



Daffodil International University
Department of Software Engineering, FSIT
SWE-413 Project/thesis
Project Documentation
Road Accident Statistics System

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APPROVAL

This **Project/Thesis** titled “**Road Accident Statistics System**”, submitted by **Md. Shafiul Islam, ID: 161-35-1567** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc in Software Engineering and approved as to its style and contents.

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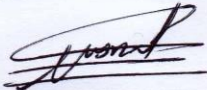
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Declaration

I declare that the project report '**Road accident statistic system**' is based on my own work carried out during the course of my study under the supervisor of Ms. Nusrat Jahan, Senior Lecturer, Department of Software Engineering, Daffodil International University. I also declare that the work contained in the report is original and has been done by me under the supervisor. I further confirm that the work has not been submitted to any other institution for any other degree/diploma certificate in this university of Bangladesh or abroad. I have followed the guidelines provided by the university in writing this report.

Supervised by:



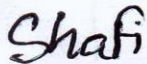
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I also acknowledge the contribution of my teachers for their valuable comments and timely support during my project work.

I duly acknowledge the constant support and encouragement of my parents.

Executive Summery

The main purpose of this project was to build a web application for road accidents. This system can be used locally or globally. Using JavaScript, node js, express js, ejs, mongoDB to build up this project. The programming tools ware visual studio code editor and MongoDB for the database. This system aimed to generate charts for road accidents and can view location accident in Google map. It allows admin to log in to the system for manage this system. Admin can update road accidents data in chart day by day. It allows user to log in to the system for submit information about road accidents. This system also allows user to vote into the poll.

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Chapter 1: Introduction

1.1 Project Overview

Nowadays most important topic in Bangladesh is road accidents. People in Bangladesh are now affected by road accidents every day. Highway buses are always busy with a road accident and people are so scared. People talk much about road accident statistics in social media but there is no actual web system in Bangladesh to represent the road accident statistical analysis. This road accident statistics system is going to represent the highway road accident data with generating the chart. In this version, this system only works with the highway. Road accident statistics system now works with three highway in Bangladesh they are Dhaka Aricha highway, Dhaka Cox's bazar highway, and Dhaka Sylhet highway but in the near future, this system will work with all the highway in Bangladesh. With these three highway accidental information, we are going to generate three charts for each highway. These three charts mainly work as a number of accidents with month, a number of accidents with bus names and a number of accidents with location accidents. This system also works with Google Maps. In Google map, it represents a number of accidents in a location. Two types of markers represent the Google map if the number of accidents greater than 50 then the info marker will be shown and if the number of accidents less than 50 then the default marker will be shown. There is a poll system in this system. Polls are always related to road accidents in Bangladesh. Anyone can vote in the poll. Poll results can be viewed by everyone. This system collecting accidental information from the user. This system can help Bangladeshi people by giving accidental information to make sense of road accidents.

1.2 Project Purpose

1.2.1 Background

Road accident statistics system mainly works with Bangladesh highway road accidental data. This system now work with three highway like Dhaka Aricha highway, Dhaka Sylhet highway, and Dhaka Cox's Bazar highway. This system generates three charts for each highway

1.2.2 Benefits and Beneficiaries

- This system collects highway accidental data and gives a general knowledge for highway road accident
- This is a web-based system so anyone can find accidental information from anywhere
- This system also helps people to find out which buses accident most in highway
- This system collects information from users so that they always act in road accidents this can help to reduce road accidents.
- This web-based system easy to access for all types of user
- From road accident statistics easy to find road accidental zone
- This system ensures high data security about user information
- This system can help to increase conscious about road accident by providing information
- By generating chart accidental information can be more useful

1.2.3 Goals

Every system developed based on goals. This system main requirements are generate chart for highway road accident. Helping people make conscious about road accident and keep active about road accident that can reduce road accident.

1.3 Stakeholders

- Admin
- User

1.4 Project Schedule

1.4.1 Gantt Chart

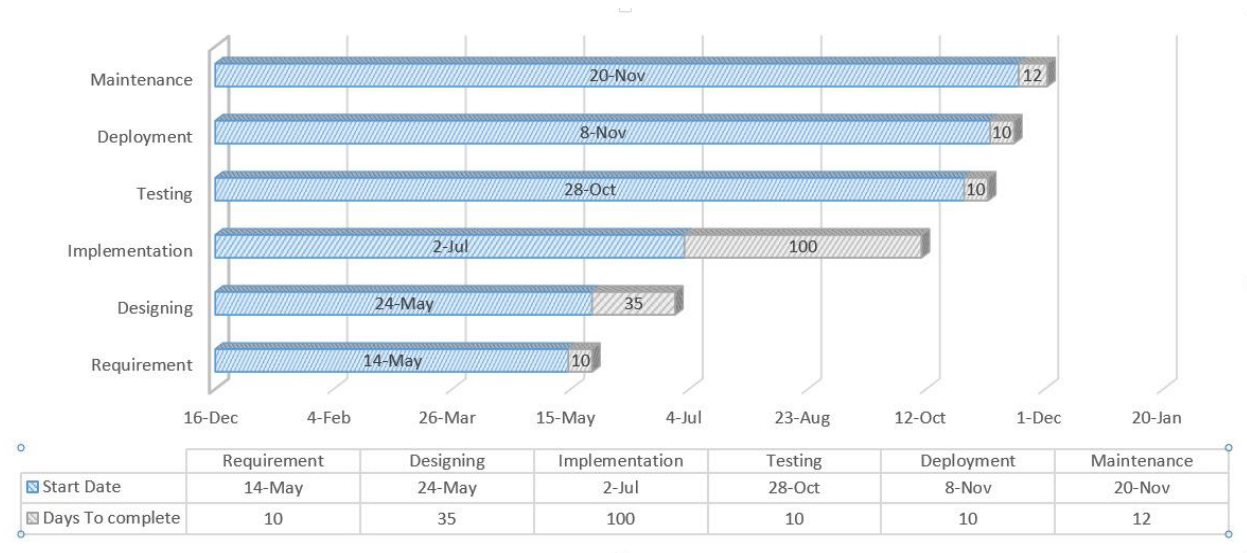


Figure 1.1: Gantt chart

1.4.2 Release Plan/Milestone

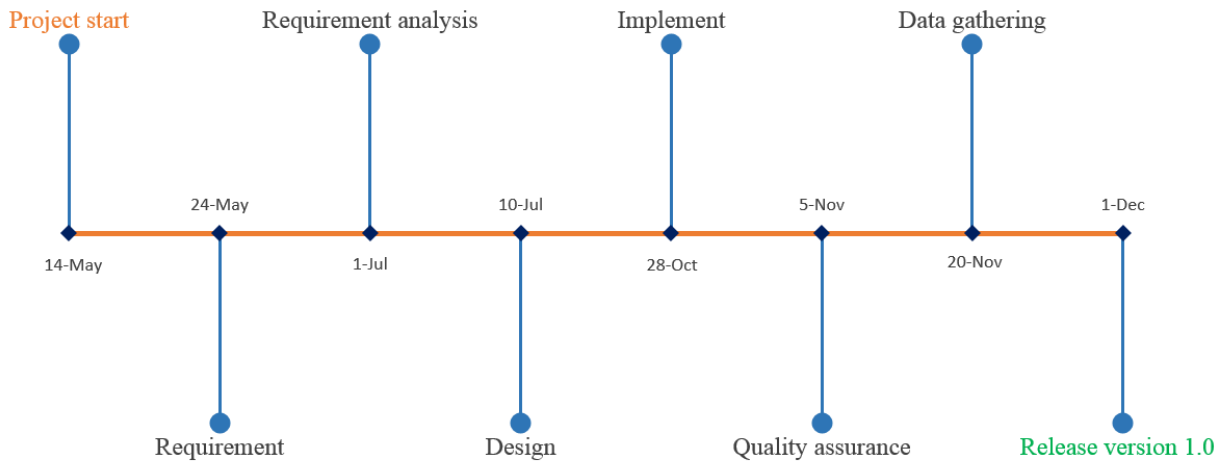


Figure 1.2: Release plan/milestone

Chapter 2: Software Requirement Specification

2.1 Functional Requirement

- Admin need to login first change anything into the system
- Admin can insert data into the chart
- Admin can update data into the chart
- Admin can add information to show in map
- Admin can view user submitted accidental information
- Admin can view a number of accidents with a location in the map
- Admin can create a poll
- Admin can vote into the poll
- Admin can delete a poll
- Admin can view a poll
- Admin can view chart
- User need to register first to login into the system
- User can submit road accidental information
- User can view chart information
- User can view map information
- User can view poll
- User can vote into the poll

2.2 Data Requirements

Our system maximum data would be loaded from user-submitted data so for this we need to focus some points like:

- Capacity and resources of data requirements
- Availability of data
- Quantity of data

2.3 Performance Requirements

To maintain the system performance requirements are much too important. Some points enhance our project performance.

2.3.1 Speed and latency requirements

Speed and latency are very important for software when users retrieve any data from the database. If system response quickly then the performance of the software goes high.

2.3.2 Precision and accuracy requirements

This is a system where all users must be a valid user. User-submitted information is also must be valid. Any wrong information can ruin our whole system.

2.3.3 Capacity Requirements

This system can handle thousands of data every month. This system also needs to have the capacity to handle so many users and give them proper security.

2.4 Dependability requirements

Dependability depends on four things like

- Availability
- Reliability
- Safety
- Security

2.4.1 Availability and Reliability requirements

- Our system is available all day long every day in a month.
- Our system is web-based so users can visit anywhere from any place

2.4.2 Safety requirements

This is a web based system so data cloud must be safe to make secure system.

2.5 Maintainability and Supportability Requirements

2.5.1 Maintainability Requirements

It is very important to update the security system by a sudden period.

2.5.2 Supportability Requirements

Supportability requirements related to

- Testability
- Extensibility
- Maintainability
- Configurability
- Serviceability

Our system meets all this supportability.

2.6 Security Requirements

Security is so much important for software. Admin and Users all type of data is sensitive so our system gives the full security to the users. Get access according to log in. The user password is encrypted.

2.7 Usability and Human-Interaction Requirements

- Our system is easy to use and easy to understand
- Only authorized users get full access to this system

2.8 Look and Feel Requirements

Look and feel requirements refer to how the user interface looks like to the user. Our admin and user know that all the input field is required. Input field might be text, email, password or text-area.

