

SHUTTLE CAB TRACKING MANAGEMENT SYSTEM

PROJECT REPORT

Submitted for the course: Computer in Society (EXC 1021) By

SAGAR UDAYAN	16BCE0790
UTKARSH GUPTA	16BCE2103

FACULTY

PROF. GOVINDA K



FEBRUARY, 2017

CERTIFICATE

This is to certify that the project work entitled “SHUTTLE CAB TRACKING MANAGEMENT SYSTEM” that is being submitted by “SAGAR UDAYAN AND UTKARSH GUPTA” for Extra Curricular Activity is a record of bonafide work done under my supervision. The contents of this Project work, in full or in parts, have neither been taken from any other source nor have been submitted for any other CAL course.

Place : Vellore

Date : 6 February 2018

Signature of Students:

1. SAGAR UDAYAN
2. UTKARSH GUPTA

Signature of Faculty: PROF. GOVINDA K

ACKNOWLEDGEMENT

We would like to extend our heart-felt gratitude to our teacher Prof. GOVINDA K who gave us the golden opportunity to do this wonderful project on the topic – “SHUTTLE CAB TRACKING MANAGEMENT SYSTEM” which also helped us in doing a lot of research and we came to know about a lot of new facts which helped us in gaining experience and enhancing our skills in this field.

Secondly, we would also like to thank our friends who helped us in finalizing this project within the limited time frame.

ABSTRACT

VIT has a large campus area of nearly 350 acres in the Vellore campus with over 50.83 lakh sq. ft. built-up space. As we know that for the convenience of its students, VIT runs shuttle cabs throughout the campus. We are planning to design a system for tracking these transport vehicles and informing the students about their location. In our design, the location of these vehicles is acquired via a Global Positioning System (GPS) module. Students can access this using a web application or by using an android application on their smart-phones. This can also be displayed on devices which will be placed at the Shuttle stops present all throughout the campus and inform about the schedule of upcoming cab for the desired location. The location can be also being used by the management for keeping a track of their vehicles for security purposes. Since people have to wait and have no knowledge about the next cab arrival, people face problem in planning their travel judiciously. So, our main moto is to provide accurate location of the cab so that people can save their time while traveling in campus for class and hostel.

In our proposed mechanism, we will be tracking down the location of all the shuttle cabs running throughout the campus. GPS modules can be installed in all the cabs, using which their location is acquired. This location is in the National Marine Electronics Association (NMEA) standard. From this data, the latitude and the longitude are extracted. These coordinates are then sent to the microcontroller onboard the vehicle. This board is also connected to a GPS module. The microcontroller communicates with the GPS module and sends these coordinates to it. They are then sent online to a MySQL database, which is a relational database management system. This database is coded using the PHP and SQL coding language.

A web or an android application will access these coordinates via GPS and plot them on a map. This map has a restricted boundary covering the area of VIT University alone, using geofencing

In our project, we will be using the following languages and software's:

Front-end focused:

- Markup and web languages such as HTML, CSS, JavaScript, and ancillary libraries commonly used in those languages such as jQuery

Back-end focused:

- Scripting languages like PHP and Python.

Database administration software's like MySQL Community Server

Introduction

VIT has its own transport system consisting of shuttle cabs for the better conveyance of its students. The cabs provide free service to the students for travelling from one building to another throughout the campus. The cabs are set to make trips around the campus at fixed timings during the regular class hours and also during the night for transport from the ladies' hostel to the library. The students can also make use of the shuttle service for travelling anywhere within the campus.

In VIT, sometimes the students have their classes in different academic buildings. They need to change from one academic building to the other within a span of time. Because of the large campus area, they make use of the shuttle cab services provided by VIT University. Time-table for the cabs is displayed but it sometimes becomes inconvenient for the students in-case a cab gets delayed. The students are generally unaware of the location of the cabs and so might have to wait for a time to catch the next cab. In-case the cab has departed; the waiting time goes in vain. Currently there is no solution for this problem. At the most students can call their friends to know the location. This becomes inconvenient if followed on a regular basis. Being a student, we have come across situations like these. We would like to overcome this problem so that everyone can commute conveniently throughout the campus.

In our design, we have developed a solution to this problem. We have made use of GPS along with GSM/GPRS, Arduino and android technology to tackle the problem in an efficient way.

LITERATURE REVIEW

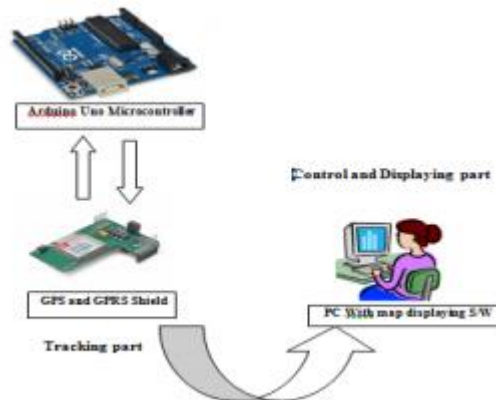
Global Positioning System (GPS) is becoming widely used for tracking and monitoring vehicles. The system has been used for tracking vehicle in real time using GPRS (General Packet Radio Service) technology. The systems provide the possibility of tracking the location of vehicles at an affordable cost. A vehicle tracking system can enable the fleet operator to find out the location of the vehicle throughout the journey of the vehicle. The system has provided GPS-GPRS based vehicle tracking system. The current position of the vehicle has been acquired by GPS device which is integrating into the target vehicle and the location coordinates can be sent through GPRS, it is provided by the GSM network. The GPS receiver is used to give latitude and longitude of the current location. The proposed system can be built using the microcontroller. This is the heart of the system. The GPS receiver connects to microcontroller through the serial port and is used to obtain the current location. The GPS receiver acquires the current position of the location and this information of vehicle transmits to tracking server using GPRS modem. GPRS provides TCP/IP connection with tracking server. Tracking server receives vehicle location information via network and stores this information in database. This information is available to authorized users of the system over the internet on map.

The aim of this project is to design & develop a vehicle tracking system using GPRS which can be easily controlled by Arduino Uno. In this modern, fast moving and insecure world, it has become a basic necessity to be aware of one's safety. The number of vehicles also increases on roads and highways. The proposed system is a GPS based real time vehicle tracking system, is used for security applications as well as any organization that maintains a large fleet and wants accurate real-time information about vehicle position. For the implementation of this system use navigational technologies such as GPS, GPRS and database technologies. The system will be installed in a vehicle to allow the owner to track the vehicle's location, this system will use GPS and GPRS module. Global Positioning System can determine the precise location of a vehicle. The GPS antenna present in the GPS receiver module receives the information from the GPS satellite in NMEA (National Marine Electronics Association) format and this information transmits to a server using GPRS module. GPRS provides TCP/IP connection with tracking server. Tracking server has received vehicle location information via network and stores this information in database. This information is available to authorized users of the system over the internet on map. GPS is a satellite based navigation system, it is made up of 24 satellites, these satellites placed into the orbit. These satellites transmit coded information towards GPS receiver, this information is used to identify vehicle locations on earth by measuring the distance from the satellites. GPRS network is an "always on", private network for data. It uses the existing GSM network to transmit and receive TCP/IP based data to and from GPRS device/module. It supports packet switched data services such as email and web browser. GPRS allows network operators to implement IP-based core architecture for data applications. The GPRS can transfer data at the maximum rate of 115.2 kbps. It is most suitable for a real-time tracking management system.

The main objective of this project is to develop a vehicle location tracking system for tracking purpose. The signal received from satellite is sent to hardware devices for further processing and finally the signal is sent to the PC for displaying on the Google Map. This project is divided into two parts which are the tracking part and a displaying part. The tracking part is responsible for obtaining the user location while the control and displaying part is for displaying the detected location on the Google Map. The hardware devices that are used in this project are the GPS and GPRS Shield Module and Arduino UNO Microcontroller. All of these hardware devices are being programmed by using AT

commands, and Arduino programming, php script. The software that used to write the code is Arduino IDE. Besides that, a user interface was created by using a php script

A. Hardware Representation:

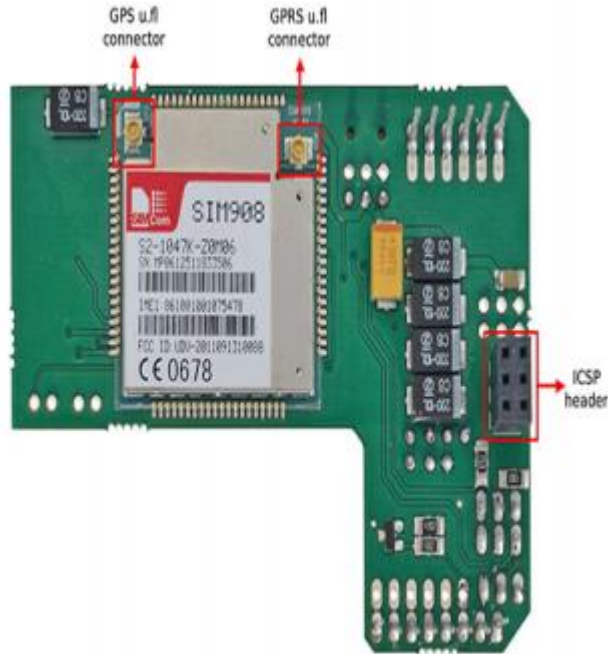


B. GPS Receiver Module

Every single location in the entire globe can be specified in terms of geographical coordinates. The geographical coordinate is a system which specifies any given location on the earth surface as latitude and longitude. There are devices which can read the geographical coordinates of a place with the help of the signals received from a number of satellites orbiting the earth. The system of satellites which helps in the positioning of a place is called Global Positioning System (GPS). The devices which can read the geographical coordinates of a place with the help of at least four GPS satellites are called GPS Receiver or simply GPS module. The GPS module continuously produces a set of data regarding the position of the earth surface where it is situated which includes the current position with respect to the equator of the earth in terms of Latitude and Longitude. In this project the data regarding the geographical coordinate is extracted from the GPS output with the help of the Arduino. The Arduino can be used as a stand-alone board of which the output or inputs can be taken from the boards or given to the board.

