System-level-diagram

So in that Figure 1 describe the use case of parent and school administration .

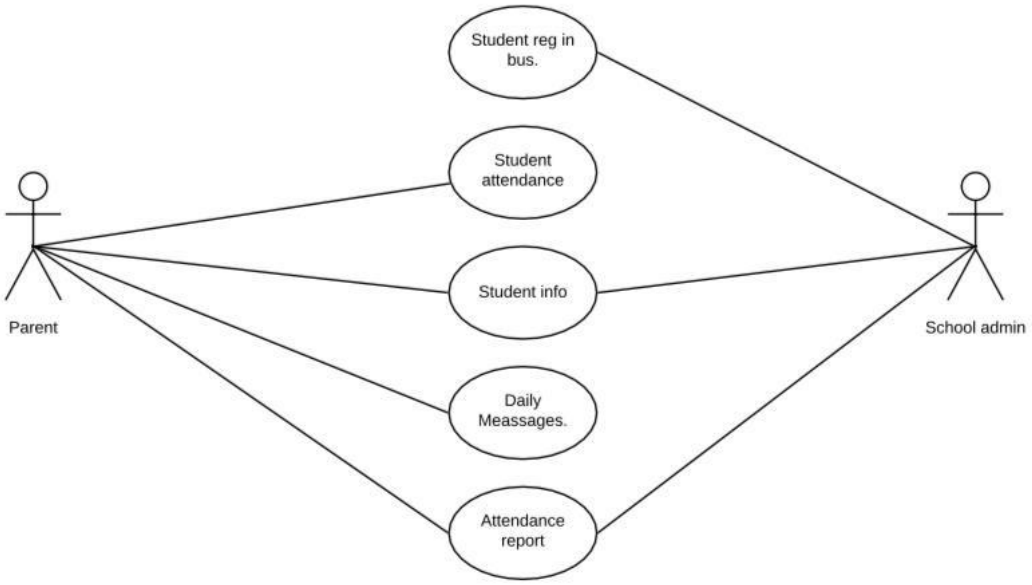

Figure 1 Use case interaction

Figure 2 describe the use case of bus driver and supervisor .

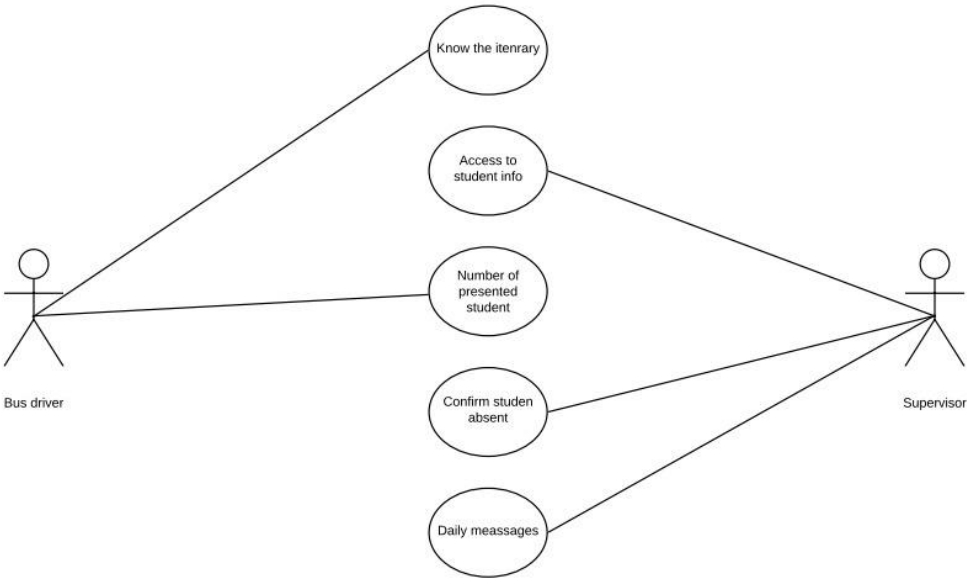

Figure 2 use case interaction

Class diagram

Figure 3 class diagram using MVC pattern describe smart school bus classes and functions.