Chapter 3: System Analysis

3.1 Use case Diagram

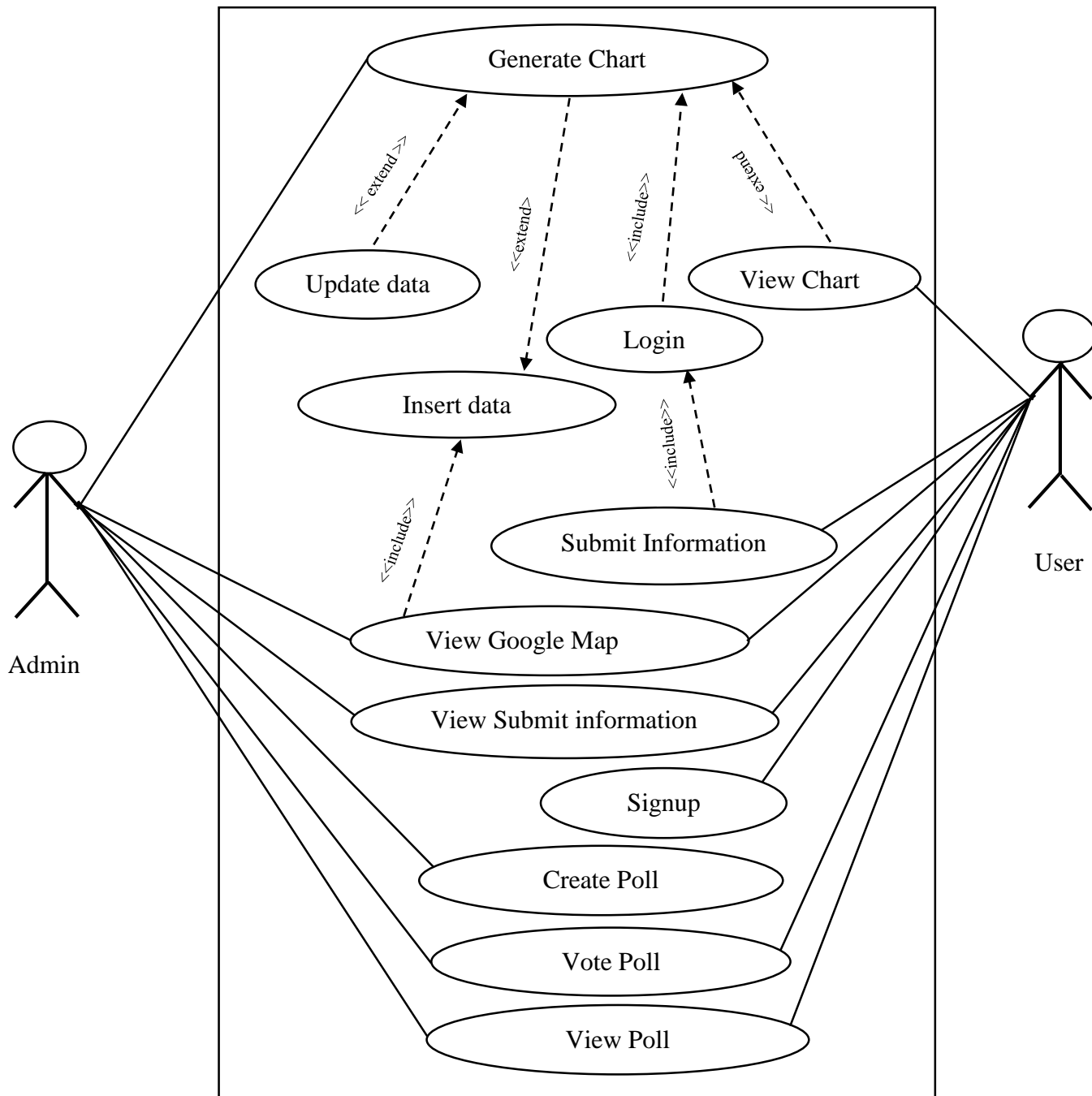


Figure 3.1: Use case diagram

3.1.1 Use case description

3.1.1.1 Generate Chart

Use case	Generate Chart	
Use case no	01	
Goal	Generate a chart for road accidents.	
Preconditions	1. Admin must be login into the system 2. Admin need to verify the data	
Primary actor	Admin	
Secondary actor	None	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Login into the system
	2	Select Insert option and submit the data
	3	Chart details will be appear
	4	Select Update option if the data is valid
	5	Select view option to see the chart
	6	Logout from the system
Post Condition	Every generated chart will be shown	
Alternative flow	Not applicable	
Quality requirements	User must be an admin of this system	

Table-3.1 Generate Chart

3.1.1.2 View chart

Use case	View Chart	
Use case no	02	
Goal	View road crashes charts	
Preconditions	1. Must be visited the view chart option	
Primary actor Secondary actor	Admin User	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Visit the Road accident statistics system home page
	2	Select chart option
	3	Select road name under the chart
	4	Chart details will be appear
Post Condition	Every chart can be view with their value	
Alternative flow	Not applicable	
Quality requirements	N/A	

Table-3.2 View chart

3.1.1.3 Insert data

Use case	Insert data	
Use case no	03	
Goal	Insert data for every chart	
Preconditions	1. Admin need to login into the system 2. Insert data is valid	
Primary actor Secondary actor	Admin None	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Admin login into the system
	2	Select insert chart option with the road name
	3	Select valid data
	4	Submit the data
	5	Data submitted successfully
Post Condition	System response with a successful message	
Alternative flow	Not applicable	
Quality requirements	User must be an admin of this system	

Table-3.3 Insert data

3.1.1.4 Update data

Use case	Update data	
Use case no	04	
Goal	Update data for every chart	
Preconditions	<ol style="list-style-type: none"> 1. Admin need to login into the system 2. Check to update valid data 	
Primary actor	Admin	
Secondary actor	None	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Admin login into the system
	2	Select update chart option with road name
	3	Select Update option against every chart
	4	Submit update option
5	Data submitted successfully	
Post Condition	System response with a successful message	
Alternative flow	Not applicable	
Quality requirements	User must an admin of this system	

Table-3.4 Update data

3.1.1.5 Login

Use case	Login	
Use case no	05	
Goal	Login into the system to change anything into the system	
Preconditions	<ol style="list-style-type: none"> 1. Must be registered 	
Primary actor	Admin	
Secondary actor	User	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Visit the Road accident statistics system home page
	2	Select login option
	3	Submit email and password
	4	System verify credentials
5	If yes, login successful	
Post Condition	System response with login successful	
Alternative flow	Not applicable	
Quality requirements	Password must be at least 6 characters	

Table-3.5 Login

3.1.1.6 Signup

Use case	Signup	
Use case no	06	
Goal	Become a new user of the system	
Preconditions	1. Must be new into the system	
Primary actor	None	
Secondary actor	User	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Visit the Road accident statistics system home page
	2	Select registration option
	3	Submit valid information with unique email and phone
	4	System verify information
	5	If yes, registration successful
Post Condition	System response with a registration successful message	
Alternative flow	Not applicable	
Quality requirements	Fill up all information with valid information	

Table-3.6 Signup

3.1.1.7 Submit information

Use case	Submit information	
Use case no	07	
Goal	Submit information about any highway road crashes	
Preconditions	1. Must be login into the system 2. Submit valid data	
Primary actor	None	
Secondary actor	User	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Visit the Road accident statistics system home page
	2	Select information option
	3	Submit valid information
	4	The submitted information can be viewed in the profile option.
Post Condition	System response with a successful message	
Alternative flow	Not applicable	
Quality requirements	Must be a valid user of this system	

Table-3.7 Submit information

3.1.1.8 Create Poll

Use case	Create Poll	
Use case no	08	
Goal	Create a new poll for a vote with a specifics subject	
Preconditions	1. Admin must be login into the system	
Primary actor	Admin	
Secondary actor	None	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Admin login into the system
	2	Select create poll option
	3	Select a specifics subject related to a road crash.
	4	Create vote option
	5	Submit the poll
Post Condition	The created poll will appear in view poll option	
Alternative flow	Not applicable	
Quality Requirements	User must be an admin of this system	

Table-3.8 Create Poll

3.1.1.9 Vote poll

Use case	Vote poll	
Use case no	09	
Goal	Vote into the poll from the poll list	
Preconditions	1. Must be a visit to a poll from the poll list	
Primary actor	Admin	
Secondary actor	User	
Trigger	Button	
Description/Main success scenario	Step	Action
	1	Visit the Road accident statistics system home page
	2	Select polls option
	3	Select a poll from polls list
	4	Select vote option
	5	Submit the vote
	6	Poll result will appear in the above poll
Post Condition	The poll result is shown in progress bar	
Alternative flow	Not applicable	
Quality requirements	N/A	

Table-3.9 Vote poll

3.1.1.10 View poll

Use case	View poll	
Use case no	10	
Goal	View poll with the poll result	
Preconditions	1. Must be a visit to a poll	
Primary actor	Admin	
Secondary actor	User	
Trigger	Button	
Description/Main success scenario	1	Visit the Road accident statistics system home page
	2	Select polls option
	3	Select a poll from polls list
	4	View poll with the poll result
	5	Poll result will appear in the above poll
Post Condition	Every poll can be the view from the poll list	
Alternative flow	Not applicable	
Quality requirements	N/A	

Table-3.10 View poll

3.1.1.11 View Google map

Use case	View Google map	
Use case no	11	
Goal	View Google map with the number of accidents of a location in the pop-up notification.	
Preconditions	1. Click on the marker in Google map	
Primary actor	Admin	
Secondary actor	User	
Trigger	Marker	
Description/Main success scenario	Step	Action
	1	Visit the Road crash statistics system home page
	2	Select view Google map
	3	Default marker for the number of accidents greater than 50 and info marker for the number of accidents less than 50
	4	Click on the marker
	5	Pop-up notification with the number of accidents of a location
	6	The marker will appear on road wise
Post Condition	Marker appear based on the number of accidents	
Alternative flow	Not applicable	
Quality requirements	N/A	

Table-3.11 View Google map

3.1.1.12 View submit information

Use case	View submit information	
Use case no	12	
Goal	View user submitted data	
Preconditions	1. Must be log in to the system	
Primary actor	Admin	
Secondary actor	User	
Trigger	Button	
Description/Main success scenario	1	Visit the Road accident statistics system home page
	2	Select login option
	3	After login, all the information will appear in dashboard
	4	Select view option
	5	User submitted data will appear
Post Condition	Every user-submitted data will appear in dashboard	
Alternative flow	Not applicable	
Quality requirements	User must be an admin of this system	

Table-3.12 View submit information

3.2 Activity Diagram

3.2.1 Generate Chart

After a successful login admin can generate a chart. From the admin dashboard, he/she can work with three parallel activity to generate a chart.

