# PROGRAMMABLE LUGGAGE SECURITY SYSTEM

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**ABSTRACT**

*During journey through public transport, protection of baggage is very much important issue. Normally it was done with chain-lock and key. But that security system frequently failed and people lost their valuable things. So the main objective of this security system is to build an efficient protection that is user friendly, durable, portable and cost effective.*

*It is a simple password protected circuit. Without providing password when someone tries to lift the luggage, it will generate a warning alarm which is very much helpful during travel in the bus or train even at the night time as it can also produces audio visual indication.*

***Keywords***: ***Alarm, Microcontroller, Password, Security, Strain Gauge***

## I INTRODUCTION

While travelling in public transport such as buses or trains, people usually carry expensive belongings and are quite insecure about their safety. Even though after locking the luggage thoroughly, there is always a worry about it.

To solve this problem here is a simple luggage security alarm circuit .When somebody tries to steal the luggage, the circuit will give a warning alarm. This electronic circuit is password protected. The passenger has to place their baggage on a luggage-pad attached to the above mentioned circuit. Then the passenger has to enter a password through a matrix keypad to activate the circuit and they can relax without worried about it. Because after activating the circuit if any unwanted attempt to lift the bag happens, then circuit will generate the warming alarm. The passenger has to enter the password again to deactivate the alarming circuit as per their requirement. The same password will be given during the activation and deactivation of the alarming circuit. The work in this paper is divided in two stages.

1) Alarm circuit
2) Password Protection system

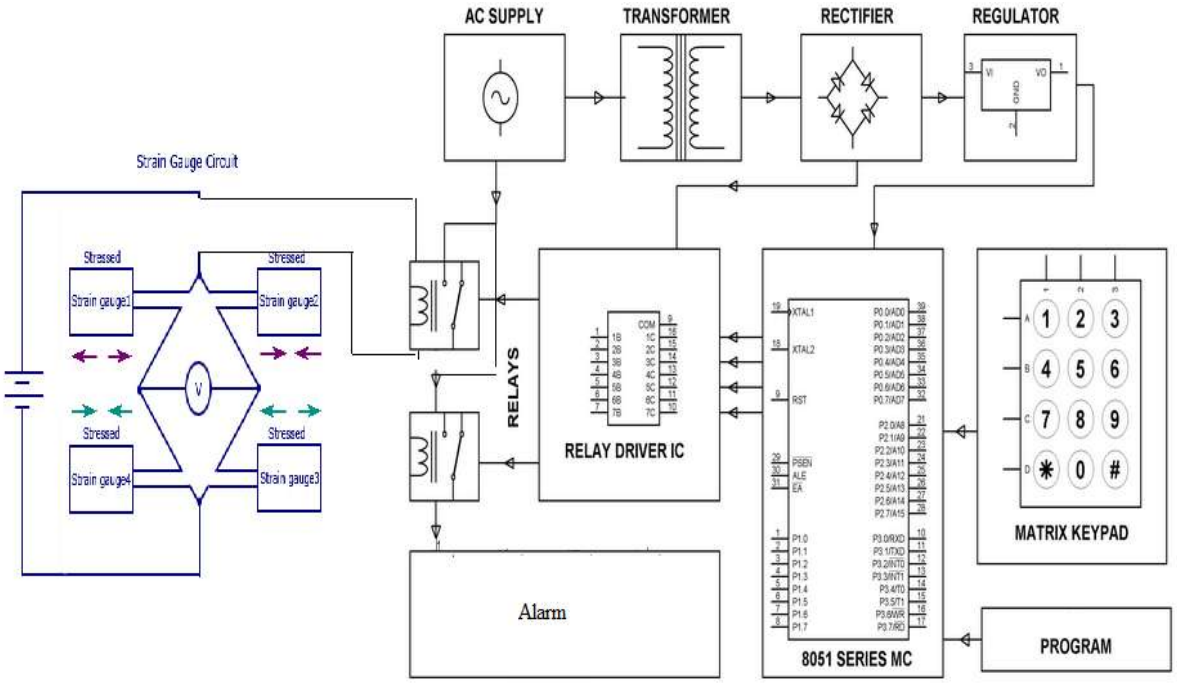
### 1.1. Alarm circuit

It is a simple electronic circuits .The luggage sensing element is attached with the circuitalong with the luggage loading platform. The passenger can place their luggage on the that above mentioned platform and give their chosen password .That password will be locked as long as they are willing to do so. Until and unless they unlock the circuit using the wrong password the alarm will not make sound .If wrong password is given then alarm will make sound.After activating the circuit if any unwanted attempt to lift the bag happens, then circuit will generate the warming alarm.

### 1.2. Password Protection system

The main section of the security system is password protection system .This system is based on the programme using microcontroller. The password will be provided during the ticket booking period by the passenger. The same will be used to lock the system for the first time when it will be used. The same password will be used for the second time to unlock the system .If there is any mismatch in password given to the user and given by the user then the alarm will rang.