C. GPS and GPRS shield assembly

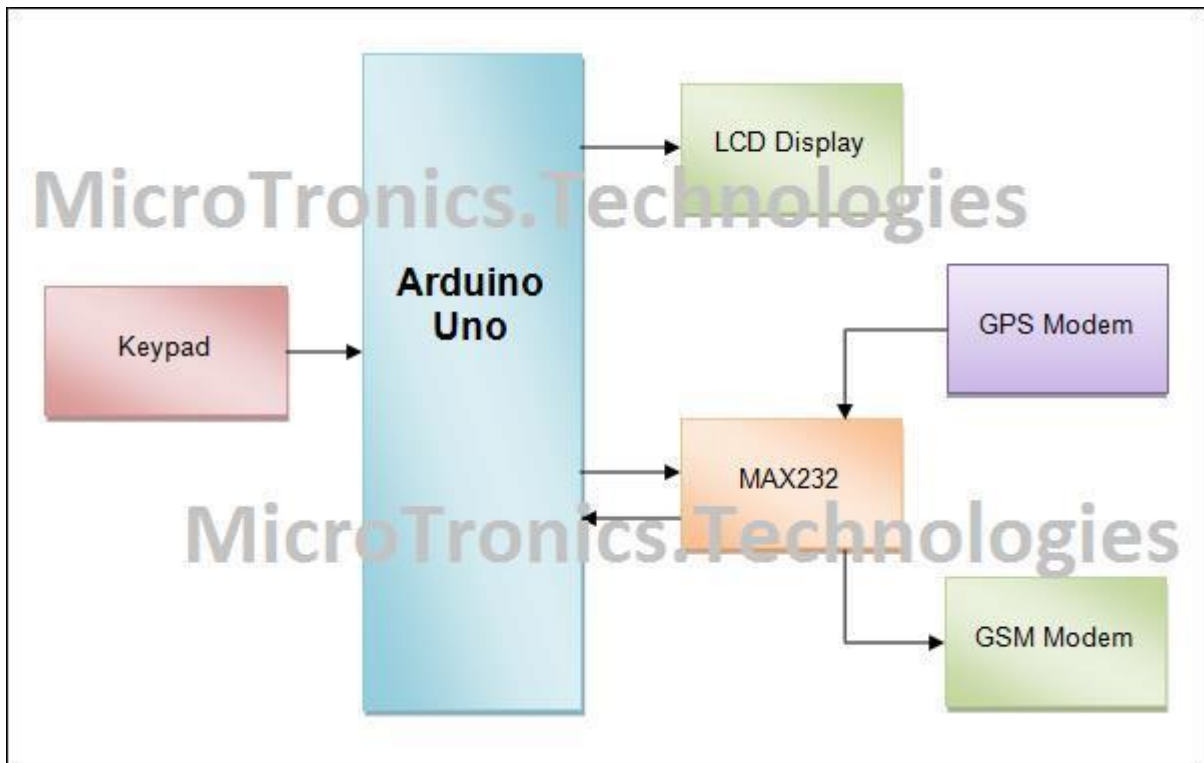
First assemble the GPRS+GPS shield with the antennas and the simcard installed, and configure your APN, login and password.. Also, set the URL with the IP address of your computer (external IP, not the LAN IP address) or your server's domain. The GPRS+GPS shield is connecting to the network and GPS module get position data and the 3G module that sends the HTTP request with the coordinates of the vehicle. It starts to send the HTTP request every few seconds with data of the position (latitude and longitude). It sends the GPS data through the Internet to the php. Script in your computer. Then we get the position of the device in Google Maps



There are various Advanced Arduino Projects which solves the problems in our life. This is one of those Arduino projects. The advanced vehicle tracking system is an enhanced system that allows a user to track the vehicle using GPS along with GSM modem. Using this vehicle tracking system user gets the location details of the vehicle where it is currently on his mobile and it can track it on Google map. For this purpose, we are using Arduino Uno as the main processing unit. The whole system is controlled by Arduino Uno. This Arduino is interfaced to LCD to display longitude and latitude. Also, it is interfaced to GPS and GSM modem. GSM modem is used to send SMS to the owner of the system. Once you start system it starts sending location details. The user receives an SMS containing URL of location details. Once the user clicks on URL, he/she can see the location on Google Map with a marker. Nowadays every smartphone has Google Maps application preinstalled. So this URL opens in the Google Maps app. GPS tracker system constantly keeps on sending SMS of location details of where the vehicle is located. Using the map we can see the places around the vehicle also we can see the road on the map. So by this way the user can get the location of the vehicle and real-time vehicle location details. The system also has an SOS button which is used to send an SMS to the owner if there is any emergency.

Real time vehicle tracking system using Arduino, GSM and GPS is an innovative and user-friendly system. Sometimes company's transportation vehicles consume more and more fuel which results in loss of money. The solution for this is to install GPS tracking device in the vehicle. It sends real-time updates of the vehicle coordinates. It also improves safety and security of our car. We can also see the history by scrolling down through the SMS history in our SMS inbox. By using tracker system can see what time car was at which place.

Block Diagram:



GPS stands for Global Positioning System. Three satellites give exact position which means GPS modem should receive the signal from 3 satellites. GPS receives data from Antenna. GPS antenna should be sky facing. GSM module is used to communicate for calls and SMS. We need to insert sim card into the GSM modem.

Smart GPS tracking device should be fitted inside the car where it is not visible. This project can be operated on battery of the vehicle

Applications of GPS Vehicle Tracker:

- 1) Vehicle tracker can be used in a motor cycle, car, school bus, truck, transport vehicles.
- 2) We can also use this system for vehicle accident detection. And we can use it for woman tracking, child tracking system.

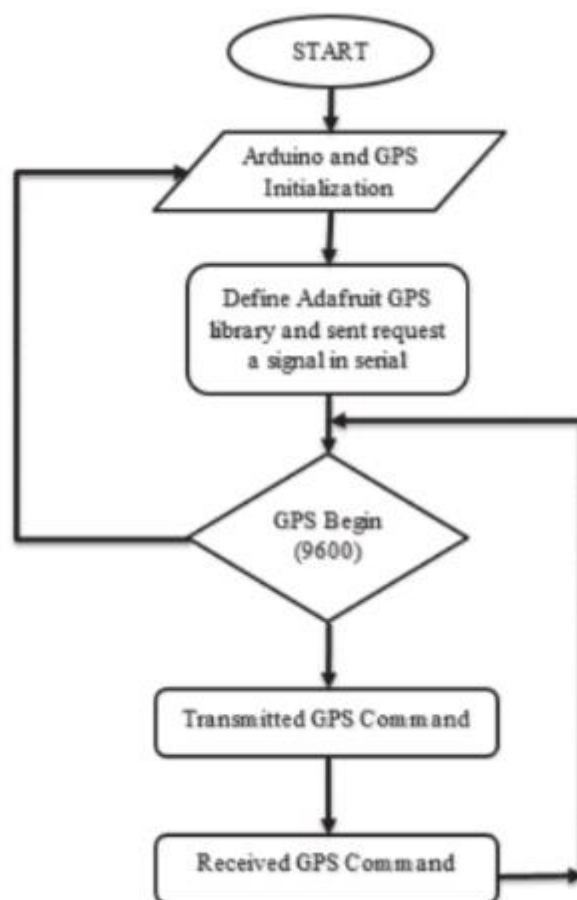
Advantages of GSM and GPS vehicle tracking system:

- 1) We don't have to call the driver to know their location. We can track the route
- 2) Fleet management system is fastest, easiest and reliable. So user can stay stress-free by installing this system to track his/her vehicle

Future Development:

- 1) We can send multiple SMS to multiple mobile numbers. Also, we can dial a call to the mobile numbers.
- 2) Over-speed detection and hard breaking detection can be done in a future enhancement.
- 3) We can send data to a server using IOT (Internet of Things) and then we can see the location by accessing the website through internet.

