Smart Transport System

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Abstract— Bus transportation system takes part of its name from "rapid transit", which describes a high capacity transport system with its own right of way, implemented using bus through infrastructure and scheduling improvements to provide a high level service. Complicated as it sounds, this is nothing but a high capacity articulated bus operating lanes reserved for their exclusive use. This system is commonly referred to as a flexible mass transmit mode that has the advantage of being most economical as compared to the system currently used by the college. Flexibility is both in terms of routes and area coverage. It also includes a number of broad elements such as routes, stops, buses, services and fare collection, etc. In this system, we build a web based application which covers all the aspects of a bus transportation system. This smart transportation system is specifically designed for a college. The 'Smart Transport System' is expected to revolutionize college transport with existing buses, special lanes and routes, all at a low cost. Smart Transport System is a web-based application to be developed in PHP and Android language. The main aim of this project is to provide the details about the bus routes of the college. It gives the details of the stops, students, buses, fee collection, bus card services, etc. It can be used for calculating fuel consumption and can further be extended to our smart city as well.

Key words: Bus, Transport, Location Tracking, Routes

I. INTRODUCTION

Smart systems incorporate functions of sensing, actuation, and control in order to describe and analyze a situation, and make decisions based on the available data in a predictive or adaptive manner, thereby performing smart actions.

In most cases the "smartness" of the system can be attributed to autonomous operation based on closed loop control, energy efficiency, and networking capabilities.

The smart transport system for the college provides the students to access the college bus from their homes. It aims to investigate, analyze, and determine the feasibility of implementing bus transport system.

It also lays stress on developing a low cost transport system that can be implemented easily. It also aims to provide quality performance with efficient management.

II. EXISTING SYSTEM

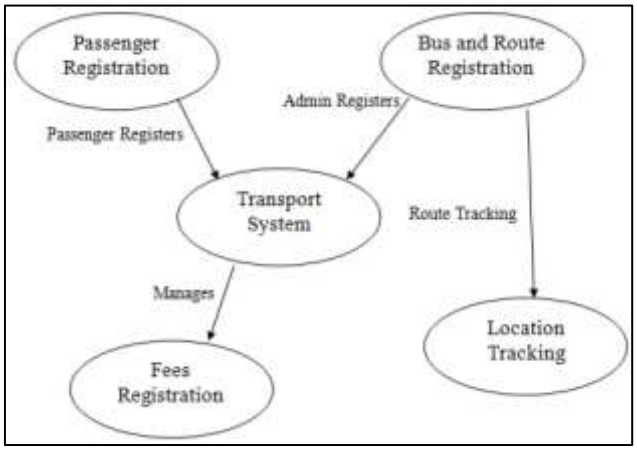

Fig. 1: Flowchart of Transport System

- In the existing system, the entire work is done manually which is time consuming. It is difficult to maintain the passenger details and fee record in registers.
- No proper mechanism is there by which the students of our college can view the buses registered, their routes and timings.
- There is no provision for tracking of the current location of the bus.
- Driver scheduling, vehicle scheduling and cost factors have never been considered seriously. Bus frequencies, total travel time and fleet size has also to be taken into consideration.
- Difficult to maintain the passenger details and fee record in register.
- No online payment facility.

III. PROBLEMS FACED BY PEOPLE

- The most common problem faced by the people is that they are not aware of the bus routes and timings. So there are chances of missing the bus.
- Passengers waste a lot of time at the stops looking for a particular bus.
- Passengers need to stand in queue for long for the fee submission.
- Also the passenger does not have any information about the current location of the bus.
- There is no flexibility in terms of route and area coverage.

IV. OBJECTIVE OF PROPOSED SYSTEM

The main objective of out project is to provide a comprehensive, convenient and smart transport system for the college where the students have access to the college from their homes. It aims to investigate, analyze, and determine the feasibility of implementing bus transport system. It also lays stress on developing a low cost transport system that can be implemented easily.

It also aims to provide quality performance with efficient management. The tracking of the bus route will provide the students easy access to locate the bus. The website allows the user to easily access the relevant information and keep a record of the fees and issue bus cards. The parents will also be aware of their wards boarding the bus and its details. It will be very easy to use. It is aimed for accurate and speedy management and also for searching any necessary information.