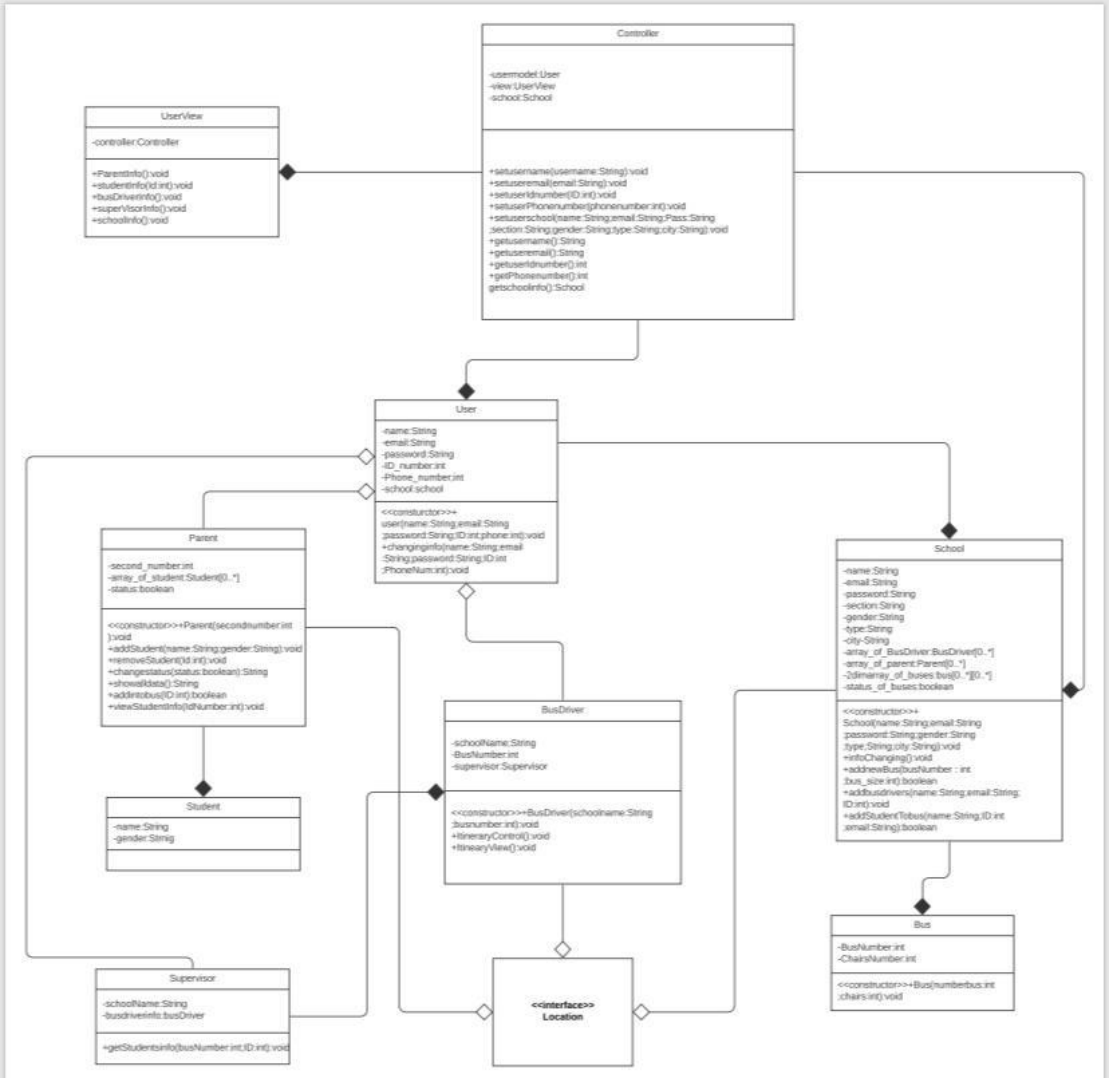

Figure 3 class diagram using MVC pattern.

School class

This class contains school and bus drivers and students information .

Class	School
Method	ChangingInfo
Visibility	Public
Return type	Void
Parameters:type	Name:String, email:String
description	School can change school name or school email

Class	School
Method	addnewBus
Visibility	Public
Return type	Boolean
Parameters:type	BusNumber:int , BusSize:int
description	In this method schools can adding buses for students

Class	School
Method	addStudentToBus
Visibility	Public
Return type	Boolean
Parameters:type	Name:String , ID:int , email:String
description	In this method will adding the students into schools bus

Supervisor class

The Supervisor contains of supervisor information and the access of Students information .

Class	SuperVisor
Method	getStudentInfo
Visibility	Public
Return type	Void
Parameters:type	busNumber:int , StudentID:int
description	in this method supervisor have access to Student info

Parent Class

The parent class is a user, that includes features and information for parent and student

Class	Parent
Method	addStudent
Visibility	public
Return type	void
Parameter, types	name:String , gender:String
Description	this method will add student to the parent

Class	Parent
Method	removeStudent
Visibility	public
Return type	void
Parameter, types	ID:int
Description	this method will delete a student from parent sons

Class	Parent
Method	addIntobus
Visibility	public
Return type	boolean
Parameter, types	IDnum:int
Description	this method will register the student in the bus

Class	Parent
Method	changeStatus
Visibility	public
Return type	String
Parameter, types	Status:Boolean
Description	This method will change the student status if he present or absent

Class	Parent
Method	showalldata
Visibility	public
Return type	void
Parameter, types	none
Description	this method will show data for school,supervisor,busDriver and bus number

Class	Parent
Method	viewStudentInfo
Visibility	public
Return type	void
Parameter, types	IDnum:int
Description	this method will allow the parent to see his student information

User Class

The user class have information for all users

Class	User
Method	changingInfo
Visibility	public
Return type	void
Parameter, types	name:String , email:String , password:String ,ID:int ,phoneNum:int , school:School
Description	this method will add student to the parent

User View Class

The user view class is like an interface of the application and have all the information of the users.

