Project Report

Smart Passenger Alert System

Submitted to
Prof. M. Balakrishnan
Dept. of Computer Science and Engineering
IIT Delhi

By

Abhinav   **Hitesh Kumar**

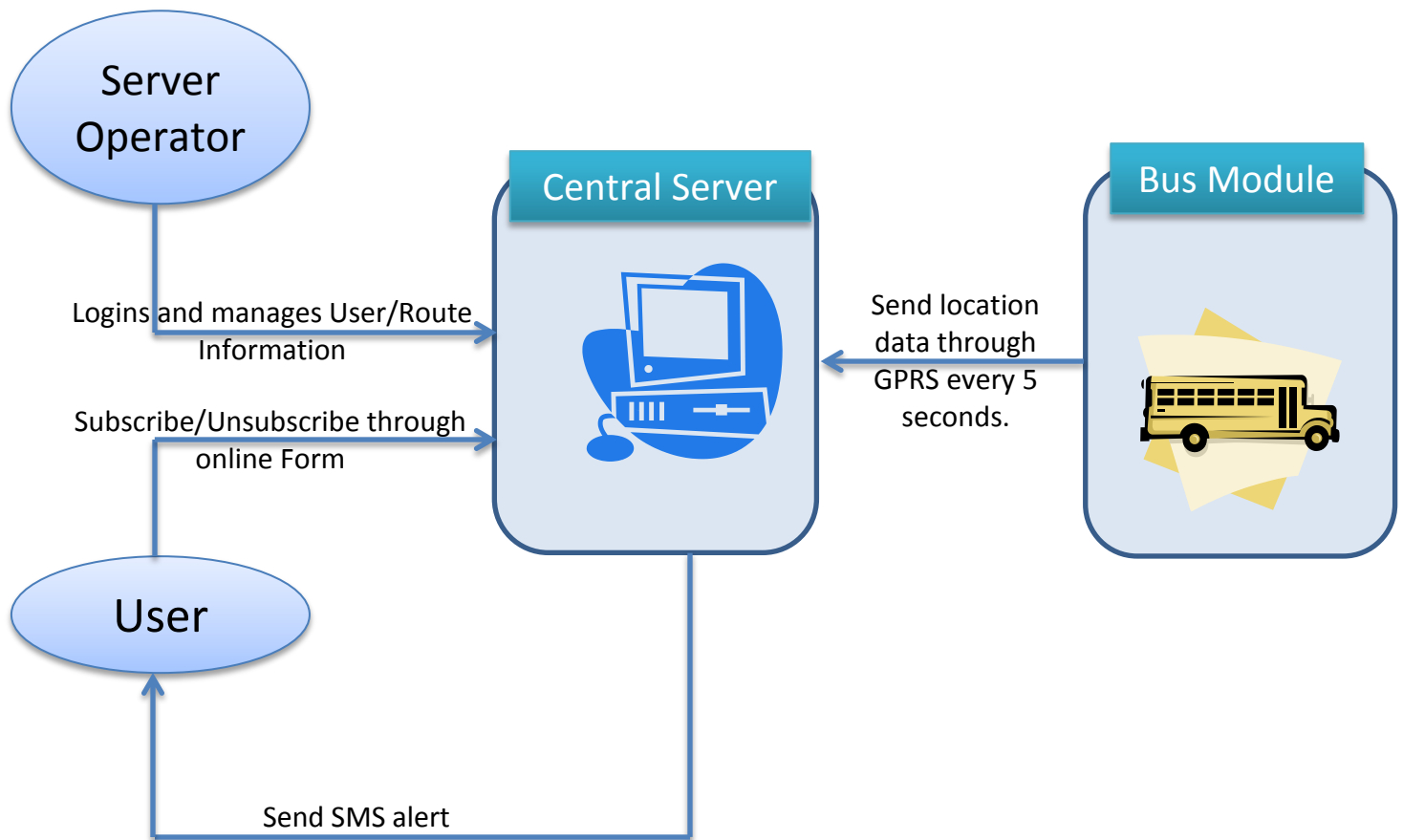**Harsh Prasad**   **Manan Agarwal**

Introduction

"To realize the value of one second, ask the person who just missed a bus or train."

In today's world, time is money. Because of the unpredictable traffic conditions these days, the people using chartered bus services waste precious time waiting for the bus at their respective stops. So there is a need for an early warning system, for the approaching transportation vehicle.

This early warning system would provide automatic alerts to passengers corresponding to their respective bus stops. These alerts would be in the form of SMS to the passengers on their registered mobile numbers. So the passengers can reach their stop just in time and board the bus without any waiting.

