SMART BUS

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ABSTRACT

In day to day life we generally face problem of public transport system. It's like somebody is waiting for some bus for an hour, but when bus arrives at his stop, it could be fully loaded with passengers and he/she will not even get a chance to enter into it. Sometimes driver would not bother to stop the bus. So the time he waited is wasted. If that person would know about the exact location of his bus and had a rough idea of the number of passengers onboard in advance, then if needed he/she can look for an alternative. It saves a lot time and makes things a lot friendlier.

KEYWORDS:- *Gps, Gsm, Android application, Alcohol sensor, Accelerometer sensor*

I. INTRODUCTION

Here we are developing a system which will have android application. We can use our smartphone to track particular bus. This can work with offline also. It will send an SMS to track that bus. Bus unit will have GSM module which will read SMS and mobile number of sender. It will check for seat count by using obstacle sensors at entry door and exit door. It will send return SMS of seat count along with its GPS location to that sender.

We will continuously monitor exact person count in bus and also location of bus by using GPS module. Then we will access this information through android application .Hardware will connected to this application. Alcohol sensor which provide the information about whether the driver drunk or not.The Accelerometer sensor gives information about if bus accident or more tilt of bus if occurs. We also used three switches, one for women safety, second if bus fail and third for if passengers feel driver do rush driving.

We have also added some more applications to it to make this system a lot friendlier:

- If the bus fails then the conductor will press one switch, it will send an SMS to their office so that they can come and help immediately.
- Woman security is very important aspect especially while travelling. We will provide one switch for women. After pressing it the nearby Police Station will be alerted for help.
- We will also check for alcohol consumption of driver.
- In event of an accident, SMS will send to nearest Police Station and nearest hospital for immediate help of victims.

II. OBJECTIVES

1. To develop Advance monitoring of public transport system with seat counts.
2. To provide safety for passengers like alcohol sensing of Drivers.
3. It also provides help for accidents causalities.
4. To provide security for women

III. AIM

As we know the problems occurs in public transportation system , to solve such problems we design a smart bus with an android application.

IV. RELATED WORK

1. Intelligent Bus Monitoring and Management System[1]

From this paper we Refer-

The referred paper deals with the implementation of an intelligent bus monitoring system based on current problems. In this system, RFID and GPS , GPRS and geographic information system (GIS) are used to monitor locate and movement of a bus. A new theoretical framework and ruled based decision algorithms are developed for the system. An experimental setup is shown by developed for the prototype implementation. The results show that the choice of integrated technologies used in the system is suitable to monitor and manage a vehicle transportation system.

2. Bus Navigation System with Effective Data Transmission Using GPS and Wireless Transmitter[2]

From this paper we Refer-

Global positioning system (GPS) is being actively employed in a variety of vehicular monitoring systems such as automated car navigation and emergency assistance. Nowadays easily observed many passengers at the Bus stops waiting for the bus. This paper considers performance issues in Public transport system that utilize GPS and embedded systems. For the purpose of locating the bus, And to report the location of the bus in the bus stop and to record whether the bus stops in its respective bus stop using Global Positioning system in merging with Transceivers modules, and detect any passenger stands. In addition to some basic functions such as real-time monitoring, some special functions are combined to make the system compatible with the daily operations of any public transport scheme. The proposed method will surely provide smooth and transmission of location information to the bus which led person to take decision to stay for Bus or not.

V. PROPOSED SYSTEM ARCHITECTURE

Explanation-

The primary contributions of this paper are as follows:

- ARM7 Controller:
  We are using ARM7 LPC 2138 as microcontroller, which is heart of project.We interface various sensors to the controller and also we interface three safety switches to the controller.
- Obstacle sensor:
  Obstacle sensor is nothing but IR sensor, it will check for seat count by using obstacle sensors at entry door and exit door. When person enters into the bus controller will increment the count and when person leaves the bus controller will decrement the count.
- Alcohol sensor:
  We will also check for alcohol consumption of driver for safety. If driver is drunk then it brings the alarm.
- Accelerometer sensor:
  It provides help for accidents causalities. If bus accident will occur sensor give us information.
- GPS:
  We can find the location of bus through GPS sensor. GPS will provide exact location of bus on android application.
- GSM:

We can send the information through GSM system.