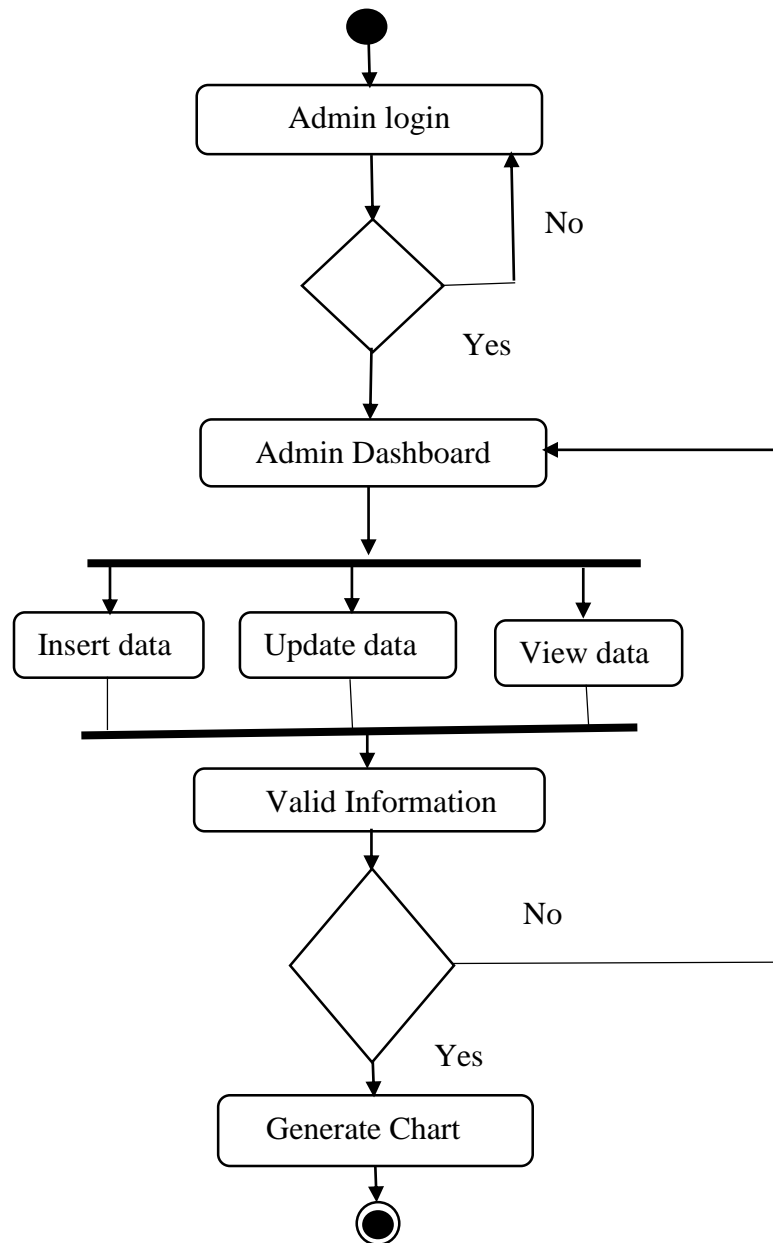


Figure 3.2: Generate chart

3.2.2 View Chart

All users can view the charts from the select chart option with highway road names.

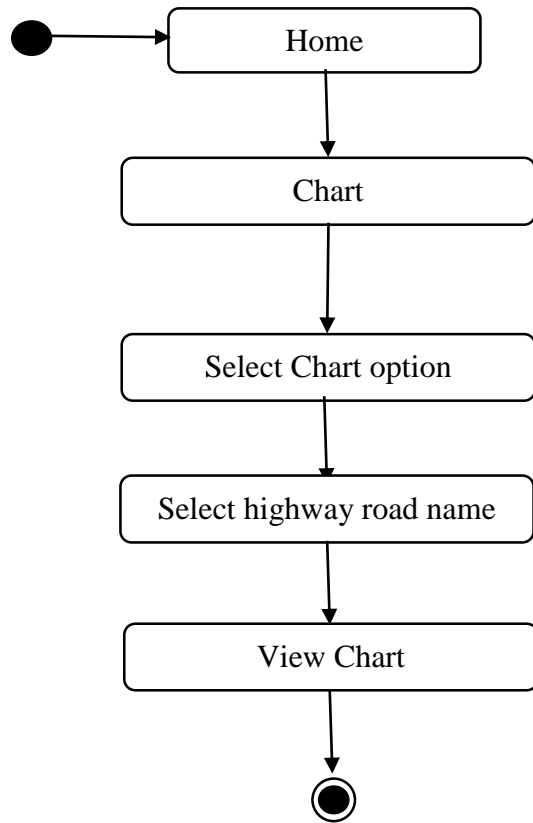


Figure 3.3: View chart

3.2.3 Insert data

After a successful login admin can select insert data activity. If the data is valid then data submit successfully.

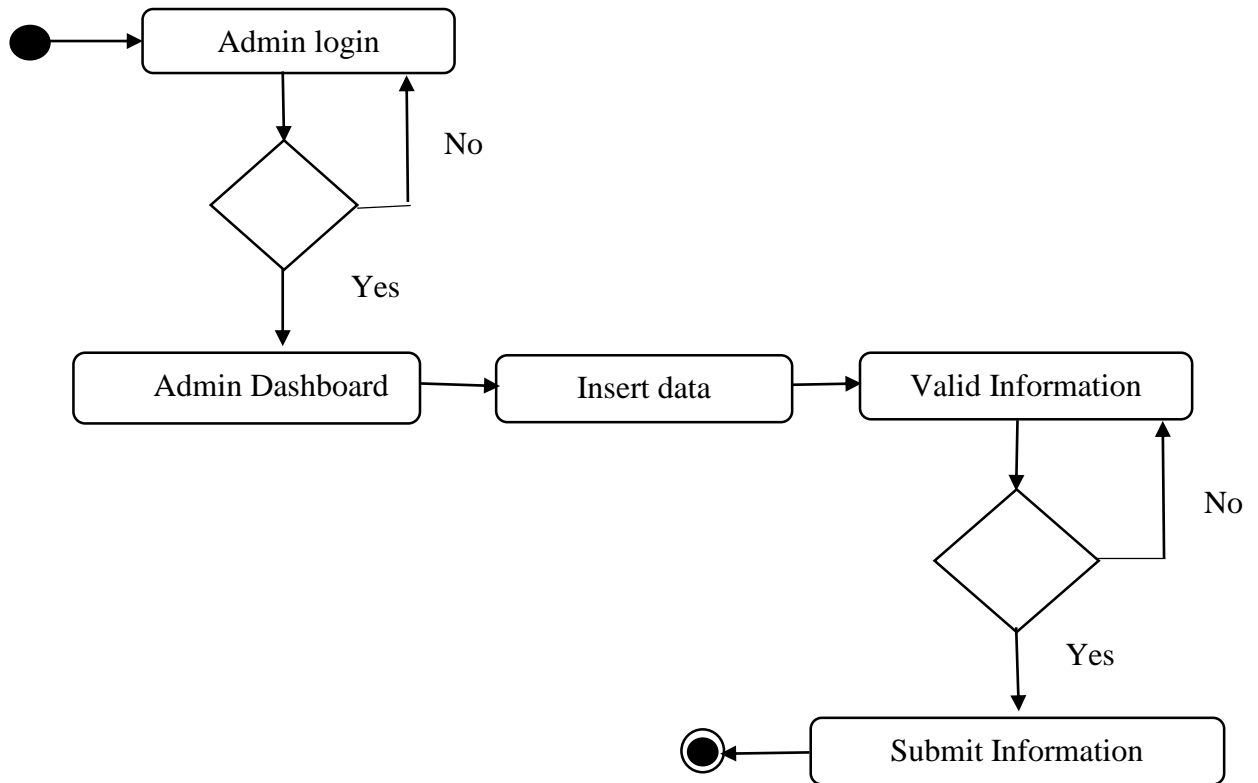


Figure 3.4: Insert data

3.2.4 Update data

After a successful login admin can select update data activity. Admin needs to update valid data.

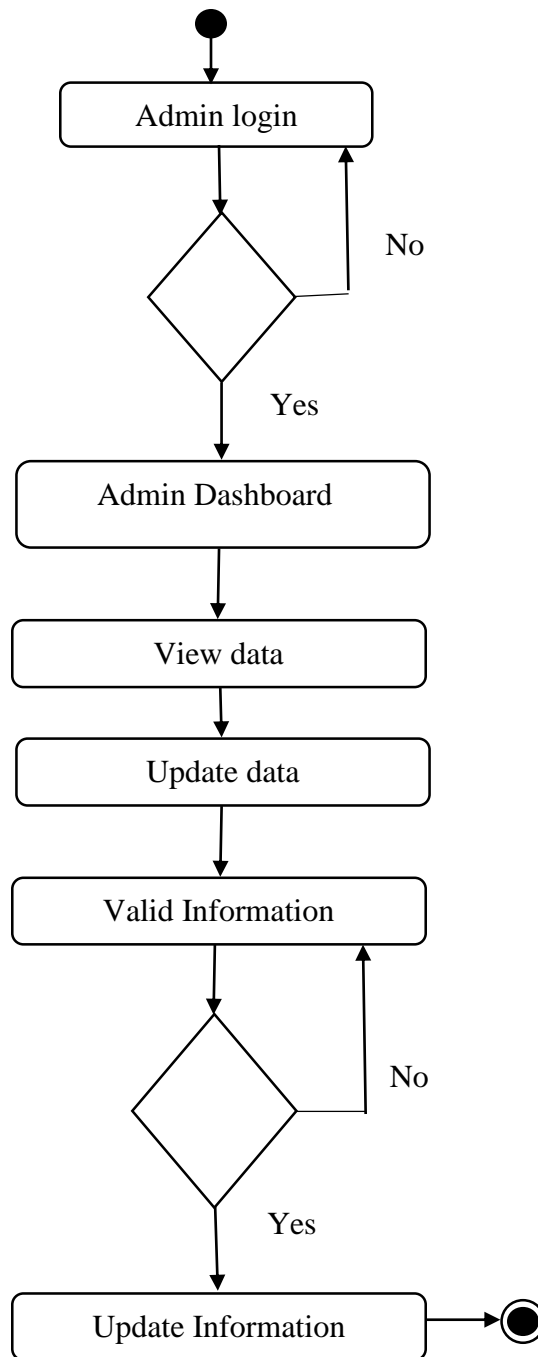


Figure 3.5: Update data

3.2.5 Login

After visiting the website user needs to select a login type then enter the email and password. If the data is valid then login successfully.

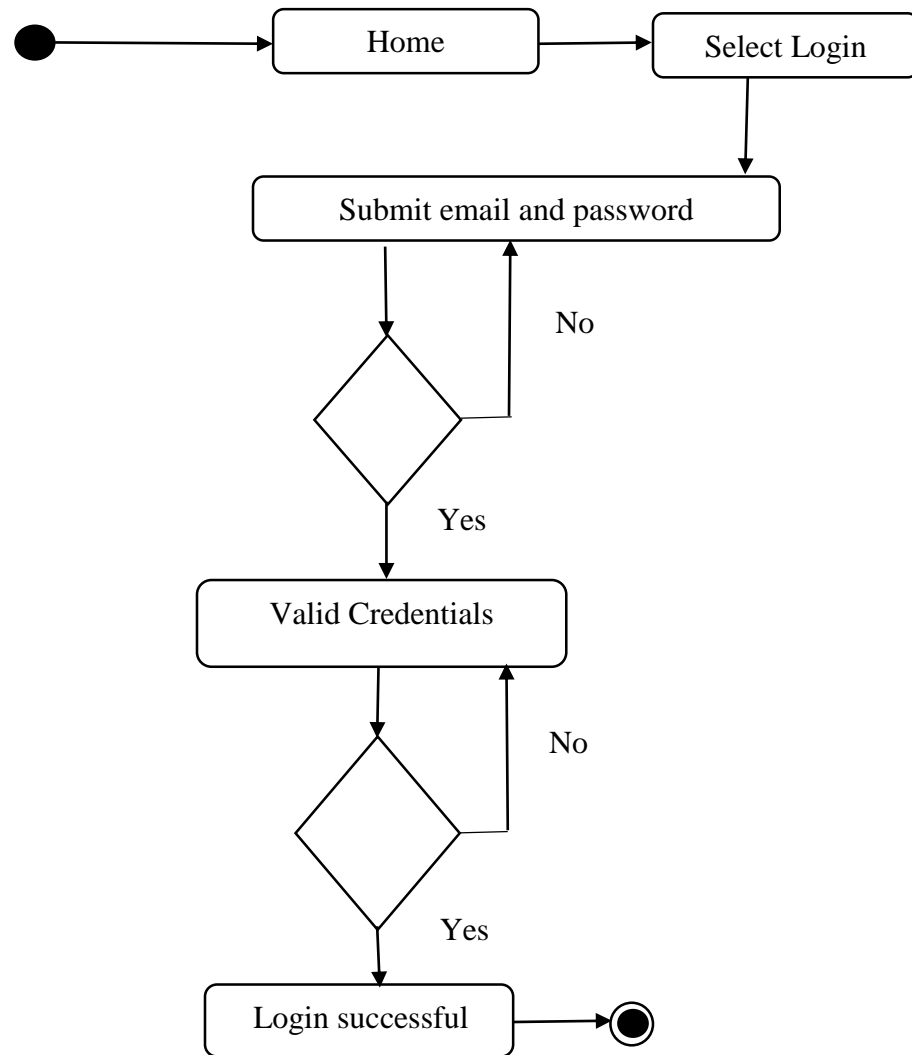


Figure 3.6: Login

3.2.6 Signup

After visiting the website new user needs to register first. Select registration activity then submits information. If the submitted information is valid registration successful with a successful message sent to the user email.