Figure shows the workflow of coding between hardware, such as sending and receiving commands, starting with initializing a complete interconnection circuit between the Arduino and the GPS. Then the Adafruit GPS library is defined, and a request is sent through a signal in serial port communication to the computer. We begin the GPS starting value at 9600 to get a satellite signal; if not, the value will start again from the first process. Furthermore, the GPS transmits a command regarding the updated location. The process repeats until the device is switched off.



Proposed Method

In our proposed mechanism, we are tracking down the location of all the shuttle cabs and cabs running throughout the campus. GPS modules can be installed in all the transport vehicles, using which their location is acquired. This location is in the National Marine Electronics Association (NMEA) standard. From this data the latitude and the longitude are extracted. These coordinates are then sent to the microcontroller on-board the vehicle. This board is also connected to a GPRS module. The microcontroller communicates with the GPRS module and sends these coordinates to it. They are then sent online to a MySQL database, which is a relational database management system. This database is coded using the PHP coding language.

These coordinates via GPRS are plotted on a map and displayed on screen. This map has a restricted boundary covering the area of VIT University alone, using geofencing. The location is displayed as a black dot. We have made a provision for displaying all the transport vehicles on a single map. Each transport vehicle will have its own display device, which will display the location of every other vehicle. For each vehicle, its own location will be displayed using a black dot and that of the other vehicles will be displayed with a blue dot. Using this, the drivers will have an idea of the location of other vehicles. Students can access this app using their android based smart-phones and so it will become convenient for them to know the location of the cabs.

A provision is made for the students who are unable to access this application by installing android based devices at the stops. We have included an additional functionality of intimating the shuttle drivers regarding the need for shuttle service. The students can intimate the shuttle driver for request of service by pressing a button present in the app. When a student presses the button, a signal is sent to the counter present on the MYSQL Server. For each shuttle stop, a separate counter will be present. A central microcontroller is always connected to the MYSQL server. This microcontroller monitors the counter for each and every shuttle stop. When the number of requests at a particular stop exceeds seven, within a span of five minutes, the microcontroller intimates all the shuttle drivers regarding the need for service by displaying that stop with a red marker. Once this signal has been sent, the microcontroller instructs the MYSQL server to clear the counter for that stop.

STRUCTURE

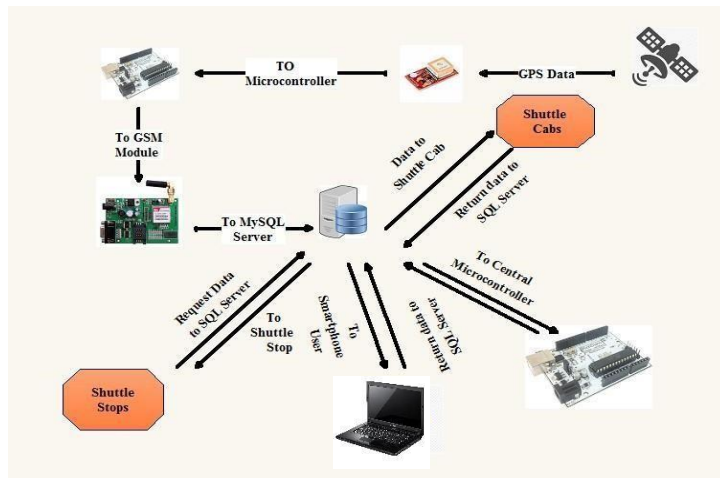


Fig. Algorithm

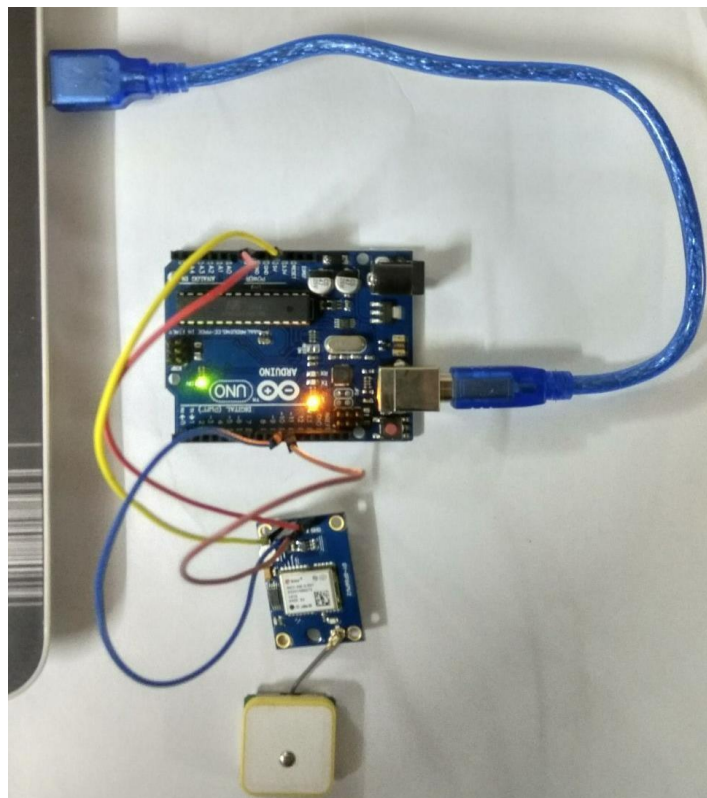


Fig. Circuit Diagram

RESULTS AND IMPLEMENTATION

To test our proposed mechanism, we obtained the location of the GPS module on the arduino board. We obtained the co-ordinates of a path from L-Block Hostel of VIT University to the Silver Jubilee Tower(SJT) building and logged this data into a text file. The circuit shown shows our GPS module connected to the arduino board, which in-turn is connected to the laptop via the USB port. This data obtained is collected by the computer in a text file. The data obtained is in the form: Longitude, Latitude, Altitude. The data is then plotted on map and driver details and cab id is stored in database.

On running gps.htm we obtain a pop-up to enter runner-id:



After entering the value of runner id we obtain:

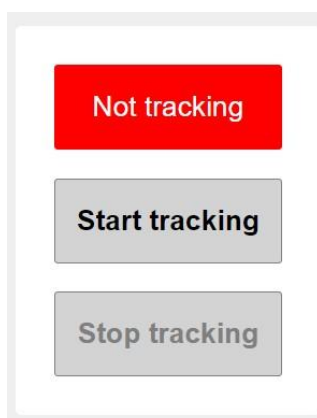
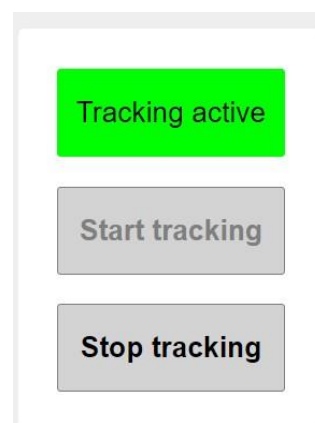


Fig. To Start Tracking



**Fig. When tracking has been started
or in active state**

VIT MAP



SUMMARISED RESULT:

VIT SHUTTLE CAB TRACKING DETAILS

Friday, October 27, 2023

VIT SHUTTLE CAB > Viewing Schedule

Allmart to SJT

doms

	GURU	SAHIL	RAHUL	AMAN	RAMIT		113	675	355	234	5225		SJT	ALLMART	HOSTEL	HOSTEL	SJT		ALLMART	HOSTEL	SJT	ALLMART	HOSTEL		2015-	2015-	2015-	2015-	2015-
Driver	RATAN	CHOPRA	RAJ	SAI	GUPTA	Cab																			10-06	10-06	10-06	10-06	10-06
Name						Number						From					Destination							Departure	15:50:53	15:50:53	15:50:53	15:50:53	15:50:53