V. TECHNOLOGY STACK

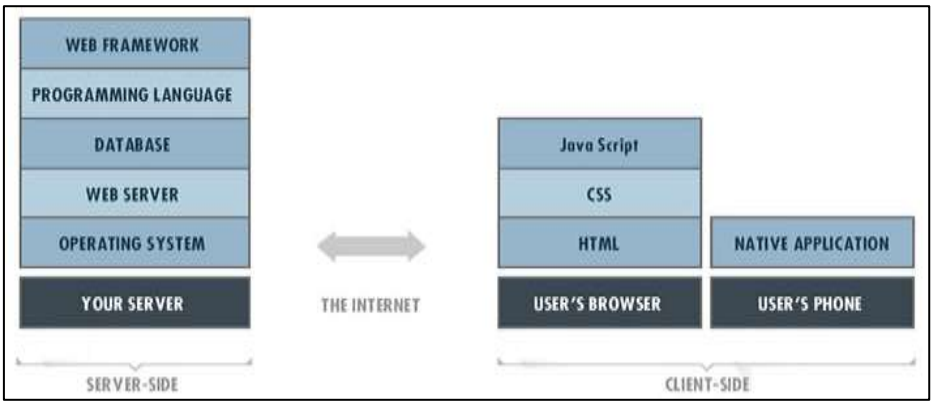

Fig. 2: Technology Stack

A. Dreamweaver

Adobe Dreamweaver (formerly Macromedia Dreamweaver) is a proprietary web development application originally created by Macromedia, and is now developed by Adobe Systems, which acquired Macromedia in 2005. Dreamweaver is available for both Mac and Windows operating systems. Recent versions have incorporated support for web technologies such as CSS, JavaScript, and various server-side scripting languages and frameworks including ASP (ASP JavaScript, ASP VBScript, ASP.NET C#, and ASP.NET VB), ColdFusion, Script let, and PHP.

B. Notepad ++

Notepad++: a free source code editor which supports several programming languages running under the MS Windows environment.

C. PHP

PHP (recursive acronym for PHP: Hypertext Preprocessor) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

D. XAMP Server

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

E. MySQL

MySQL is an open-source relational database management system (RDBMS). The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements.

F. Java Script

JavaScript is a prototype-based scripting language that is dynamic, weakly typed and has first-class functions. It is a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles.

VI. HIGHLIGHTS OF THE SYSTEM

A. Module 1

1) Home and Login

a) Admin Home Page

This is the admin home page. Here the admin will receive all the requests of the passengers who want to join bus facility.