Class	User view
Method	parentInfo
Visibility	public
Return type	void
Parameter, types	none
Description	this method will show the parent information

Class	User view
Method	studentInfo
Visibility	public
Return type	void
Parameter, types	none
Description	

	this method will show the student information

Class	User view
Method	busDriverInfo
Visibility	public
Return type	void
Parameter, types	none
Description	this method will show the bus driver information

Class	User view
Method	superVisorInfo
Visibility	public
Return type	void
Parameter, types	none
Description	this method will show the super visor information

Class	User view
Method	schoolInfo
Visibility	public
Return type	void
Parameter, types	none
Description	this method will show the school information

controller class

this controller class attach user class to view class

Class	Controller
Method	Setusername
Visibility	Public
Return type	Void
Parameters, types	Username: string
description	This method set the user name

Class	Controller
Method	Setuseremail
Visibility	Public
Return type	Void
Parameters, types	Email: string
description	This method set the user email

Class	Controller
Method	setuserIdnumber
Visibility	public
Return type	void
Parameters, types	id: Int
description	this method set user id

Class	Controller
Method	Setuserphonenumber
Visibility	Public
Return type	Void
Parameters, types	Phonenumber; int
description	This method set user phone number

Class	Controller
Method	Setuserschool
Visibility	Public
Return type	Void
Parameters, types	Name: String; email: String; pass: String; section: string;
description	Gender: String; type: String; city: string
	This method set user school

Class	Controller
Method	getuserName
Visibility	public
Return type	string
Parameters, types	()
description	This method show the user name

Class	Controller
Method	getuseremail
Visibility	public
Return type	string
Parameters, types	()
description	this method show the user email

Class	Controller
Method	getuseridnumber
Visibility	public
Return type	int
Parameters, types	()
description	This method show the user id

Class	Controller
Method	getphonenumber
Visibility	public
Return type	int
Parameters, types	()
description	This method show the user phone number

Class	Controller
Method	getschoolinfo
Visibility	public
Return type	school
Parameters, types	()
description	This method show the school information

Bus driver

The bus driver class contain information for bus driver and can control itinerary

Class	Busdriver
Method	Itinerarycontrol
Visibility	Public
Return type	Void
Parameters, types	()
description	This method bus driver can control itinerary students location

Class	Busdriver
Method	Itineraryviwe
Visibility	Public
Return type	Void
Parameters, types	()
description	This method show the students home location

System Behavior Diagram

we describe behavior diagram by using activity diagram and state diagram.

Figure 4 describe the activity diagram of smart school bus , if the parent sing up