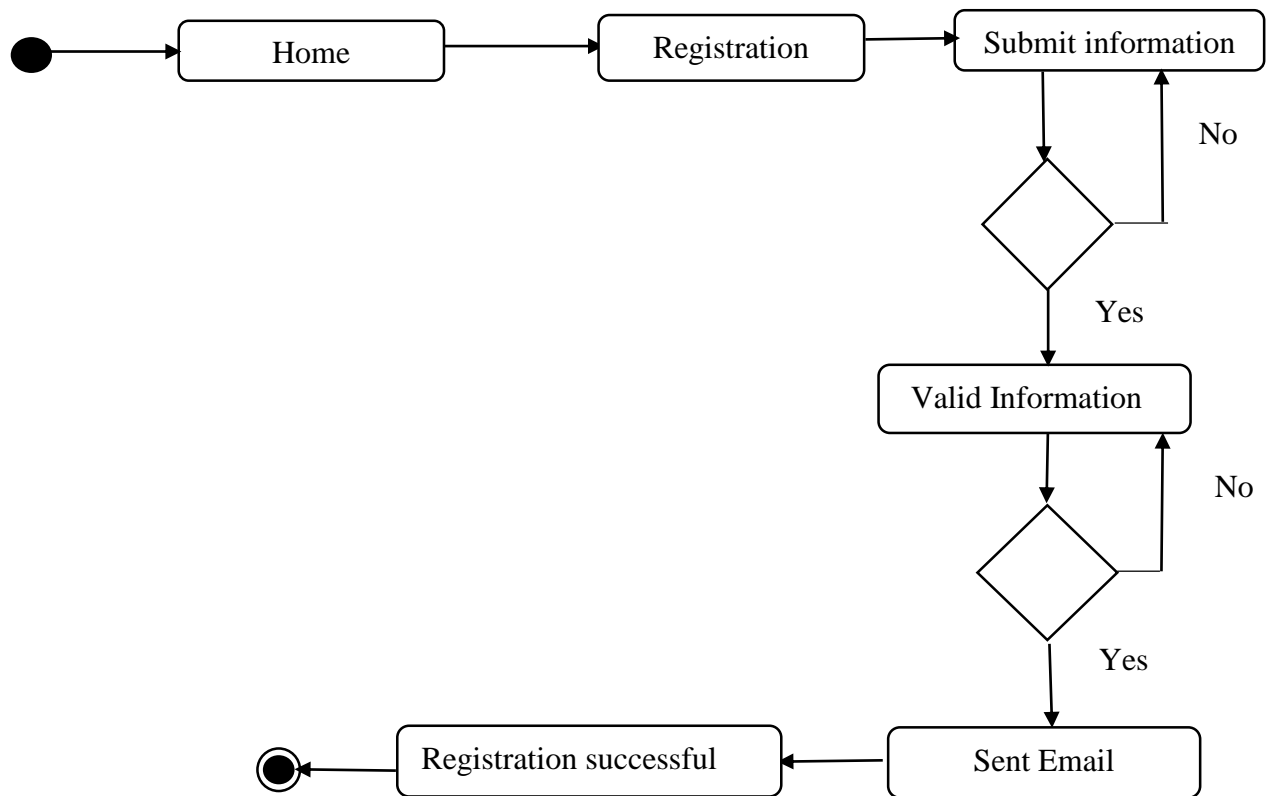


Figure 3.7: Signup

3.2.7 Submit Information

An only authorized users can submit information. After a successful login select information activity then submits only valid data.

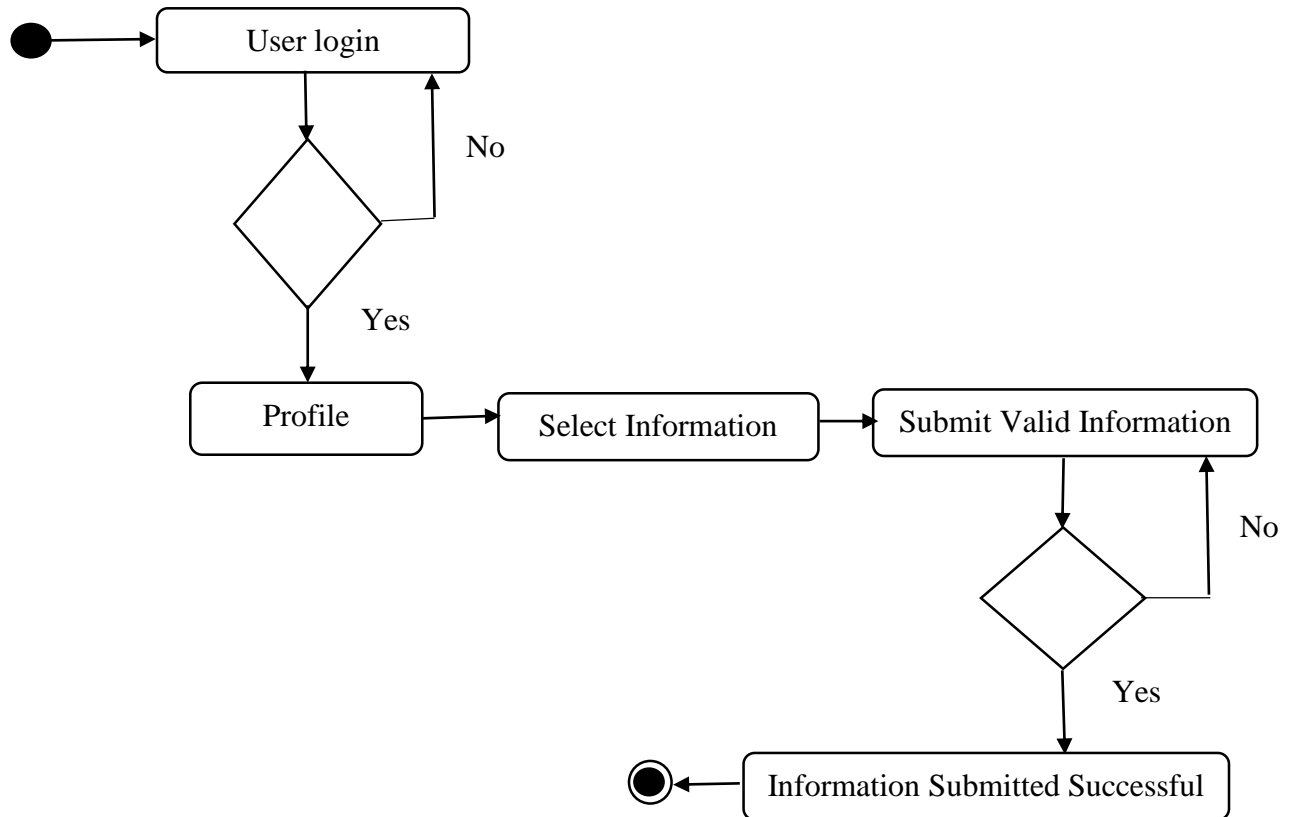


Figure 3.8: Submit information

3.2.8 Create poll

After a successful login admin needs to select create poll option then press submit. Poll creates successfully.

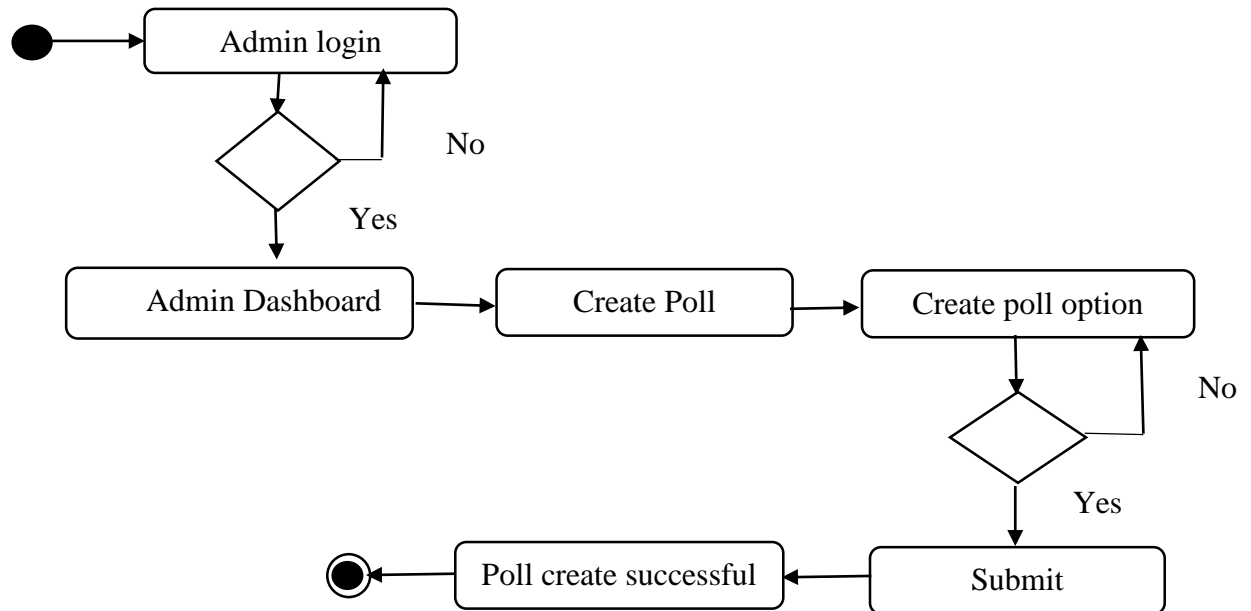


Figure 3.9: Create poll

3.2.9 Vote Poll

Select a poll from polls then select vote option then press submit button.