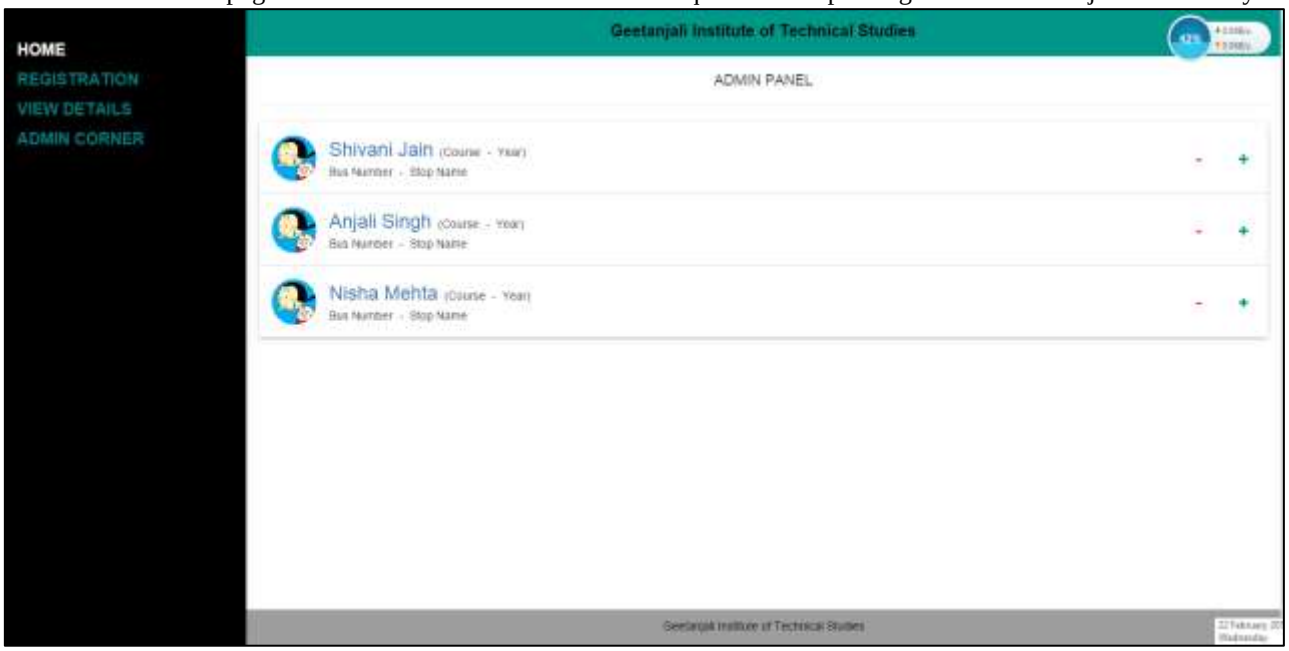

Fig. 3: Home & Login Page

B. Module 2

1) Registration

a) Passenger Registration

The passenger registration is divided into two parts. Passenger can be a student as well as some faculty. The student and faculty will be registered separately and these will be having different entries in the form.

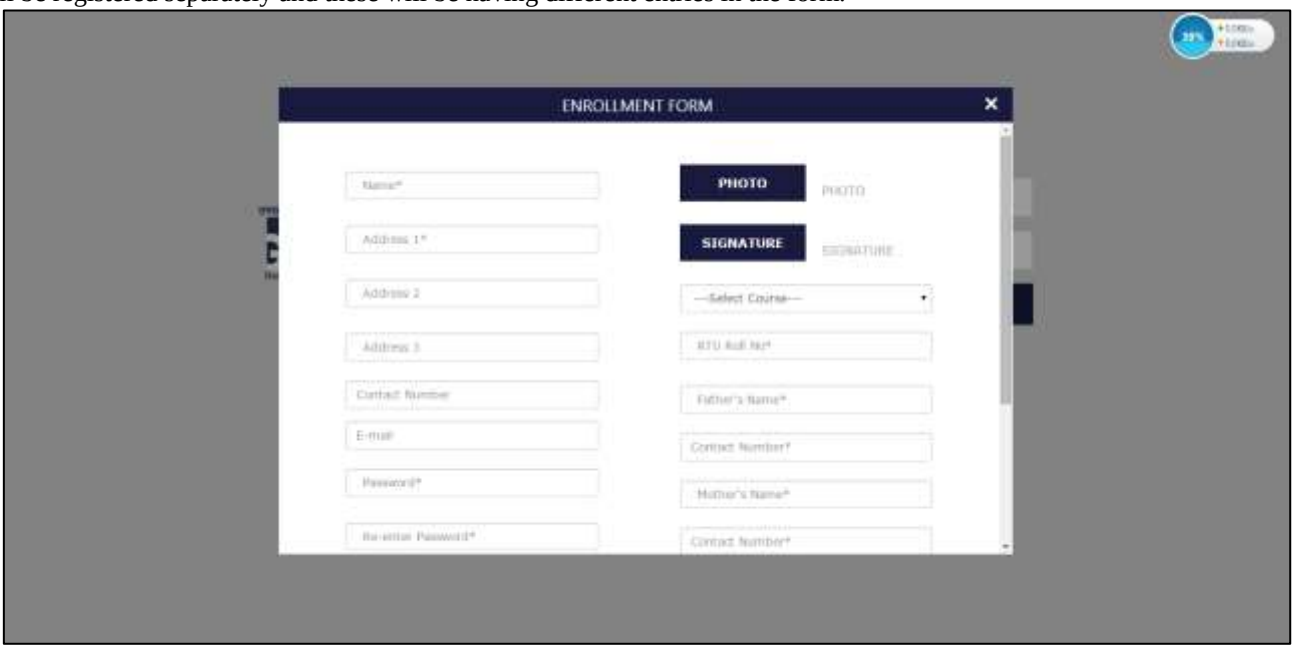

Fig. 4: Registration Page

b) Route Registration

The route registration page is used to register a route. The route and its name along with all its stop details will be registered through this. More than one bus can also run on a particular route. The buses will be registered separately.