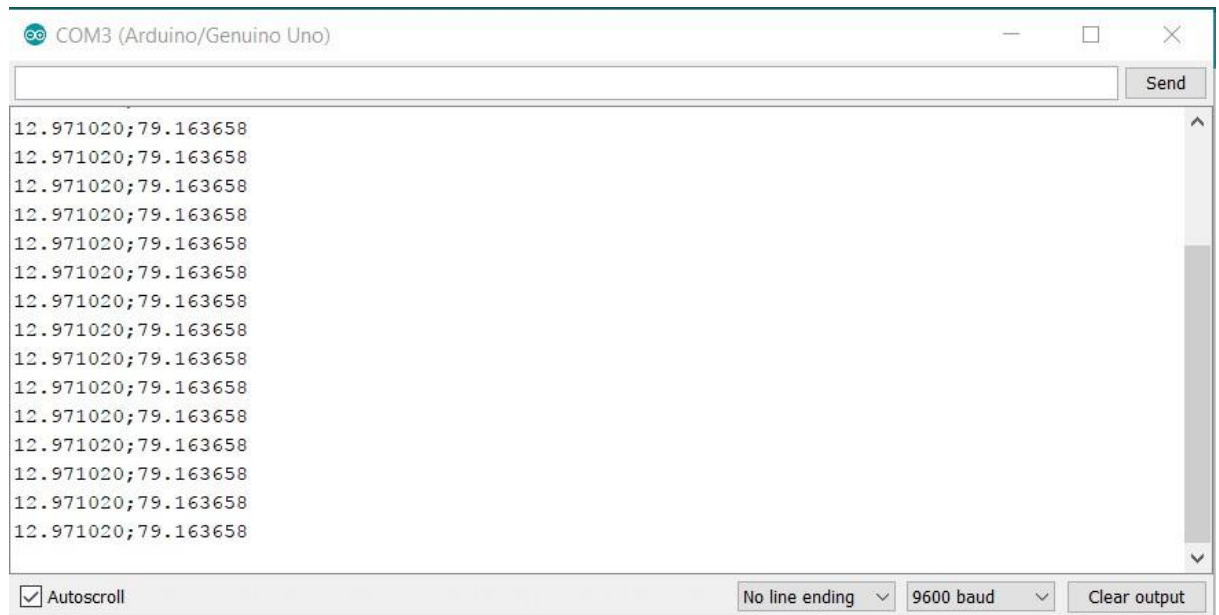


Fig. GPS Co-Ordinates

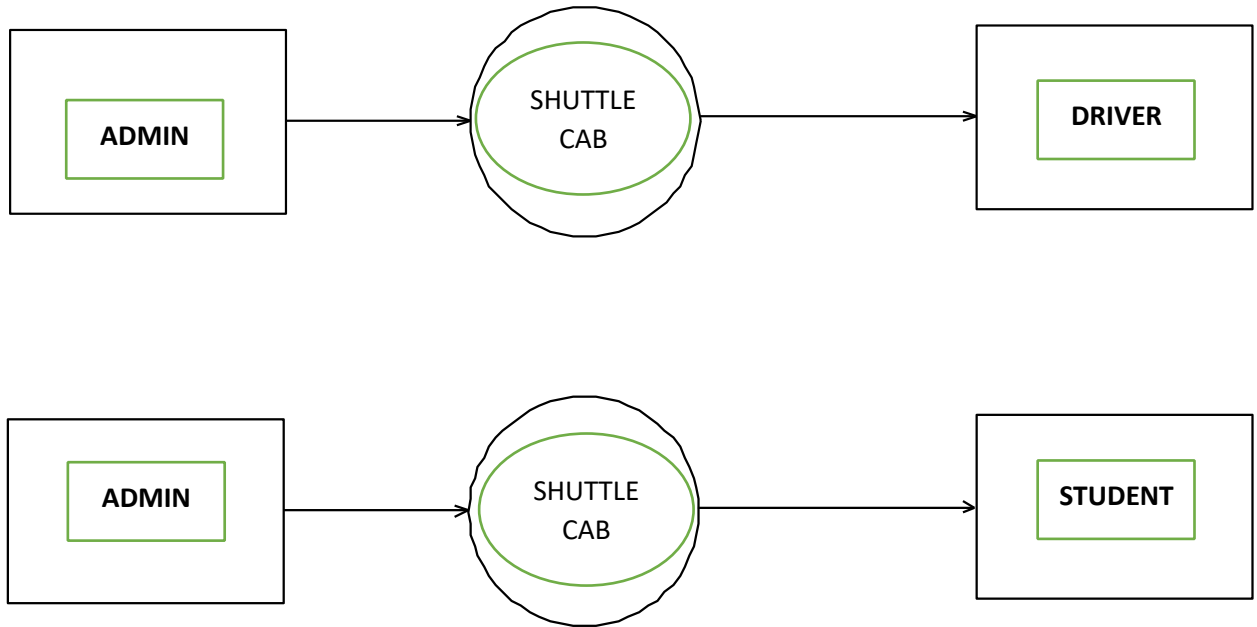
DATA FLOW

- 1) A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The later is usually indicated however by two separate arrows since these happen at different type.
- 2) A join in DFD means that exactly the same data comes from any of two or more different processes data store or sink to a common location.
- 3) A data flow cannot go directly back to the same process it leads. There must be at least one other process that handles the data flow produce some other data flow returns the original data into the beginning process.
- 4) A Data flow to a data store means update (delete or change).
- 5) A data Flow from a data store means retrieve or use.

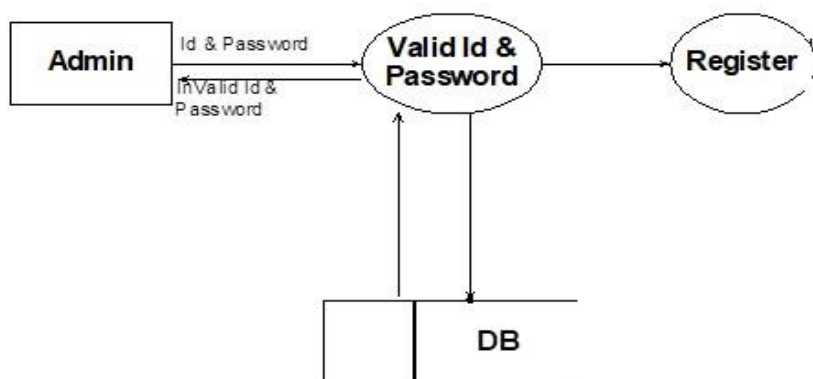
A data flow has a noun phrase label more than one data flow noun phrase can appear on a single arrow as long as all of the flows on the same arrow move together as one package.

LEVELS AND MODULES:

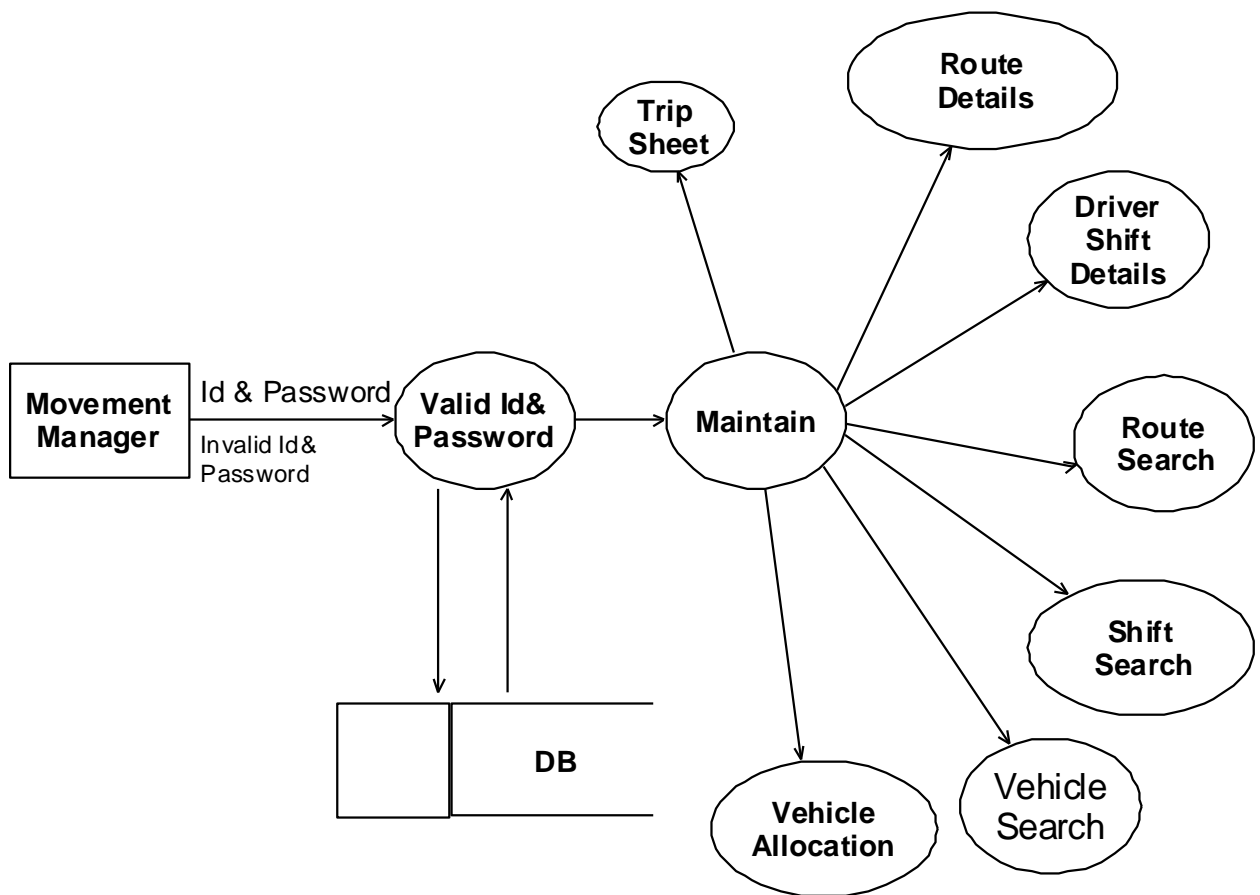
Level 0 Diagram:



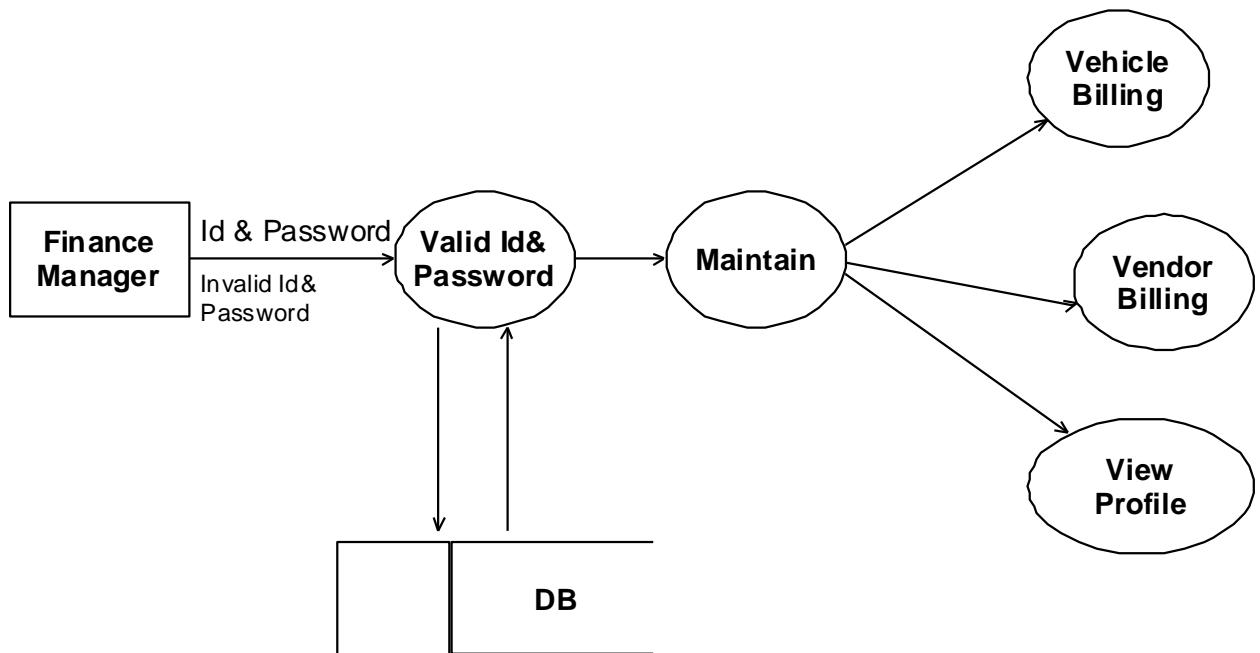
Level 1 Diagram Admin



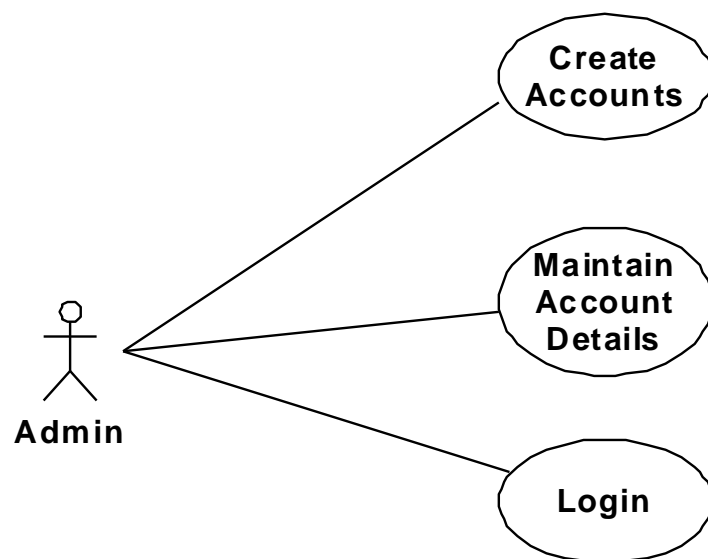
Level 2 Diagram Movement manager:



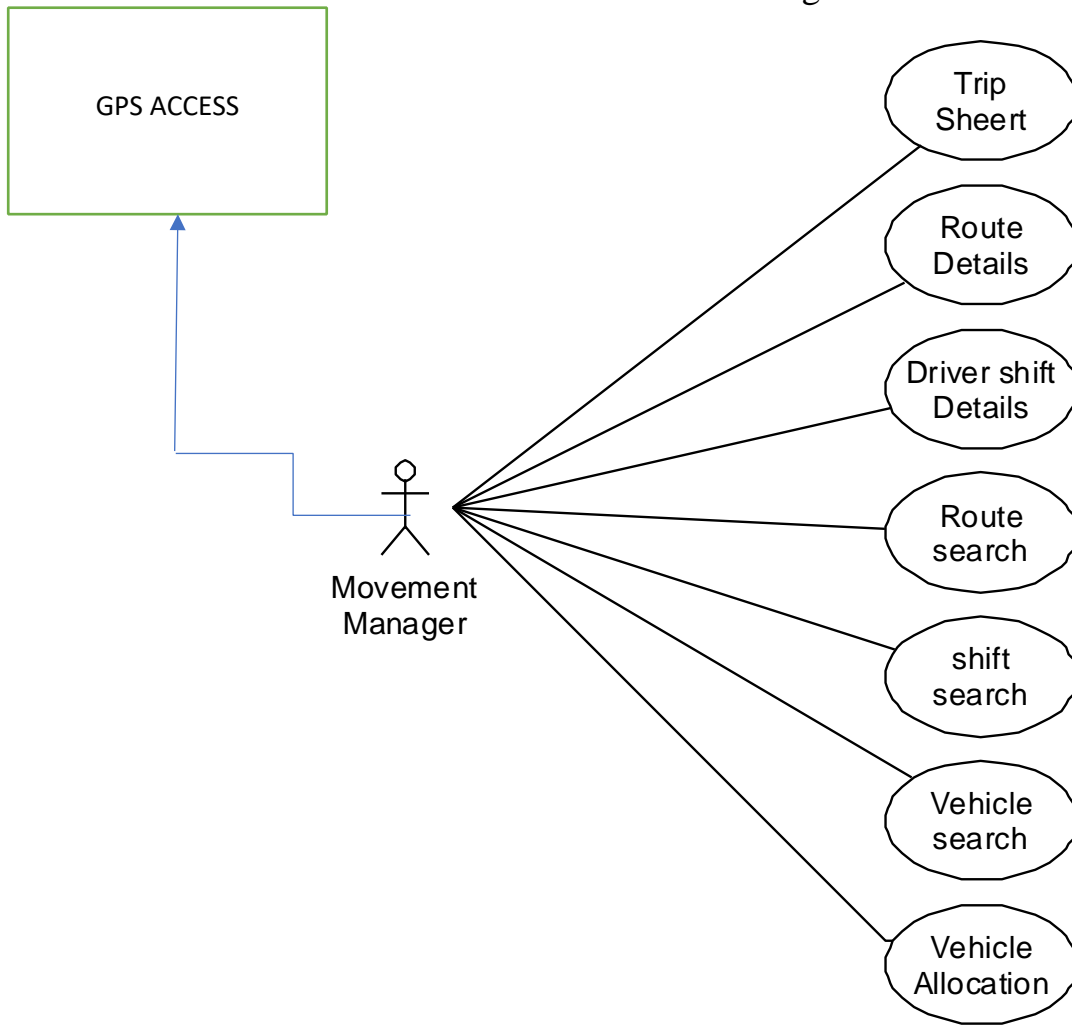
Level 3 Diagram Finance manager:



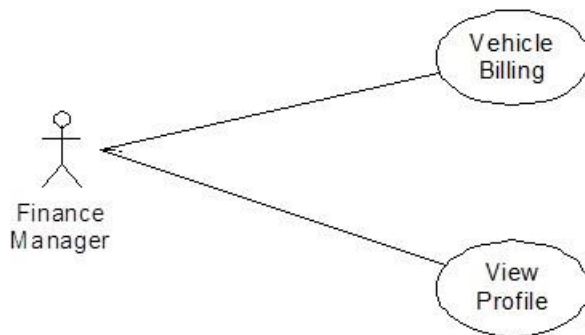
Admin:



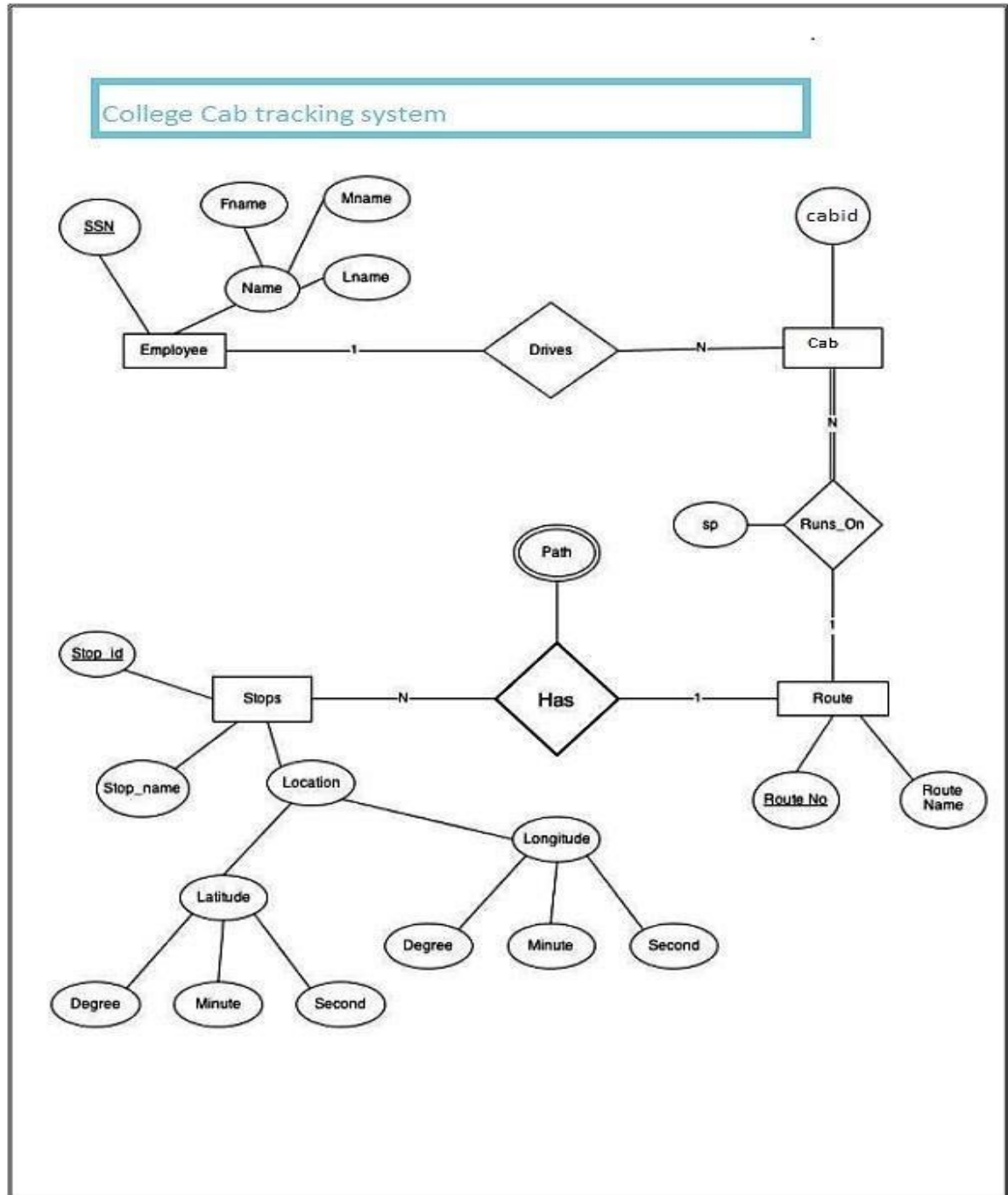
Movement Manager:



Finance Manager:



ER DIAGRAM



DATA DICTIONARY

ADMIN

SNO	COLUMN NAME	DATATYPE	CONSTRAINT
1.	adminid(PK)	int(11)	NOT NULL AUTO_INCREMENT
2.	branchid	int(11)	NOT NULL
3.	firstname	varchar(100)	NOT NULL
4.	lastname	varchar(100)	NOT NULL
5.	username	varchar(100)	NOT NULL
6.	password	varchar(100)	NOT NULL
7.	confirm_password	varchar(100)	NOT NULL
8.	date_added	varchar(100)	NOT NULL

Branch

SNO	COLUMN NAME	DATATYPE	CONSTRAINT
1.	branchid (PK)	int(11)	NOT NULL AUTO_INCREMENT
2.	branch_location	Varchar(100)	NOT NULL
3.	date_added	Varchar(100)	NOT NULL

Cab

SNO	COLUMN NAME	DATATYPE	CONSTRAINT
1.	cabid (PK)	int(11)	NOT NULL AUTO_INCREMENT
2.	cab_number	Varchar(100)	NOT NULL
3.	date_added	Varchar(100)	NOT NULL
4.	cab_travel	Varchar(100)	NOT NULL

Driver

SNO	COLUMN NAME	DATATYPE	CONSTRAINT
1	driverid (PK)	int(11)	NOT NULL AUTO_INCREMENT
2.	firstname	Varchar(100)	NOT NULL
3.	lastname	Varchar(100)	NOT NULL
4.	contact_number	Varchar(100)	NOT NULL
5.	date_added	Varchar(100)	NOT NULL
6.	driver_travel	Varchar(100)	NOT NULL

Schedule

SNO	COLUMN NAME	DATATYPE	CONSTRAINT
1.	scheduleid (PK)	int(11)	NOT NULL AUTO_INCREMENT
2.	cabid	varchar(100)	NOT NULL
3.	driverid	varchar(100)	NOT NULL
4.	from_location	varchar(100)	NOT NULL
5.	destination	varchar(100)	NOT NULL
6.	departure_time	datetime	NOT NULL
7.	arrival_time	datetime	NOT NULL
8.	terminal_location	varchar(100)	NOT NULL
9.	status	varchar(100)	NOT NULL
10.	status_operation	varchar(100)	NOT NULL
11.	arrived_at_destination	varchar(100)	NOT NULL
12.	date_added	datetime	NOT NULL

Tracks

SNO	COLUMN NAME	DATATYPE	CONSTRAINT
1.	pointid (PK)	int(11)	NOT NULL AUTO_INCREMENT
2.	runnerid	Varchar(255)	NOT NULL
3.	lat	Decimal(7,5)	NOT NULL
4.	lon	Decimal(8,5)	NOT NULL
5.	time	Varchar(255)	NOT NULL

CODES:

FOR MAP VIEWING:

//HTML

```
<!doctype html>
```

```
<html lang="sv">
```

```
<head>
```

```
    <meta charset="utf-8">
```

```
    <title>Open GPS-tracker</title>
```

```
    <!-- <link rel="stylesheet" href="style.css"> -->
```

```
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.7.1/jquery.min.js"></script>
```

```
    <script src="gps.js"></script>
```

```
    <link rel="stylesheet" href="style.css" />
```

```
    <meta name="viewport" content="width=device-width,user-scalable=no" />
```

```
    <!--[if lt IE 9]>
```

```
    <script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>
```

```
    <![endif]-->
```

```
</head>
```

```
<body>
```

```
<div id="page">
```

```
    <div id="status"><p class="stopped"></p></div>
```

```
    <button id="start">Start tracking</button>
```

```
    <button id="stop" disabled="disabled">Stop tracking</button>
```

```
</div>
```

```
</body>
```

```
</html>
```

```
//PHP: <?php
```

```
header('Content-Type:application/json');
```

```
require_once '../library.php';
```

```
db_connect();
```

```
$link = '';
```

```
$output = array(  
    'compname' => COMP_NAME  
);
```

```
if(isset($_GET['state'])){
```

```
    // getting only the latest point from every runner in the database if($_GET['state'] ==  
    'latest') {
```

```
        db_connect();
```

```
        $query = 'SELECT runnerid, lat, lon  
                  FROM tracks  
                  WHERE pointid = ANY (SELECT MAX(pointid) FROM tracks  
GROUP BY runnerid)  
                  ORDER BY runnerid';
```

```
$result = mysqli_query($link, $query);
```

```
$runners = array();
```

```
while($r = mysqli_fetch_assoc($result)) {
```



```

$runners[] = $r;
}

$output['data'] = "latest";
$output['runners'] = $runners;

echo json_encode($output);
}

// getting all lat/lon-data from the database
elseif($_GET['state'] == 'all') {
    db_connect();

    $query = "SELECT runnerid,
                GROUP_CONCAT(lat ORDER BY pointid DESC SEPARATOR ',')
AS lat,
                GROUP_CONCAT(lon ORDER BY pointid DESC SEPARATOR ',')
AS lon
            FROM tracks
            GROUP BY runnerid
            ORDER BY runnerid";

    $result = mysqli_query($link, $query);

    $runners = array();

    while($r = mysqli_fetch_assoc($result)) {
        $runners[] = $r;
    }

    $output['data'] = "all";
    $output['runners'] = $runners;
    echo json_encode($output);
}

