

iv.	To improve security system procedure for entrance football stadium.

v.	To solve the sale fake ticket from bloom and deceptive the buyer.

1.4   Problem Statement & Scope of Study

1.4.1   Problem definition

Real time counting system was invent to execute the basic reckon upon the audience to record their attendance. From this system it able to determines the total audience in stadium at one time. Counting system using the motion sensor to detect the presence of audience when pass by the entrance. In making the system more accurate, alert and fast to perform the infrared sensor embezzled.

There are various types of motion detector that unanimous to commit this system such as ultrasonic motion detector, passive motion detector and active motion detector. Since active motion detector convenient to conduct and trouble less to implement it were really seasonable to apply on this project. The advantageous active detector is not easily trigger by natural environment make the detector will start reckon on by human intruder.

1.4.2   Problem statement

The goal of this project is to expand the of security stadium with perform the real time counting audience to get know the real total attendance of audience inside the stadium at one time. All the statistic of audience that recorded is store in database system within Microsoft Access. The system are flexible and dynamic with equipped infrared sensor which able to distinguish the act of audience going in or going out. In additional the stadium security can evade the destruction of structural stadium.

The counting systems that integrate with visual basic program enhance the capability of this system to operate more efficiency to obtain the accurate total number of audience. User friendly concepts which have been programmed make the system easy to control and allow the user to edit, delete and add the database record and also view the data report.

1.4.3 Current situation

Flood audience phenomenon in a football stadium usually originated from illegal audience or fake ticket sales. The customary procedure for get in football stadium which exerted currently still not effective to presume the total presence of spectator due to less of manner effort to solve it. With this circumstance, if the total number audiences surpass the capacity stadium can bring restlessness of the destruction structural stadium. Nevertheless this condition can be evaded if the engineer can yield one kind of counter system. Therefore, the stadium management probably able to record the total number of audience and control the illegal audience from continuously occurs.

1.4.4 Scope of study

This project is aim to yield counter system which basically reckon the presence of bystander. The creation of this system will expected to mend the current customary of security system at stadium and reduce the depreciation of original ticket sales. Integrate counting system with visual basic program make the great combination to implement this system more systematic and efficient. With the rapid bloom of communication electronic, this project should be not facing big problem to erect and can be expand to establish become huge powerful system.