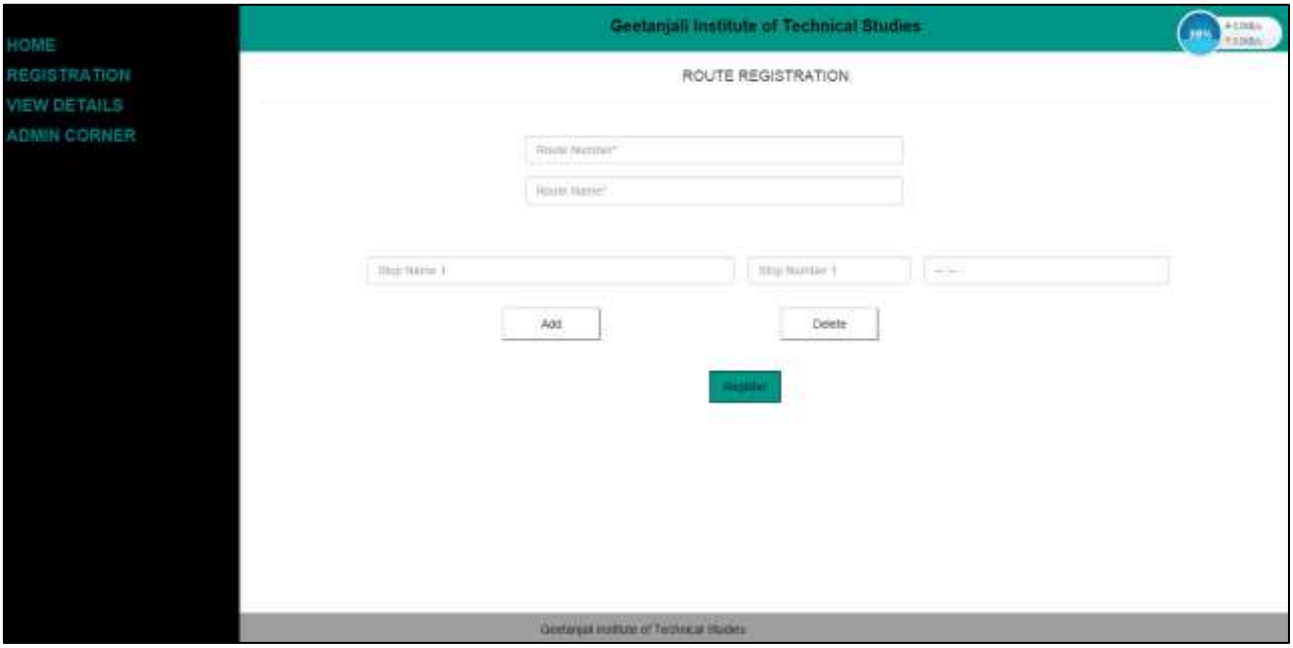

Fig. 5: Route Registration Page

c) Bus Registration

Once we register a route, the buses shall be registered. The bus number, registration number, bus capacity shall also be registered. Each bus will be allotted with a particular driver.

d) Driver Registration

The driver shall be registered by this page. This will keep a record of all the details of the driver. The license number and its copy will also be maintained.