## II BLOCK DIAGRAM




## III ALARM SYSTEM OVERVIEW

The above mentioned diagram mainly comprising luggage sensing unit. It is nothing but a Poison bridge using four strain gauges in Wheatstone bridge connection. It sometimes is called full bridge in context of measurement through the strain gauge transducer. It is employed when high sensitivity is precisely required. There is a display unit associated with the system for displaying luggage weight. When the luggage is placed on the luggage pad for the first time and is locked using the given password at the ticket booking period .The locking operation is done through the relay interfaced with the microcontroller unit. The luggage locking subroutine is stored already at the particular memory location .The alarm unit is associated with another relay interfaced with the

microcontroller unit. When the luggage is locked properly the alarm is not activated through the relay2 operated by the program segment stored in the microcontroller. Relay is driven by the relay driver circuit. Here the matrix key pad is vital through which the user can give the password when required. when the passenger is required anything to access that has kept in the luggage then first the locking system will be deactivated first then after the access of the need the passenger can lock the system using the same password which is known to the passenger only. The alarm will rang only when the unwanted attempt like attempt to snatch the luggage from the passenger happens then the particular subroutine will be executed and thus relay associated with the alarm will be activated. The alarm will rang. Thus the luggage security is ensured.

## IV PASSWORD PROTECTION SYSTEM OVERVIEW

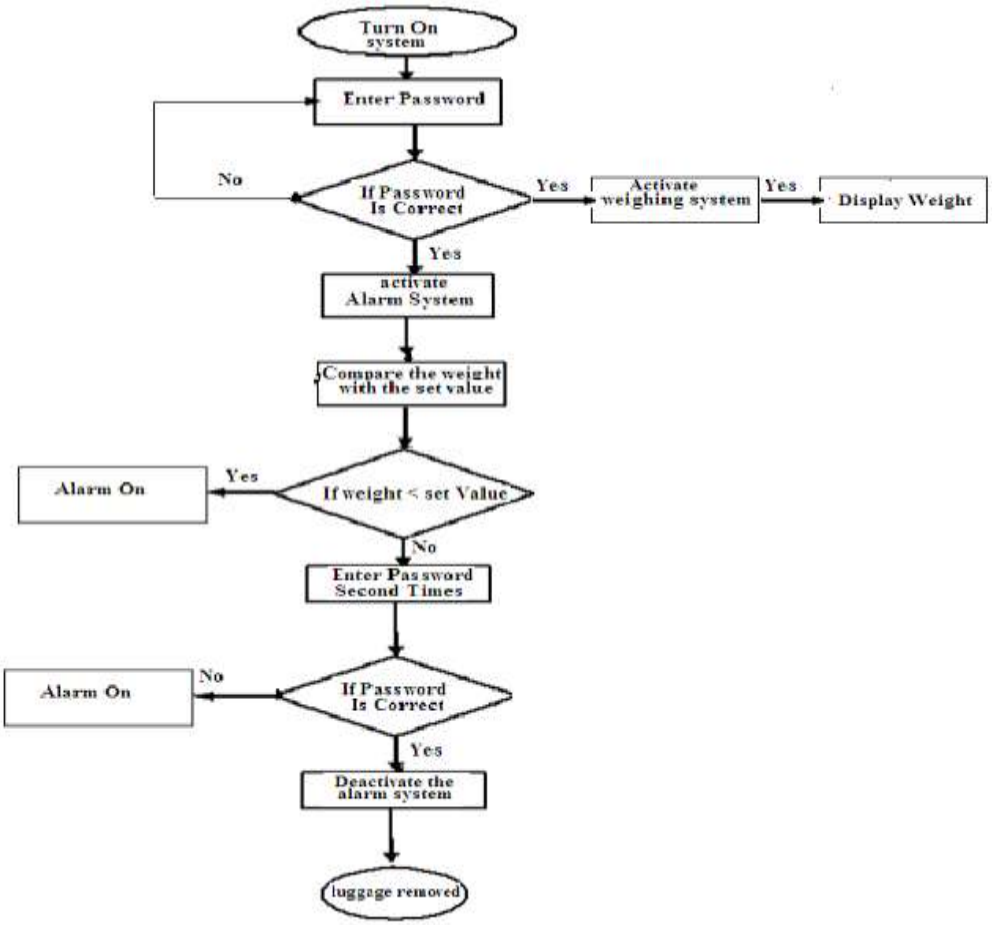
At first password is checked through programming. If given password is matched with stored password then alarm system and weighing system turn on. After that weight of luggage is compared with set value stored in memory. If the weight is less than set value then alarm generates.

It means, after activation of alarm system if anybody lift the luggage, then weight on luggage pad reduces from the set value and program module gives an output to relay associated with alarm.

When second time the password is entered correctly then the system will be deactivated.Before deactivation if any body gives wrong password again alarm turns on.

The programme module is shown in the following flow chart clearly.

**Flow Chart of Pass word protection programme segment:-**



## V CONCLUSION

This luggage security system is very much essential in airports, temples, museums. This project is a simple very powerful project. It continuously monitor the passenger luggage and if needed to protect the luggage from theft through an audio indication.

The design and implementation of microcontroller based security system (using mobile phone &computer set) has been proven to be a reasonable advancement in security system technology and access control. The computer interface has expanded the flexibility of the multi-functional Microcontroller. Then this is a major breakthrough in digital design and technological advancement.

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