```

```
    }  
}  
else{  
    echo 'Error';  
}
```

```
?>
```

```
//DATABASE
```

```
-- phpMyAdmin SQL Dump
```

```
-- version 3.3.7deb7
```

```
-- http://www.phpmyadmin.net
```

```
--
```

```
-- Host: localhost
```

```
-- Generation Time: May 08, 2012 at 07:14 PM
```

```
-- Server version: 5.1.61
```

```
-- PHP Version: 5.3.3-7+squeeze8
```

```
SET SQL_MODE="NO_AUTO_VALUE_ON_ZERO";
```

```
/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
```

```
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
```

```
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
```

```
/*!40101 SET NAMES utf8 */;
```

```
--
```

```
-- Database: `gpstracks`
```

```
--
```

```
-- -----
```

```
--
```

-- Table structure for table `tracks`

--

```
CREATE TABLE IF NOT EXISTS `tracks` (  
  `pointid` int(11) NOT NULL AUTO_INCREMENT,  
  `runnerid` varchar(255) NOT NULL,  
  `lat` decimal(7,5) NOT NULL,  
  `lon` decimal(8,5) NOT NULL,  
  `time` varchar(255) NOT NULL,  
  PRIMARY KEY (`pointid`)  
) ENGINE=MyISAM DEFAULT CHARSET=utf8 AUTO_INCREMENT=642 ;
```

--

-- Dumping data for table `tracks`

--

```
INSERT INTO `tracks` (`pointid`, `runnerid`, `lat`, `lon`, `time`) VALUES  
(595, 'ram', '12.9714', '79.1581', '2017-10-23T100:21:41Z'),  
(596, 'ram', '12.9715', '79.1582', '2017-10-23T100:21:41Z'),  
(597, 'ram', '12.9716', '79.1583', '2017-10-23T100:21:41Z'),  
(598, 'ram', '12.9717', '79.1584', '2017-10-23T100:21:41Z'),  
(599, 'ram', '12.9718', '79.1585', '2017-10-23T100:21:41Z'), (600,  
'ram', '12.9719', '79.1586', '2017-10-23T100:21:41Z');
```

FOR SUMMARISED VIEWING:

//PHP AND HTML

```
<?php require('header.php'); ?>
```

```
    <ul class="breadcrumb" style="margin-top:1px;">
```

```
        <li>
```

```
            <i class="icon-home"></i>
```

```
            <a href="index.php">VIT SHUTTLE CAB</a>
```

```
            <i class="icon-angle-right"></i>
```

```
        </li>
```

```
        <li><a href="#">Viewing Schedule</a></li>
```

```
    </ul>
```

```
                                <table class="table table-striped table-bordered"
style="width:90%; margin:auto;">
```

```
                                <h2 style="text-indent:20px;">Allmart to SJT </h2>
```

```
                                <thead>
```

```
                                    <tr>
```

```
                                        <th>Driver Name</th>
```

```
                                        <th>Cab Number</th>
```

```
                                        <th>From</th>
```

```
                                        <th>Destination</th>
```

```
                                        <th>Departure</th>
```

```
                                        <th>Expected Arrival</th>
```

```
                                        <th>Next stop</th>
```

```
                                        <th>Status</th>
```

```
                                    </tr>
```

```
                                </thead>
```

```
                                <tbody>
```

```
<?php
```

```
include ('db/dbcon.php');
```

```
$result= mysqli_query($con,"select * from schedule
```

```
LEFT JOIN cab ON schedule.cabid = cab.cabid
```

```
LEFT JOIN driver ON schedule.driverid = driver.driverid where destination_location='SJT'
```

```
ORDER BY schedule.scheduleid DESC ") or die (mysql_error()); while ($row= mysqli_fetch_array  
($result) ){
```

```
$id=$row['scheduleid'];
```

```
$busid=$row['cabid'];
```

```
$driverid=$row['driverid'];
```

```
?>
```

```
<tr>
```

```
$.row['lastname']; ?></td>
<td><?php echo $row['firstname']."
```

```
success"><?php echo $row['cab_number']; ?></span></td>
<td><?php echo
```

```
$row['from_location']; ?></td>
```

```
$row['destination_location']; ?></td>
<td><?php echo
```

```
info"><?php echo date("M d, Y H:i:s",strtotime($row['departure_time'])); ?></span></td>
<td><?php echo ($row['arrival_time'] == "0000-00-00 00:00:00") ? "Travel" : date("M d, Y
```

```
H:i:s",strtotime($row['arrival_time'])); ?></span></td>
<td><?php echo $row['terminal_location']; ?></span></td>
```

```
success"><?php echo $row['terminal_location']; ?></span></td>
<td><?php
```

```
if ($row['status_operation']
== 'On Travel') {
```

```
echo "<td><span
class='label label-info'>". $row['status_operation']. "</span></td>";
```

```
} elseif
($row['status_operation'] == 'Cancelled') {
```

```
echo "<td><span
```

```
class='label label-warning'>".$row['status_operation']."</span></td>";

                                } else {

                                echo "<td><span
class='label label-success'>".$row['status_operation']."</span></td>";

                                }

                                ?>

                                </tr>
```

```
<?php } ?>
```

```
</tbody>

</table>
```

```
<br />
```

```
<br />
```

```
<br />
```

```
                                <table class="table table-striped table-bordered"
style="width:90%; margin:auto;">

                                <h2 style="text-indent:20px;">Hostel to allmart

                                </h2>
```

```
                                <thead>

                                <tr>

                                <th>Driver Name</th>        <th>Cab Number</th>

                                <th>From</th>

                                <th>Destination</th>

                                <th>Departure</th>

                                <th>Expected Arrival</th>

                                <th>Next stop</th>

                                <th>Status</th>

                                </tr>

                                </thead>

                                <tbody>
```

```
<?php
```

```

include ('db/dbcon.php');

$result= mysql_query("select * from schedule
LEFT JOIN cab ON schedule.cabid = cab.cabid
LEFT JOIN driver ON schedule.driverid = driver.driverid
where destination_location='SJT' ORDER BY schedule.scheduleid DESC ") or die (mysql_error());
while ($row= mysql_fetch_array ($result) ){
$id=$row['scheduleid'];
$busid=$row['cabid'];
$driverid=$row['driverid'];
?>

<tr>

<td><?php echo $row['firstname'].
".$row['lastname']; ?></td>

<td><span class="label label-
success"><?php echo $row['cab_number']; ?></span></td>

<td><?php echo
$row['from_location']; ?></td>

<td><?php echo
$row['destination_location']; ?></td>

<td><span class="label label-
info"><?php echo date("M d, Y H:i:s",strtotime($row['departure_time'])); ?></span></td>

<td><span class="label label-
success"><?php echo ($row['arrival_time'] == "0000-00-00 00:00:00") ? "Travel" : date("M d, Y
H:i:s",strtotime($row['arrival_time'])); ?></span></td>

<td><span class="label label-
success"><?php echo $row['terminal_location']; ?></span></td>

<?php
if ($row['status_operation']
== 'On Travel') {

echo "<td><span
class='label label-info'>".$row['status_operation']. "</span></td>";

} elseif
($row['status_operation'] == 'Cancelled') {

echo "<td><span
class='label label-warning'>".$row['status_operation']. "</span></td>";

```

```

                                } else {
                                echo "<td><span
class='label label-success'>".$row['status_operation']."</span></td>";
                                }
                                ?>
                                </tr>

<?php } ?>

                                </tbody>
                                </table>