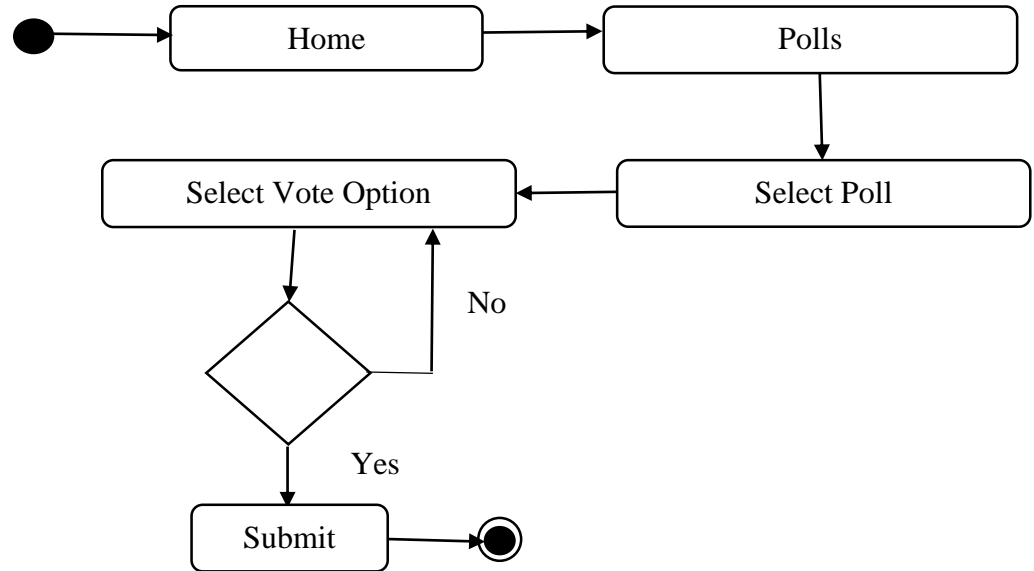


Figure 3.10: Vote poll

3.2.10 View Poll

Select a poll from polls. View the poll with the poll result

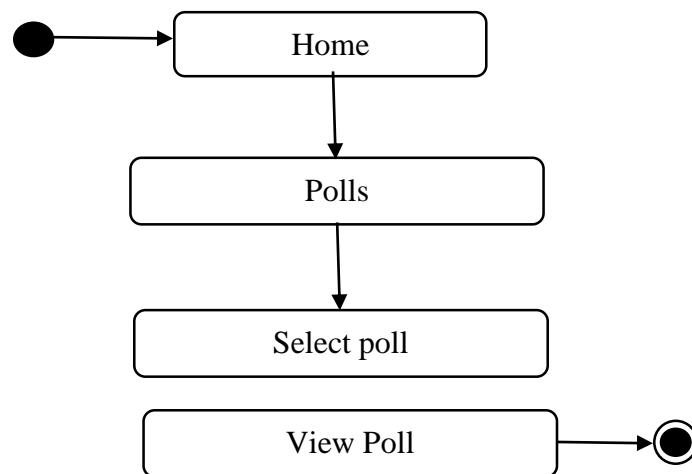


Figure 3.11: View poll

3.2.11 View Google map

After visiting the website select view map activity then click on the marker. The marker will pop-up with the notification as to the number of accidents with location names.

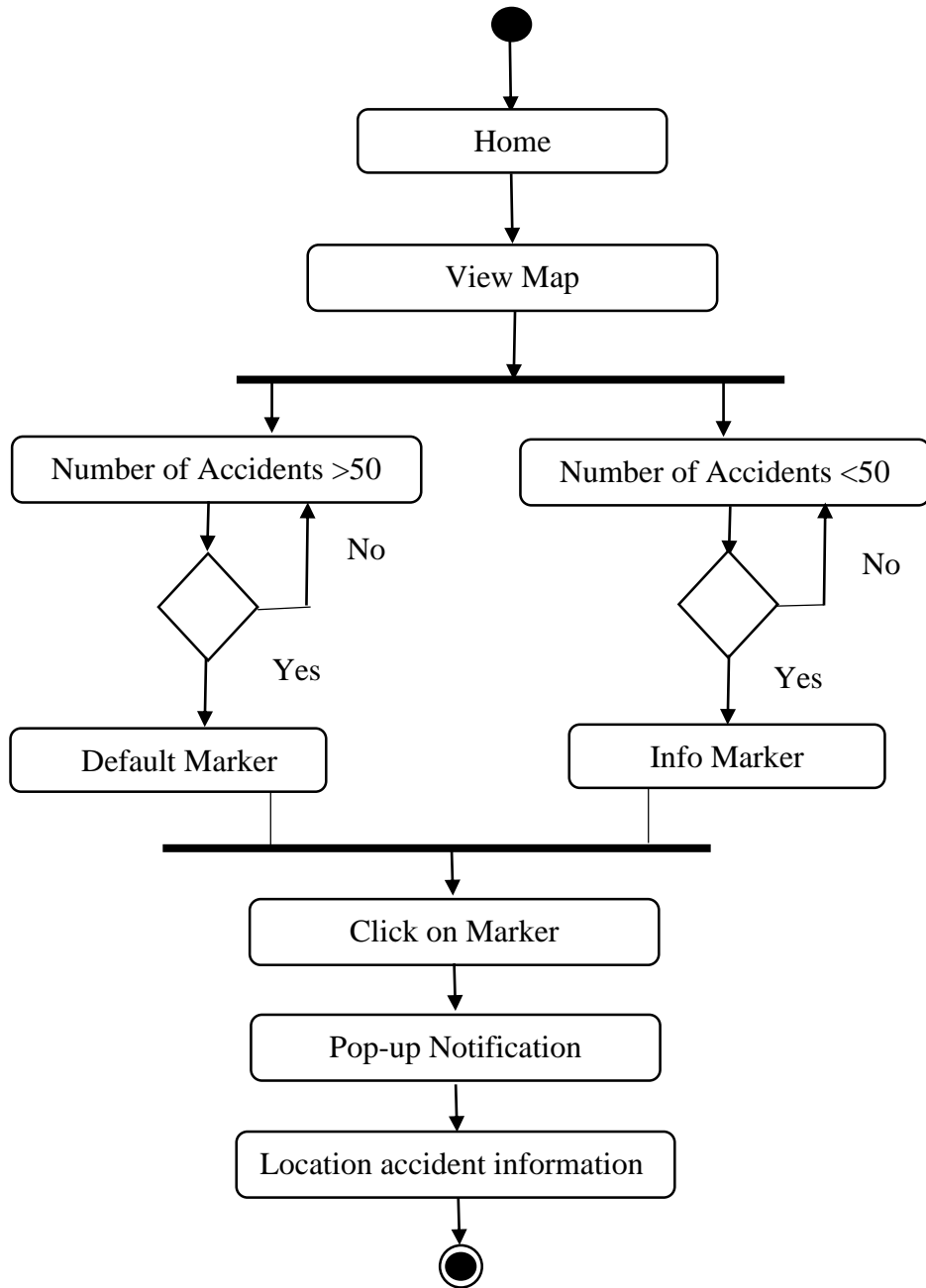


Figure 3.12: View Google map

3.2.12 View submit information

After a successful login admin can view user-submitted data. Admin needs to select view data option in the dashboard.