- Safety Switches:

1. If the bus fails then the conductor will press one switch, it will send an SMS to their office so that they can come and help immediately.
2. Woman security is very important aspect especially while travelling. We will provide one switch for women. After pressing it the nearby Police Station will be alerted for help.
3. In case of rush driving by pressing that switch an information is send to the public transport system office.

Block diagram description:

We will continuously monitor exact person count in bus and also location of bus by using GPS module. Then we will access this information through android application. Our hardware will be connected to that application. Alcohol sensor which provides the information about whether the driver is drunk or not. The Accelerometer sensor gives information if bus accident is occur. We also used three safety switches, one for women safety ,second if bus fail and third for if passenger feels driver rash driving.

Block Diagram:

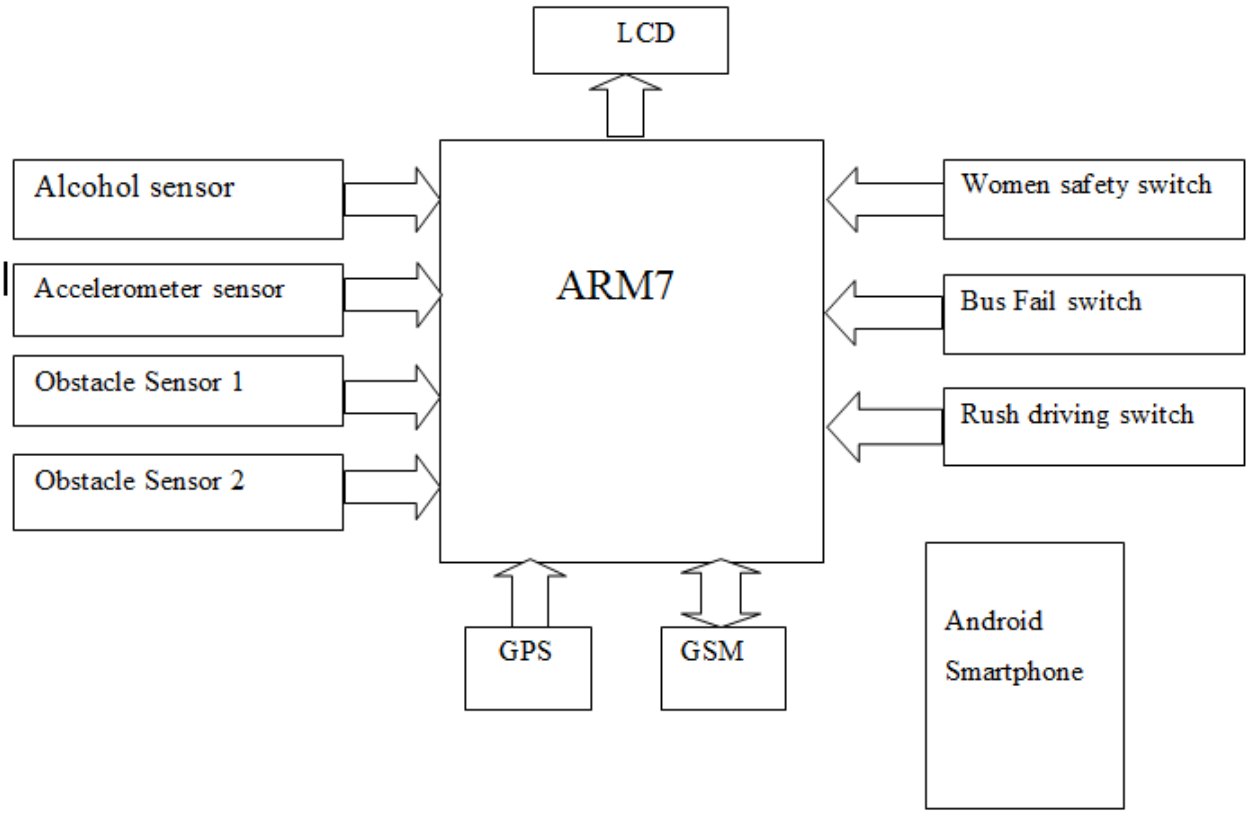

Fig.1 Block Diagram

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