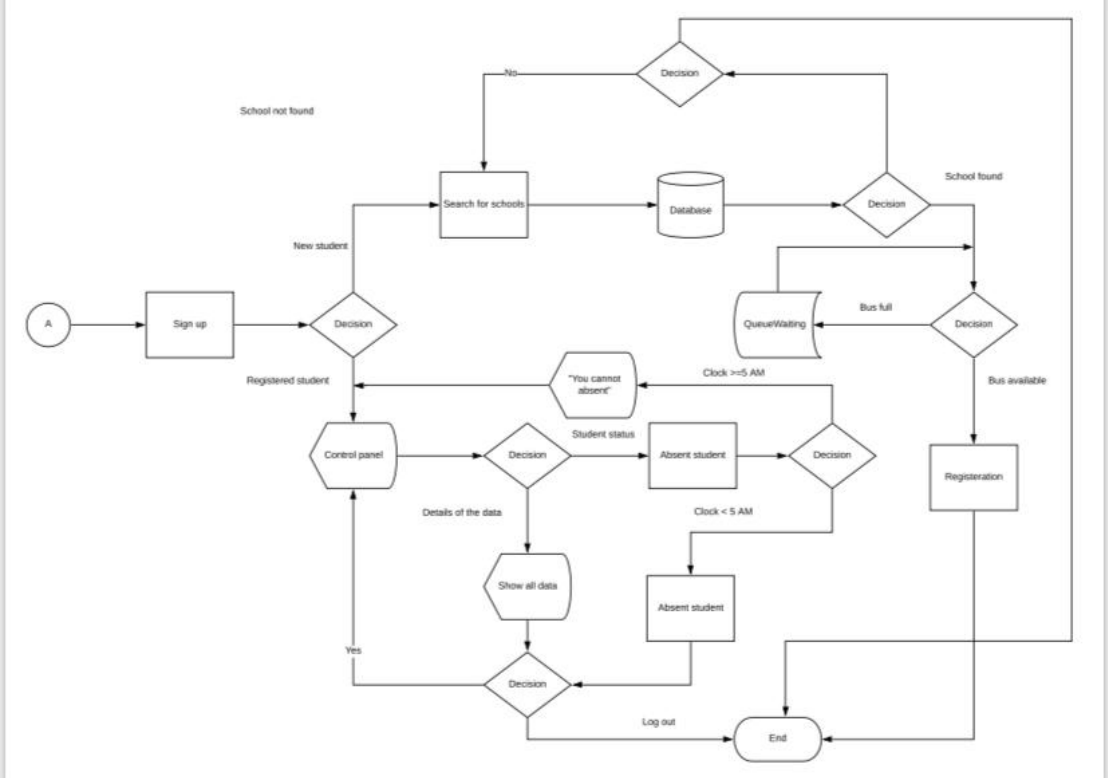

Figure 4 . activity diagram

Figure 5 describe state diagram of smart school bus

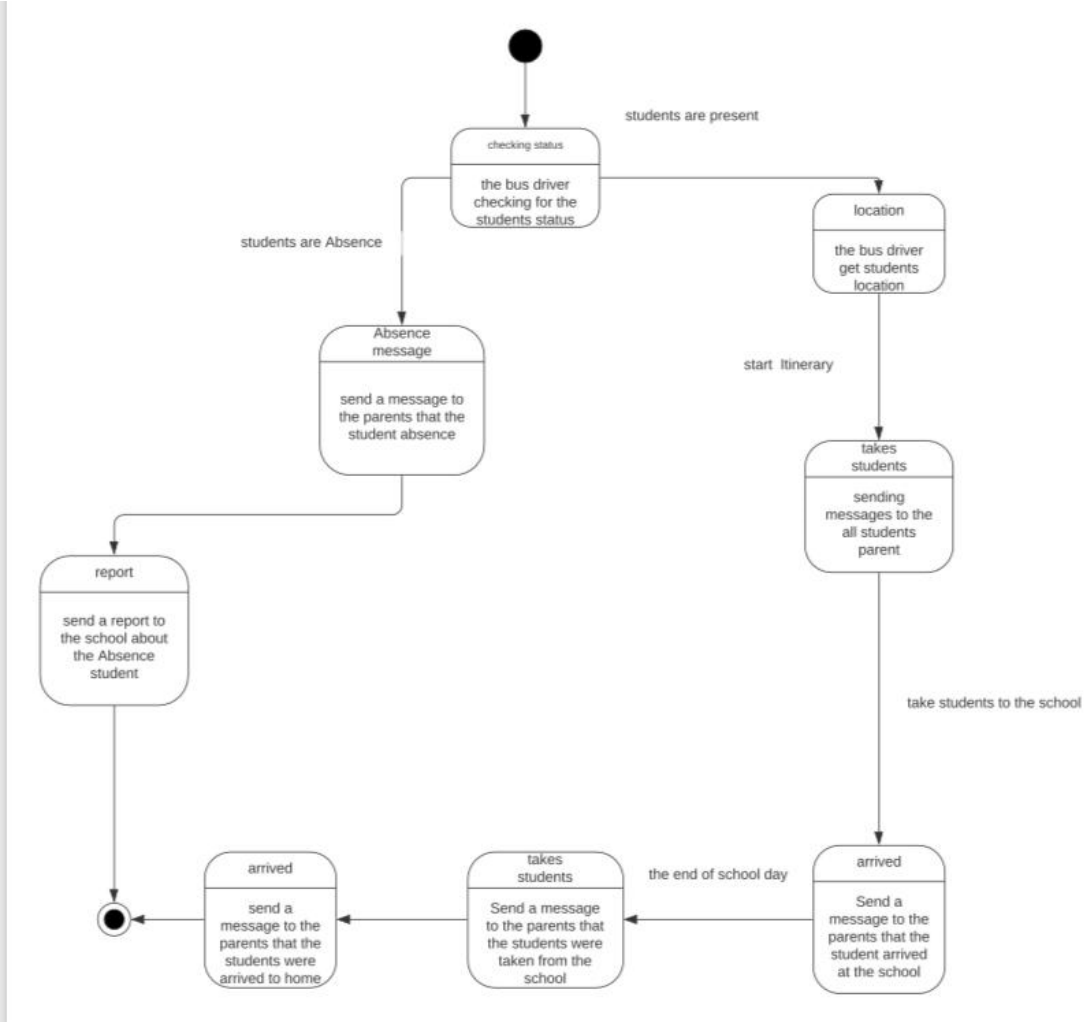

Figure 5 State diagram