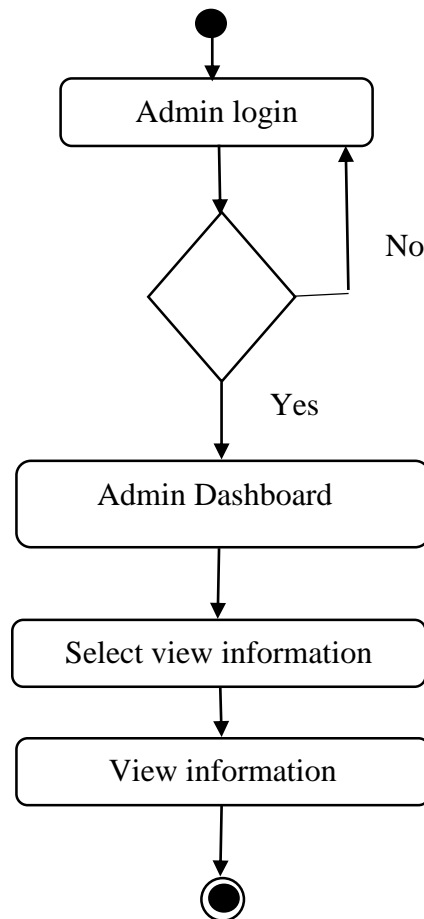


Figure 3.13: View submit information

3.3 Sequence Diagram

3.3.1 Generate Chart

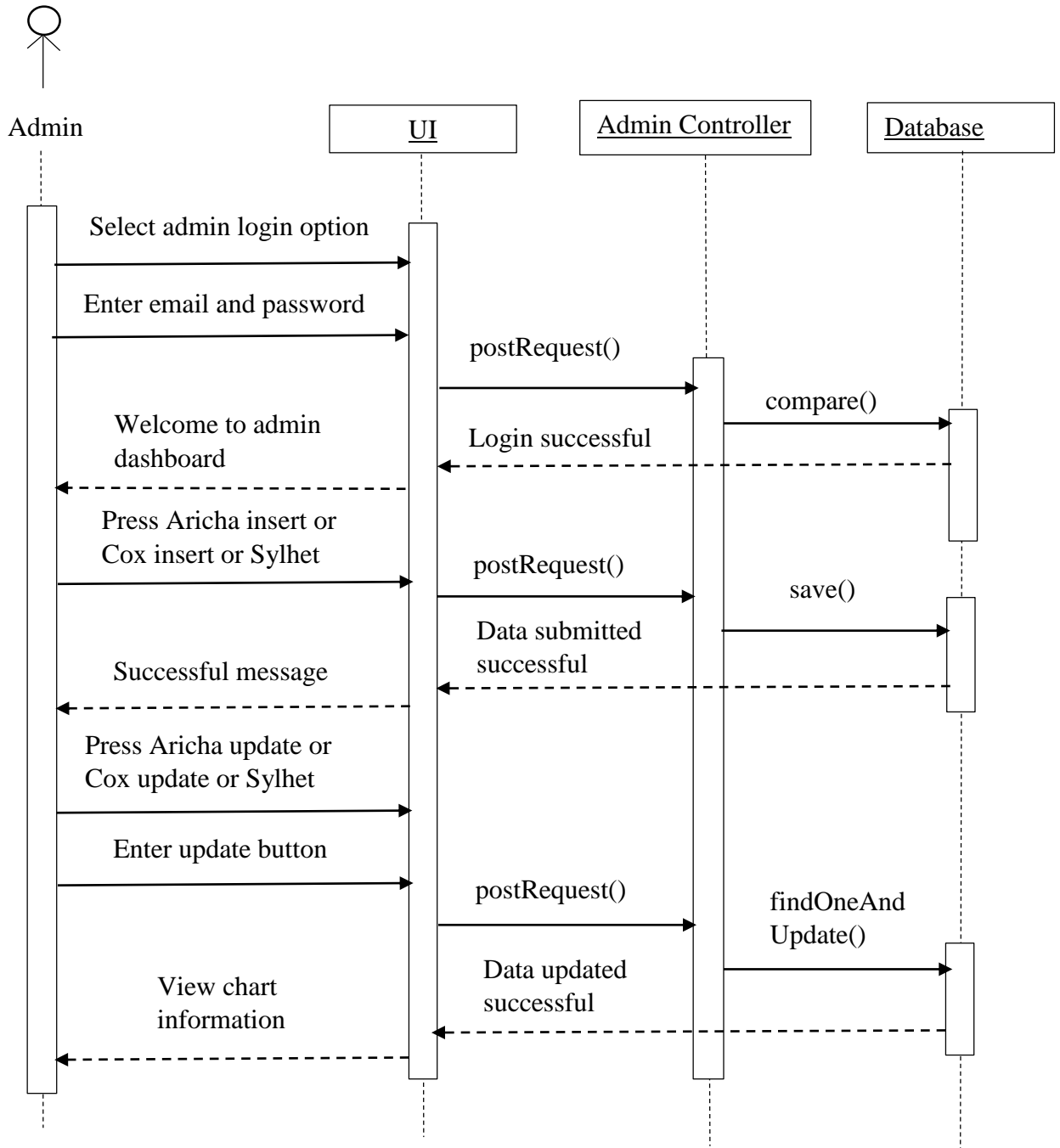


Figure 3.14: Generate chart

3.3.2 View Chart

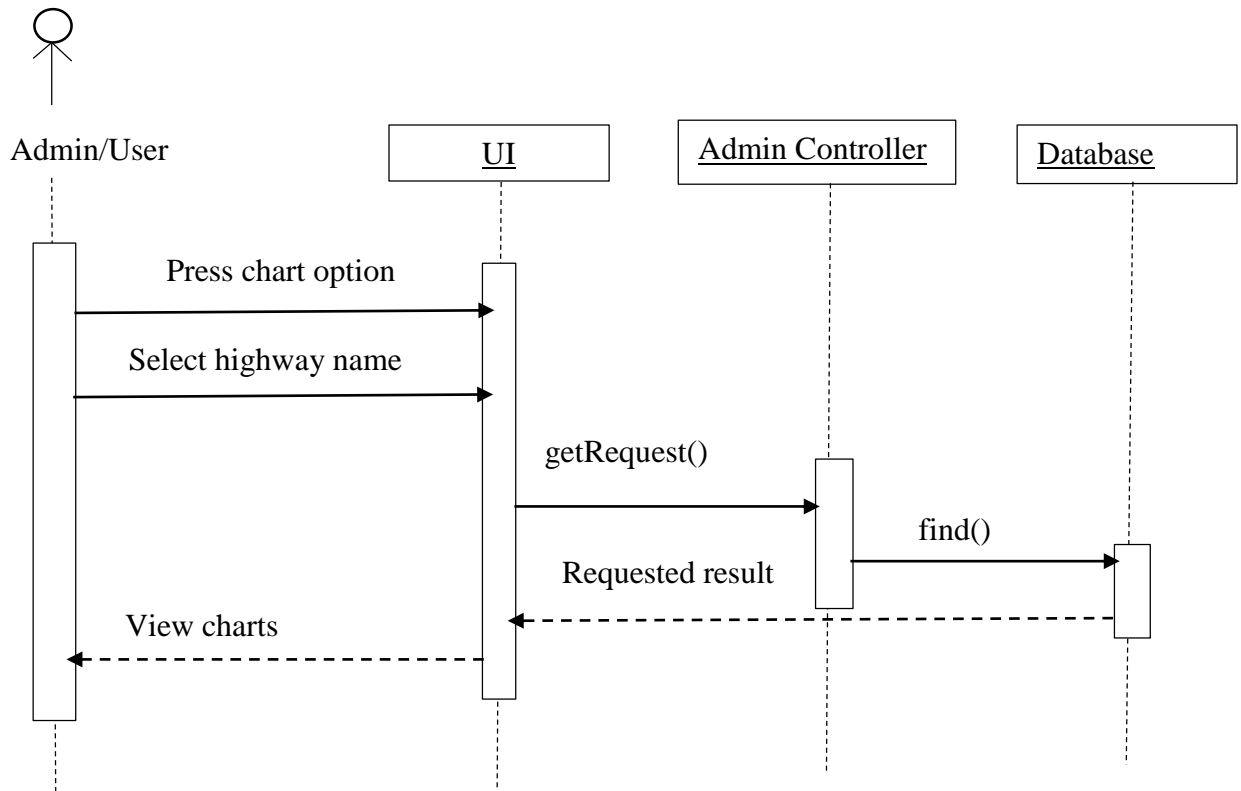


Figure 3.15: View chart

3.3.3 Insert data

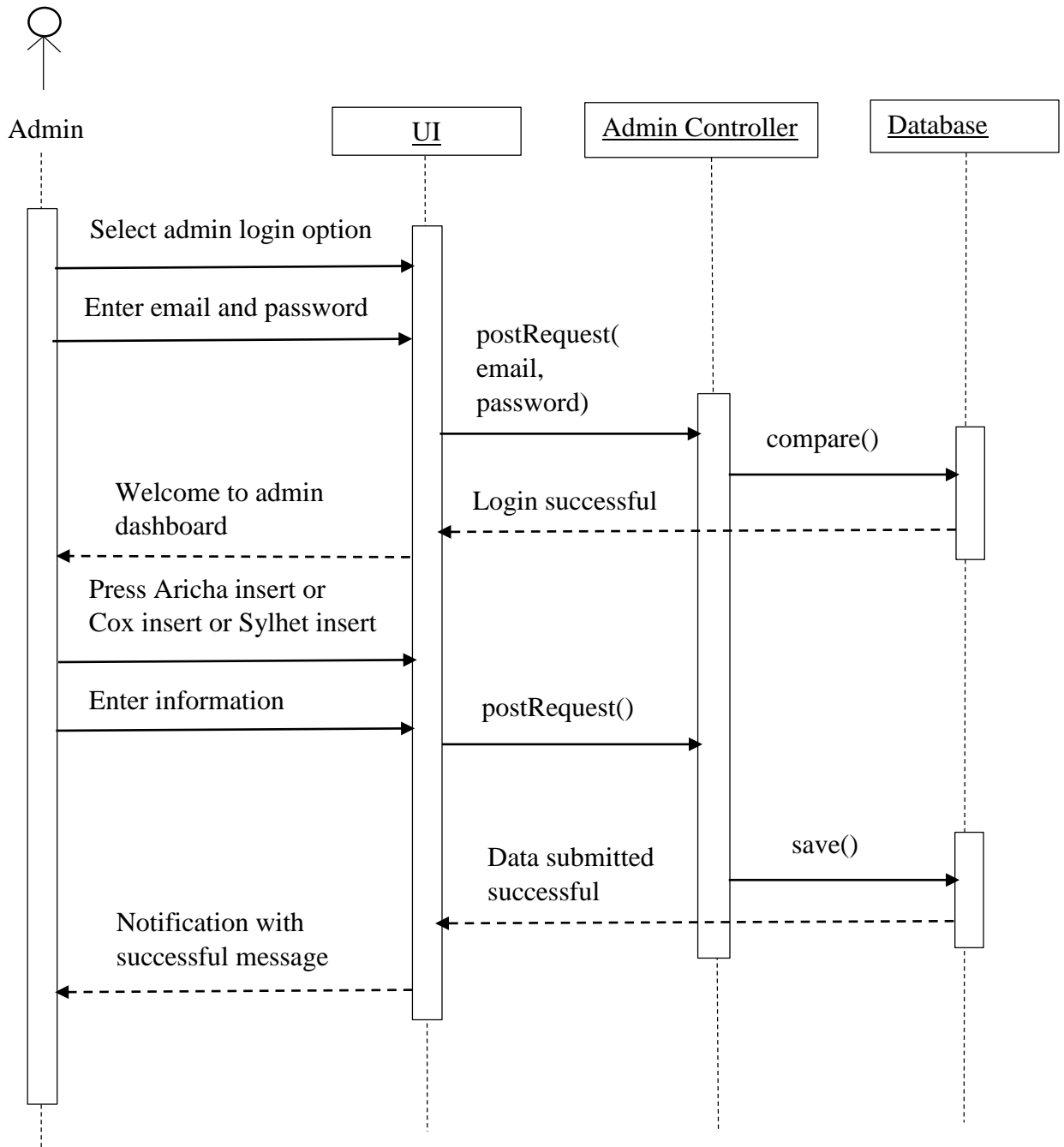