```


<?php require('footer.php'); ?>

[//DATABASE](#)


```
-- phpMyAdmin SQL Dump
-- version 4.0.4
-- http://www.phpmyadmin.net
--
-- Host: localhost
-- Generation Time: Oct 06, 2015 at 08:37 AM
-- Server version: 5.6.12-log
-- PHP Version: 5.4.12

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET time_zone = "+00:00";

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */; /*!40101
SET NAMES utf8 */;

--
-- Database: `terminal_bdis`
--

CREATE DATABASE IF NOT EXISTS `terminal_bdis` DEFAULT CHARACTER SET latin1 COLLATE
latin1_swedish_ci;
USE `terminal_bdis`;

-----

--
-- Table structure for table `admin`
--

CREATE TABLE IF NOT EXISTS `admin` (
```

```

`adminid` int(11) NOT NULL AUTO_INCREMENT,
`branchid` int(11) NOT NULL,
`firstname` varchar(100) NOT NULL,
`lastname` varchar(100) NOT NULL,
`username` varchar(100) NOT NULL,
`password` varchar(100) NOT NULL,
`confirm_password` varchar(100) NOT NULL,
`date_added` varchar(100) NOT NULL,
PRIMARY KEY (`adminid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=19 ;

--
-- Dumping data for table `admin`
--

INSERT INTO `admin` (`adminid`, `branchid`, `firstname`, `lastname`, `username`, `password`,
`confirm_password`, `date_added`) VALUES
(1, 1, 'ram', 'kumar', 'ram', 'admin', 'password', 'Aug 27 2017 11:37 AM'),
(2, 4, 'shyam', 'reddy', 'rolly', 'admin', 'admin', 'Aug 27 2017 11:37 AM'),
(3, 4, 'jatin', 'bansal', 'jonathan', 'admin', 'admin', 'Aug 27 2017 11:38 AM'),
(4, 2, 'abishek', 'jha', 'elias', 'admin', 'admin', 'Aug 27 2017 11:38 AM'),
(5, 3, 'guru', 'ratan', 'rene', 'admin', 'admin', 'Aug 27 2017 11:39 AM'),
(6, 1, 'akhil', 'reddy', 'nixon', 'admin', 'admin', 'Aug 27 2017 11:40 AM'),
(9, 3, 'dhruv', 'goel', 'Daniel', 'admin', 'admin', 'Aug 27 2017 11:40 AM');

-- -----
--
-- Table structure for table `branch`
--

CREATE TABLE IF NOT EXISTS `branch` (

```

```

`branchid` int(11) NOT NULL AUTO_INCREMENT,
`branch_location` varchar(100) NOT NULL,
`date_added` varchar(100) NOT NULL,
PRIMARY KEY (`branchid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=5 ;

--
-- Dumping data for table `branch`
--

INSERT INTO `branch` (`branchid`, `branch_location`, `date_added`) VALUES
(1, 'VIT VELLORE', 'Aug 27 2013 11:36 AM'),
(2, 'VIT CHENNAI', 'Aug 27 2015 11:36 AM'),
(3, 'VIT BHOPAL', 'Aug 27 2017 11:36 AM'),
(4, 'VIT AMRAVATI', 'Aug 27 2017 11:37 AM');

```

```

-----

```

```

--
-- Table structure for table `bus`
--

```

```

CREATE TABLE IF NOT EXISTS `cab` (
  `cabid` int(11) NOT NULL AUTO_INCREMENT,
  `cab_number` varchar(100) NOT NULL,
  `date_added` varchar(100) NOT NULL,
  `cab_travel` varchar(100) NOT NULL,
  PRIMARY KEY (`cabid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=10 ;

```

```

--

```

-- Dumping data for table `bus`

--

```
INSERT INTO `cab` (`cabid`, `cab_number`, `date_added`, `cab_travel`) VALUES (3, '113', 'Aug 29 2015 02:56 PM', 'No'),
```

```
(4, '675', 'Aug 29 2015 02:56 PM', 'Yes'),
```

```
(5, '355', 'Sep 07 2015 12:46 PM', 'Yes'),
```

```
(6, '234', 'Sep 15 2015 04:54 PM', 'No'),
```

```
(7, '3542', 'Sep 17 2015 02:09 PM', 'No'),
```

```
(8, '5225', 'September 22,2015 8:05AM', 'No'),
```

```
(9, '5532', 'September 22,2015 8:15AM', 'No');
```

--

-- Table structure for table `driver`

--

```
CREATE TABLE IF NOT EXISTS `driver` (
```

```
  `driverid` int(11) NOT NULL AUTO_INCREMENT,
```

```
  `firstname` varchar(100) NOT NULL,
```

```
  `lastname` varchar(100) NOT NULL,
```

```
  `contact_number` varchar(100) NOT NULL,
```

```
  `date_added` varchar(100) NOT NULL,
```

```
  `driver_travel` varchar(100) NOT NULL,
```

```
  PRIMARY KEY (`driverid`)
```

```
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=11 ;
```

--

-- Dumping data for table `driver`

--

```
INSERT INTO `driver` (`driverid`, `firstname`, `lastname`, `contact_number`, `date_added`,  
`driver_travel`) VALUES
```

```
(1, 'guru', 'ratan', '09226628436', 'Sep 15 2015 04:44 PM', 'No'),  
(2, 'Sahil', 'Chopra', '09102837465', 'Sep 15 2015 04:45 PM', 'Yes'),  
(3, 'Rahul', 'Raj', '09101635443', 'Sep 15 2015 04:57 PM', 'Yes'),  
(4, 'Ramit', 'krishna', '09277407245', 'Sep 16 2015 05:53 PM', 'No'),  
(5, 'Aman', 'sai', '092476544382', 'September 22,2015 7:51AM', 'No'),  
(6, 'Bholu', 'raz', '09193547273', 'Sep 22 2015 07:55 AM', 'No'),  
(7, 'Rounak', 'Gupta', '09248788675', 'Sep 22 2015 07:56 AM', 'No'),
```

```
--
```

```
-- Table structure for table `schedule`
```

```
--
```

```
CREATE TABLE IF NOT EXISTS `schedule` (  
  `scheduleid` int(11) NOT NULL AUTO_INCREMENT,  
  `cabid` varchar(100) NOT NULL,  
  `driverid` varchar(100) NOT NULL,  
  `from_location` varchar(100) NOT NULL,  
  `destination_location` varchar(100) NOT NULL,  
  `departure_time` datetime NOT NULL,  
  `arrival_time` datetime NOT NULL,  
  `terminal_location` varchar(100) NOT NULL,  
  `status` varchar(100) NOT NULL,  
  `status_operation` varchar(100) NOT NULL,  
  `arrived_at_destination` varchar(100) NOT NULL,  
  `date_added` datetime NOT NULL,  
  PRIMARY KEY (`scheduleid`)  
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=6 ;
```

```
--
```

-- Dumping data for table `schedule`

--

```
INSERT INTO `schedule` (`scheduleid`, `cabid`, `driverid`, `from_location`, `destination_location`,  
`departure_time`, `arrival_time`, `terminal_location`, `status`, `status_operation`,  
`arrived_at_destination`, `date_added`) VALUES
```

```
(1, '3', '1', 'allmart', 'SJT', '2015-10-06 15:39:38', '2015-10-06 15:42:11', 'hostel', 'Arrived at hostel',  
'Arrived', 'YES', '2015-10-06 15:39:38'),
```

```
(2, '4', '2', 'allmart', 'hostel', '2015-10-06 15:39:43', '2015-10-06 15:40:53', 'allmart', 'Arrived at  
allmart', 'Arrived', 'YES', '2015-10-06 15:39:43'),
```

```
(3, '3', '1', 'SJT', 'allmart', '2015-10-06 15:50:53', '2015-10-06 16:26:18', 'SJT', 'Arrived at SJT',  
'Cancelled', 'YES', '2015-10-06 15:50:53'),
```

```
(4, '4', '2', 'hostel', 'allmart', '2015-10-06 16:02:59', '2017-05-02 04:00:00', 'Travel', 'Travel', 'On  
Travel', 'Not Yet', '2015-10-06 16:02:59'),
```

```
(5, '5', '3', 'hostel', 'SJT', '2015-10-06 16:24:40', '2016-06-04 03:00:00', 'Travel', 'Travel', 'On Travel',  
'Not Yet', '2015-10-06 16:24:40');
```

```
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
```

```
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
```

```
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
```

Conclusion

Thus, we see that the VIT transport vehicles can be successfully tracked using our proposed solution with the help of a simple GPS, GSM system on an android app. The location from any GPS module can be sent online with the help of GSM system using a microcontroller and its location can be seen on an android app. This system helps the students in knowing the location of cabs and buses and proves to be a great time saver. The same can also be used by the VIT management in keeping a track of the vehicles and also in monitoring the speed of the vehicles. Thus, with the help of a few components, a great number of purposes can be served.

REFERENCES:

1. <https://circuitdigest.com/microcontroller-projects/vehicle-tracking-system-using-arduino-gps-and-gsm>
2. <https://www.youtube.com/watch?v=9UEcT5GxdBk>
3. <https://www.youtube.com/watch?v=V5gGKQcddfw>
4. <https://www.projectsof8051.com/arduino-based-vehicle-tracking-system-using-gps-and-gsm/>
5. https://www.academia.edu/12234225/A_Major_Project_Report_On_VEHICLE_TRACKING_SYSTEM_USING_GPS_AND_GSM .Project Report included which you can use for your college project
6. <https://www.irjet.net/archives/V4/i3/IRJET-V4I3571.pdf>
7. <https://www.ijraset.com/files/serve.php?FID=6556>
8. https://www.ijircce.com/upload/2017/february/63_14_RFID.pdf