The alert system would be fully automatic without any need for interaction with the bus driver or passengers. The passengers would only need to register on a central website their mobile number, the bus for which they would like to get the alert, their stop and the time when they would like to get the alert.

BLOCK DIAGRAM

Server Operator

Logins and manages User/Route Information

Subscribe/Unsubscribe through online Form

Central Server

Bus Module

Send location data through GPRS every 5 seconds.

User

Send SMS alert

Specification

User

User is the passenger who would like to receive the service. The user would be required to register on a website hosted on the central server. He would have to provide his mobile number, bus number, bus stop and time in case of multiple routes of the same bus through the same stop.

Server Operator

He will manage the bus routes on the central server. New Chartered buses will be introduced into the central server by the server operator. So in nutshell, he will do the upkeep and maintenance of the central server.
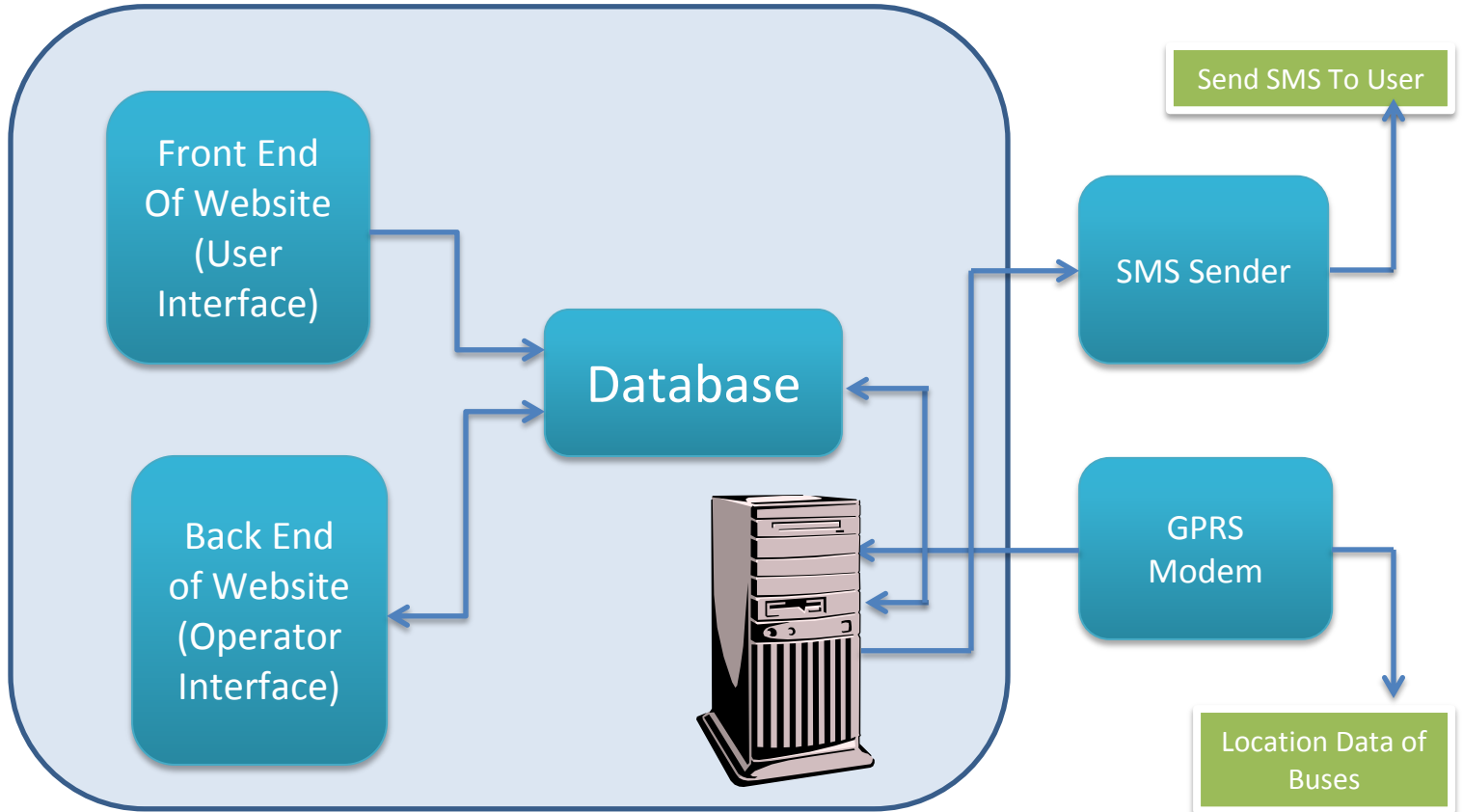
Bus Module