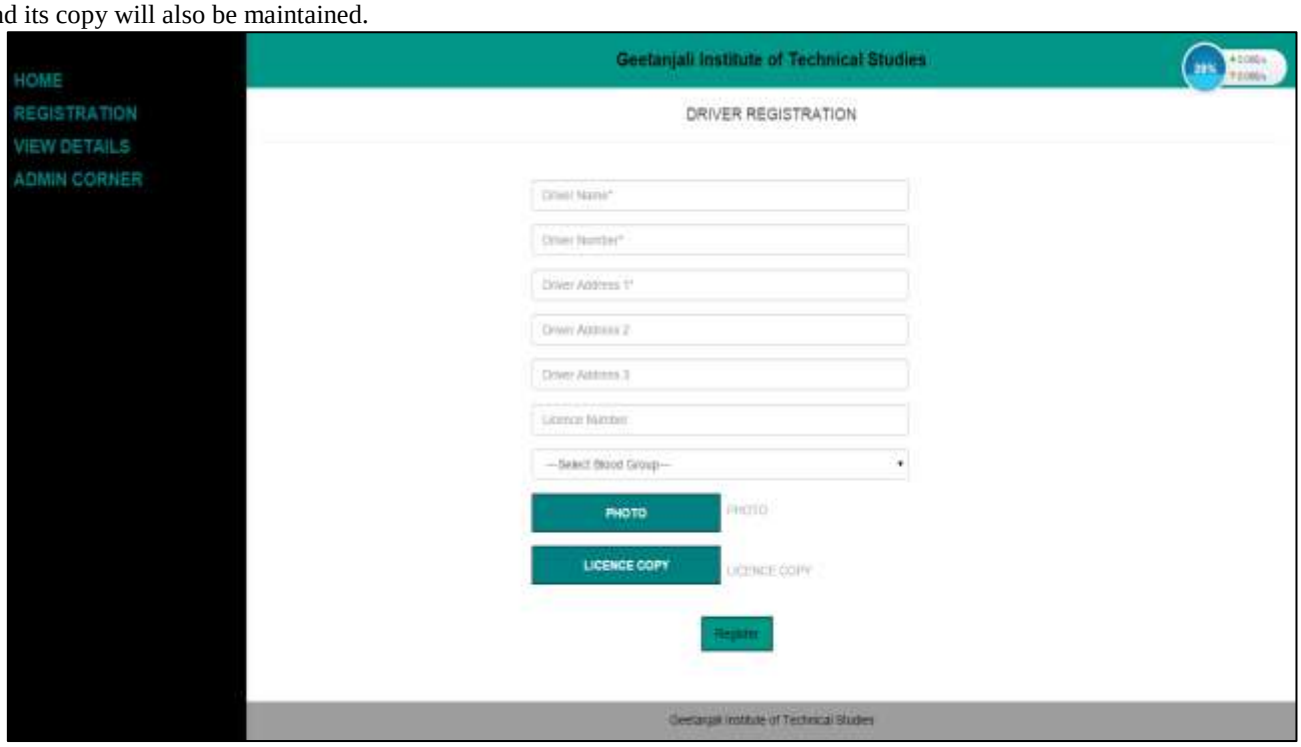

Fig. 6: Driver Registration Page

C. Module 3

1) Fee Module

a) Choosing a bus

When a new passenger registers, he shall have the facility to choose a bus on his own. He can view a bus and select it according to his requirements. After that another page will appear where he can select the plan and mode of payment.