Figure 3.16: Insert data

3.3.4 Update data

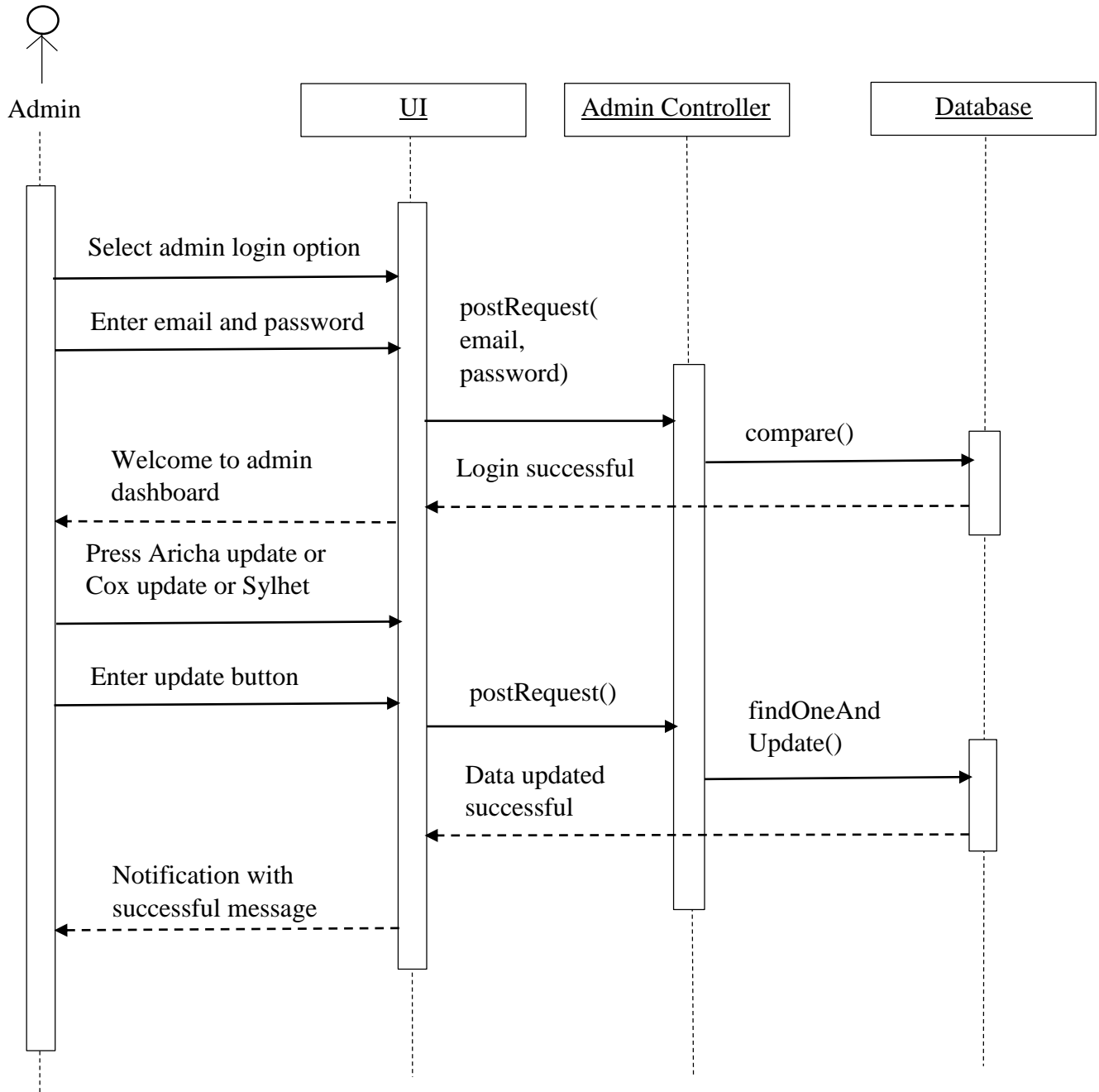


Figure 3.17: Update data

3.3.5 Login

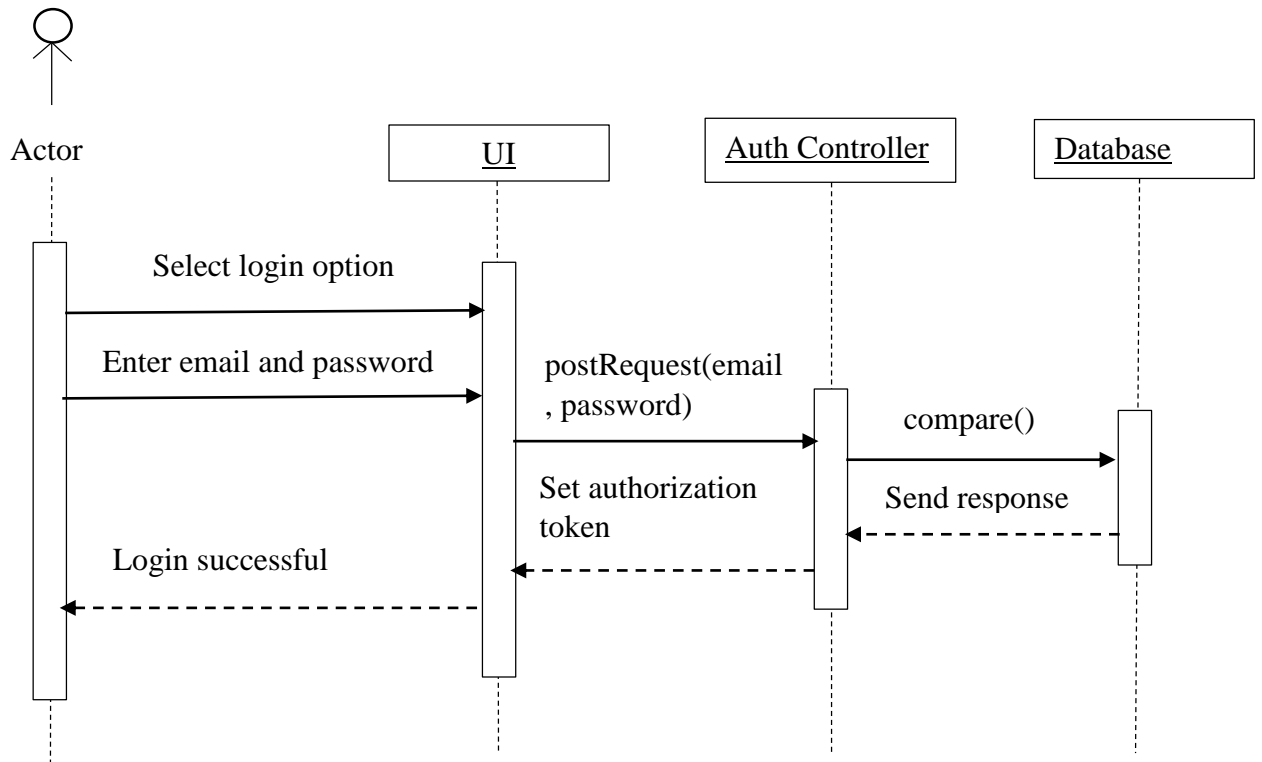


Figure 3.18: Login

3.3.6 Signup

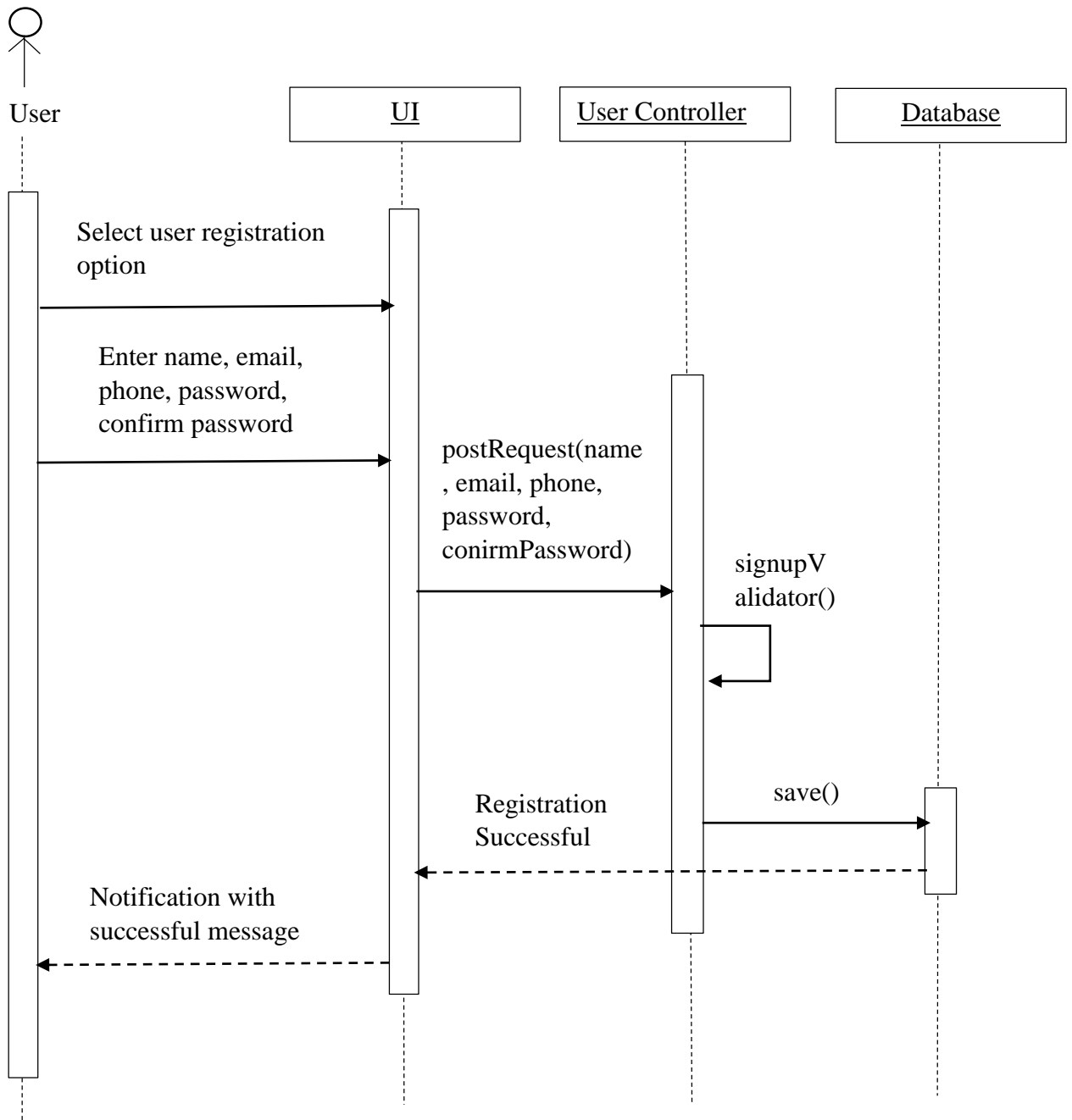


Figure 3.19: Signup

3.3.7 Submit Information

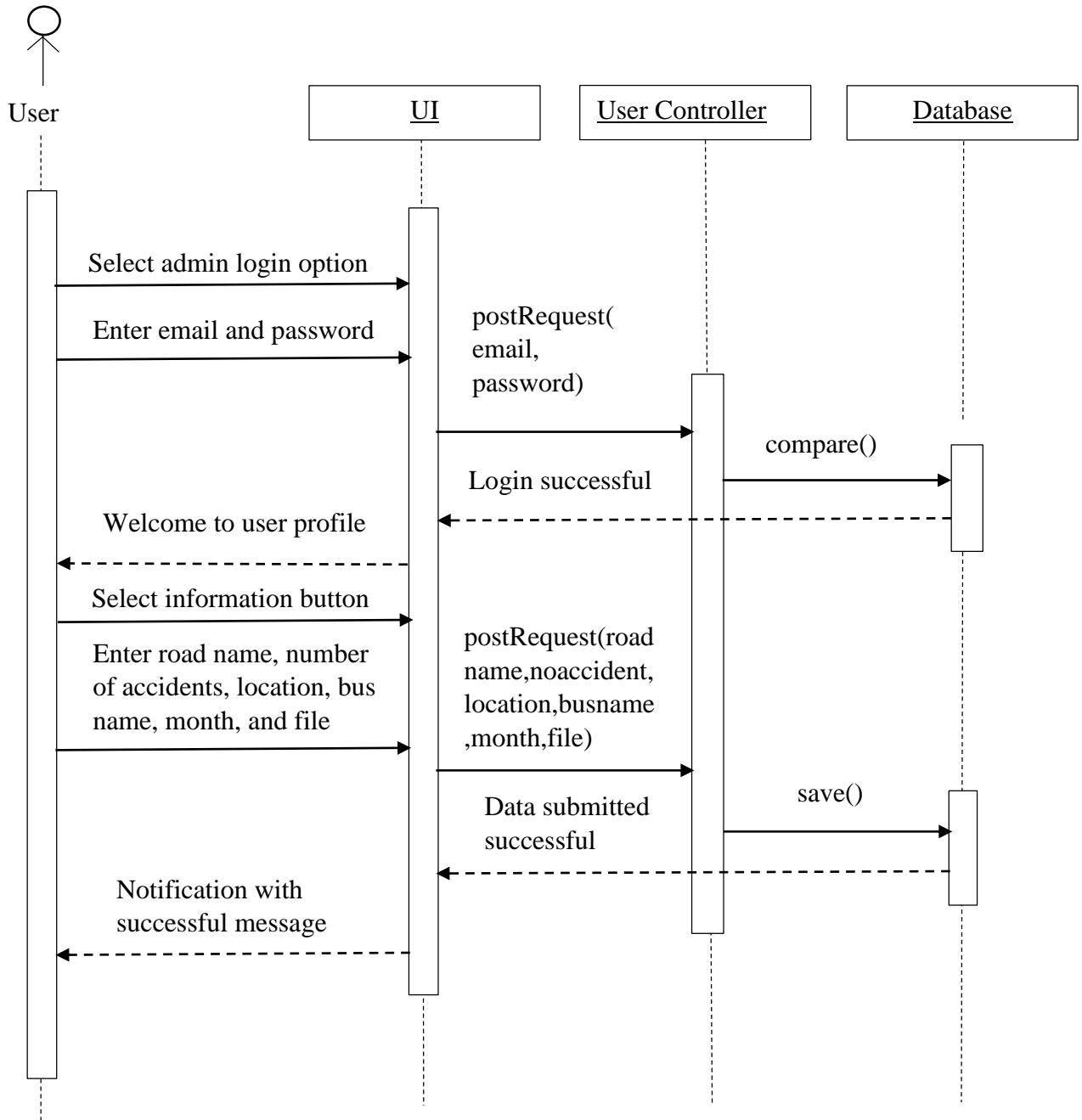