It consists of a GPS system to get the current location of the bus and a GPRS system to send the location data along with the bus number to the central server. Also we require an interface between the two so that they can interact. So we can use a GPS/GPRS enabled phone to send the location data to the central server. So we will need to develop an application for this interface.
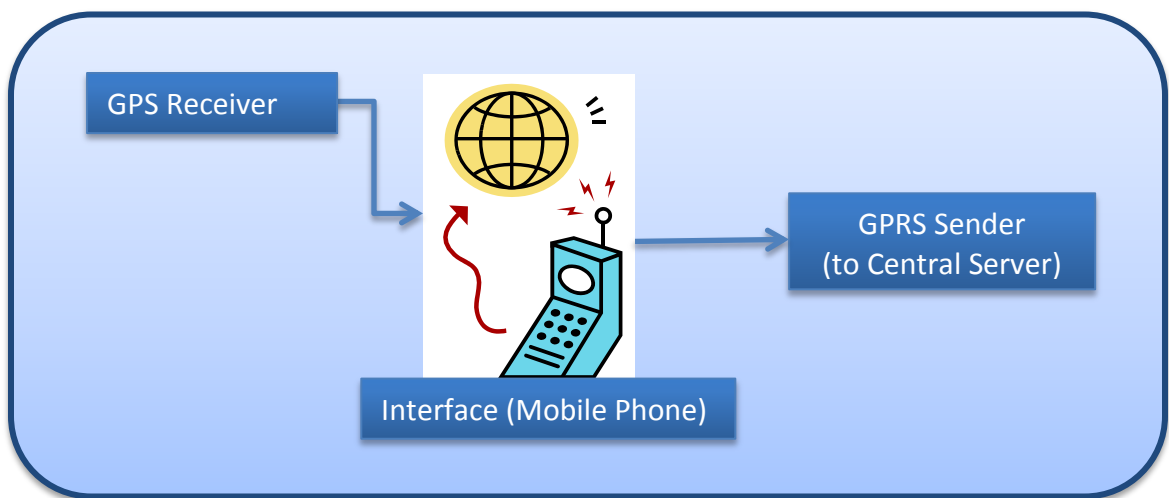
Central Server

This is the main operating unit. It will store all the user accounts and bus routes. It will receive GPRS signals from the Bus Modules every 5 seconds and depending on the bus number and the location of the bus it would send the required SMS alerts to the Users registered for that stop. So this unit will have a module for GPRS receiving and also a module for sending SMSs.

Front End Of Website (User Interface)		Send SMS To User
	Database	SMS Sender
Back End of Website (Operator Interface)		GPRS Modem
		Location Data of Buses

Requirements

- Server.
- Mobile Phone
- GPS/GPRS enabled mobile phone.
- SMS service provider.

Major Tasks

1. **Designing a User interface website for user registration (Hitesh, Manan)**

2. **Interfacing GPRS and GPS (Hitesh, Harsh)**
   a. Understanding how the GPS for mobile works.
   b. Decoding the GPS output to send the required information to the server.
   c. Designing a mobile application to use the GPRS to ping the server every five seconds.

3. **Setting up the server. (Abhinav, Harsh, Manan)**
   a. Integrating GPRS modem.
   b. Integrating SMS sender.
   c. Storing and managing Database.
   d. Implementing Operator Interface on the server.

4. **Testing The Device**

Project Timeline

ID	Task Name	Duration
1	**Designing Website For User Registration**	4w
2	**Interfacing GPRS And GPS**	6w
3	Understanding How GPS/GPRS Works	2w
4	Decoding The GPS Output	2w
5	Designing a Mobile App To Use GPRS To Notify The Server Every 5 Sec.	4w
6	**Setting Up The Server**	9w
7	Integrating GPRS Modem To Receive GPS Data	4w
8	Integrating SMS Sender	4w
9	Storing And Managing Database of Users/ Buses/Routes	3w
10	Implementing Operator Interface For adding/deleting/modifying Routes/Buses.	3w
11	Testing The Device	2w

Timeline headers: Aug 2010 (8/1, 8/8, 8/15, 8/22, 8/29), Sep 2010 (9/5, 9/12, 9/19, 9/26), Oct 2010 (10/3, 10/10, 10/17, 10/24, 10/31), Nov 2010

Web link

www.cse.iitd.ac.in/~cs5080211/pas