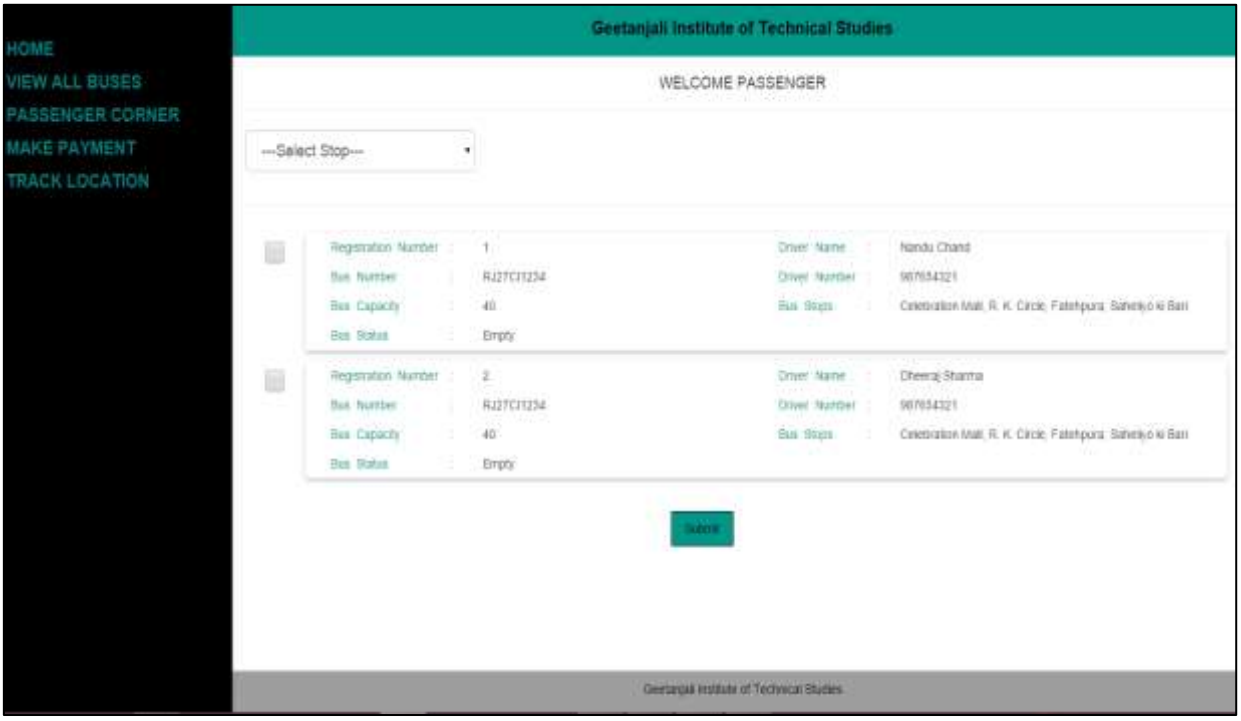

Fig. 7: Select Bus

b) Payment Details

Here the passenger can choose the plan which he wants to take. Suppose he chooses monthly plan, then he will be able to avail the bus services only for that month. He can also select the mode of payment, whether online or offline, through this.

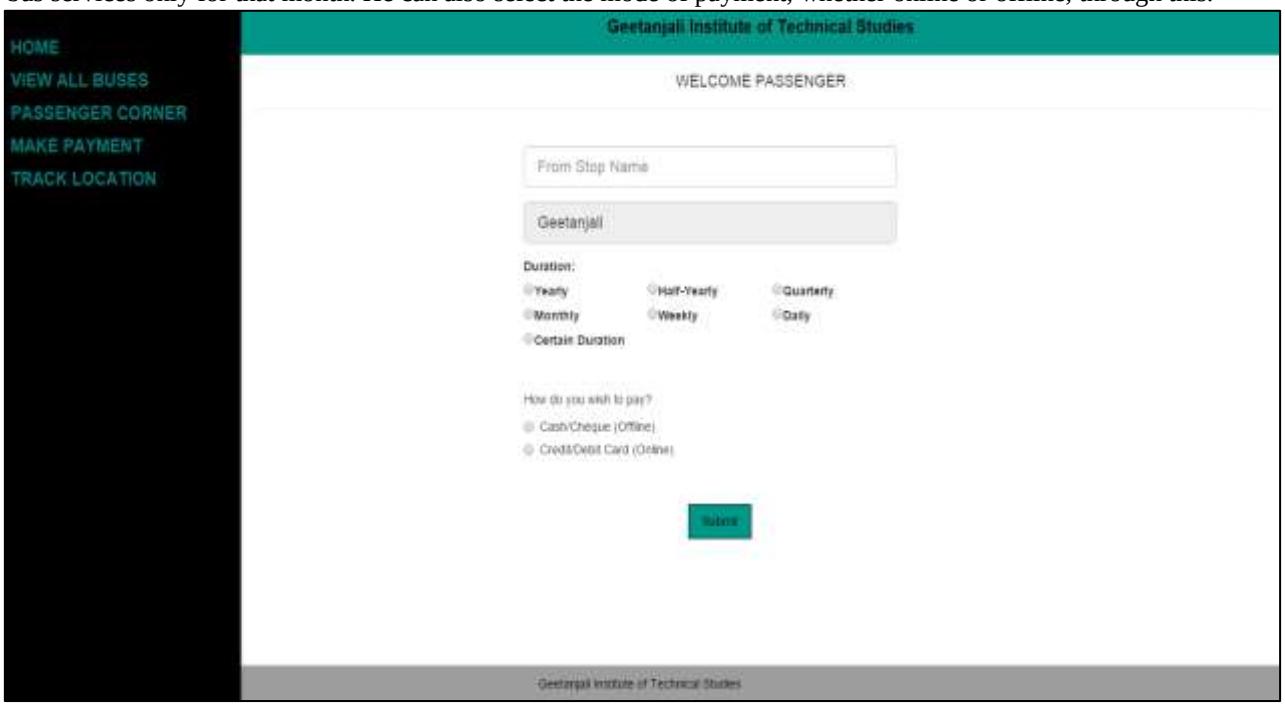

Fig. 8: Payment Details

D. Module 4

1) Location Tracking

With the help of this module, all the buses along with their routes can be tracked. This module will display the bus and its routes. And a marker will move on the route of the bus.

Fig. 9: Location Tracking

2) Other Pages

a) Passenger Profile

The passenger profile will look like this. He can edit his profile details.

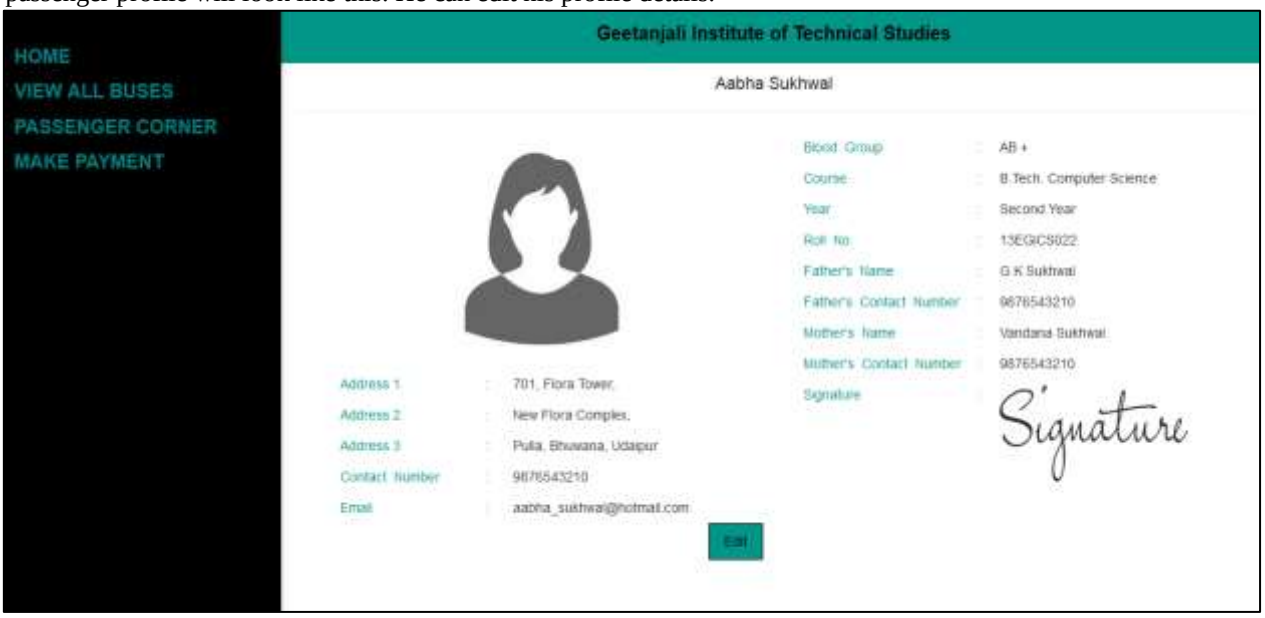

Fig. 10: Passenger Profile

VII. ADVANTAGES AND FUTURE SCOPE

- The project provides a very efficient transportation system to the college. The problem of missing the bus and reaching late to the college will be solved.
- The transparency of the system will be established and a proper bus management could be implemented.
- This system will manage the activities such as keeping track of the passenger information, route information, fee information and various other details that will save time, paper and manpower.
- Once the new system is put into practice, more and more improvements in the system with time will make it full proof. The management and the beneficiaries shall also be at ease.
- This system is helpful to reduce the time and complexity for maintaining the records. It also helps in accurate maintenance of passengers and drivers. Since this system will play a key role in our college, thus success over long period of time and reliance of organization will play a key role. We can add more and more students and bus routes as and when required.
- The project can be further extended to calculate the fuel consumption. Also, we can keep a track of the amount of kilometers the bus travels every day and keep a record of it. Reports can be generated as and when required on time. If this project is in use, it can increase the caliber of the organization.

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