Figure 3.20: Submit information

3.3.8 Create Poll

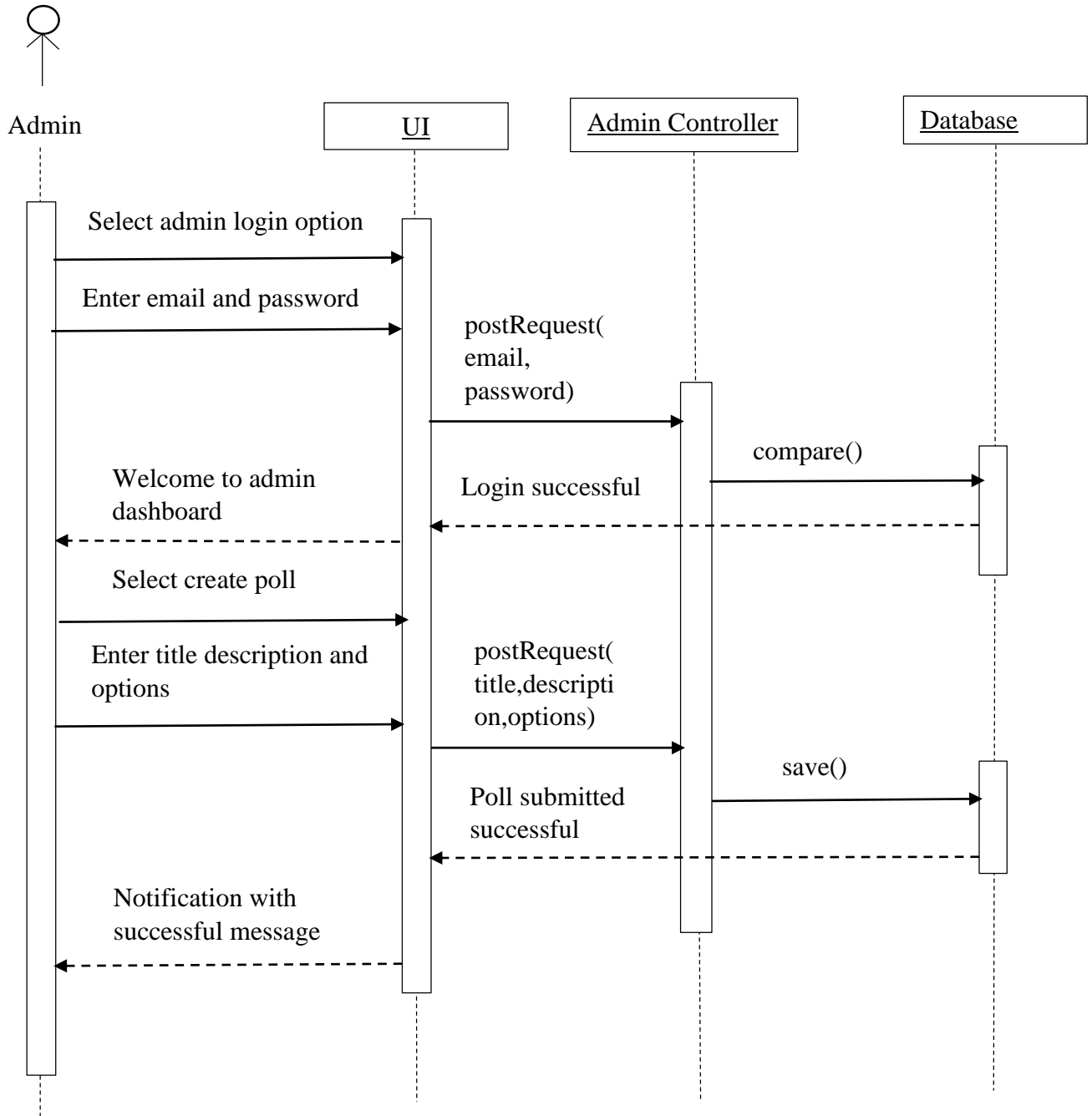


Figure 3.21: Create poll

3.3.9 Vote Poll

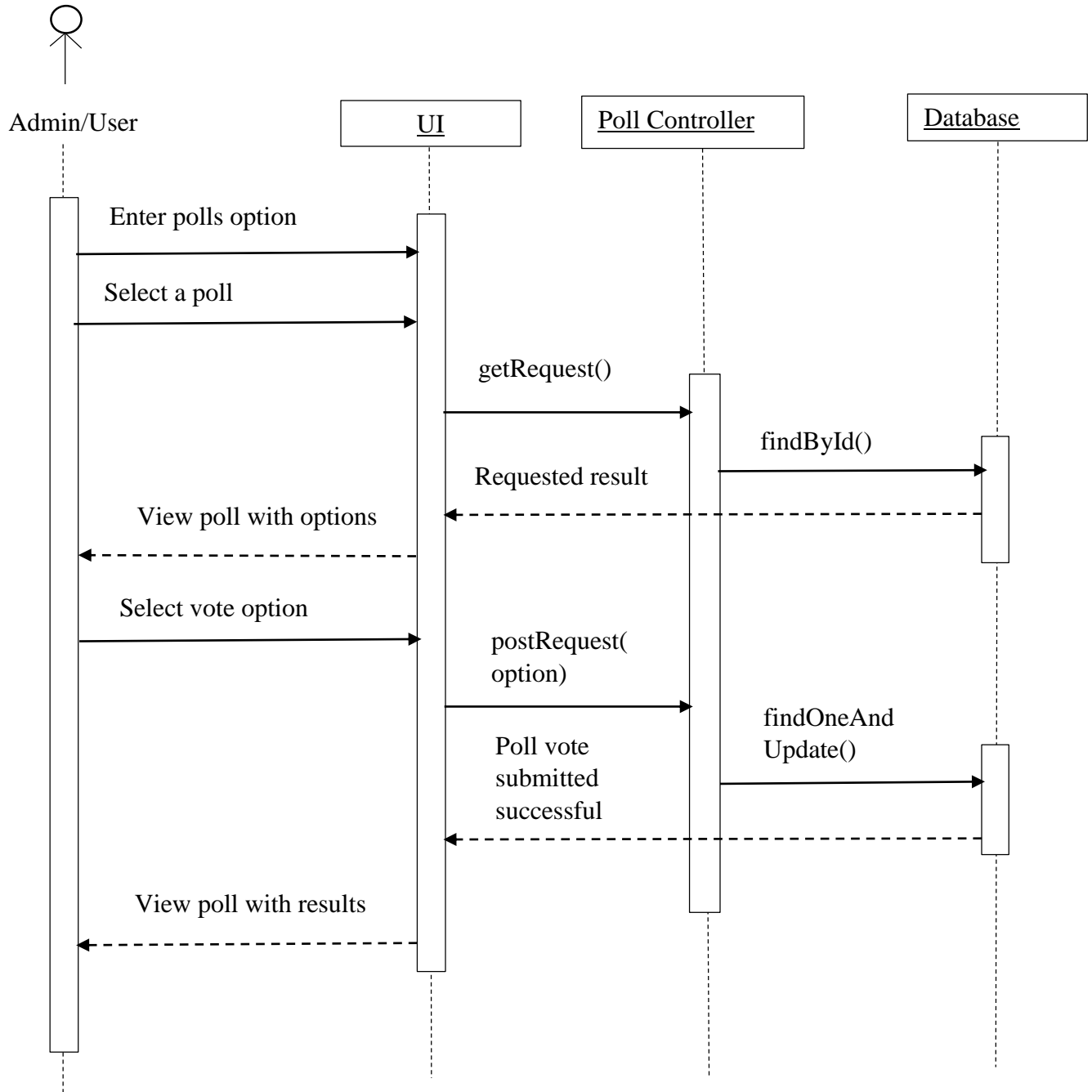


Figure 3.22: Vote poll

3.3.10 View Poll

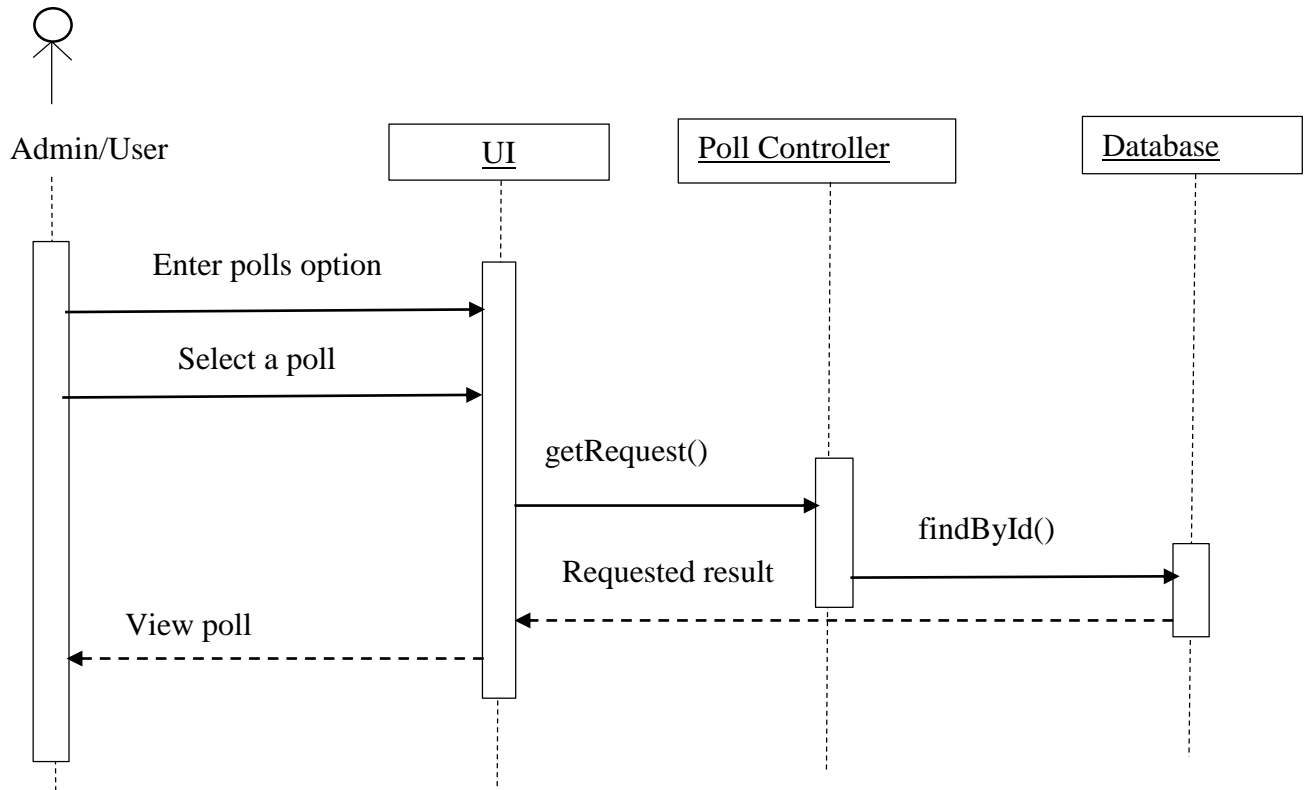


Figure 3.23: View poll

3.3.11 View Google map

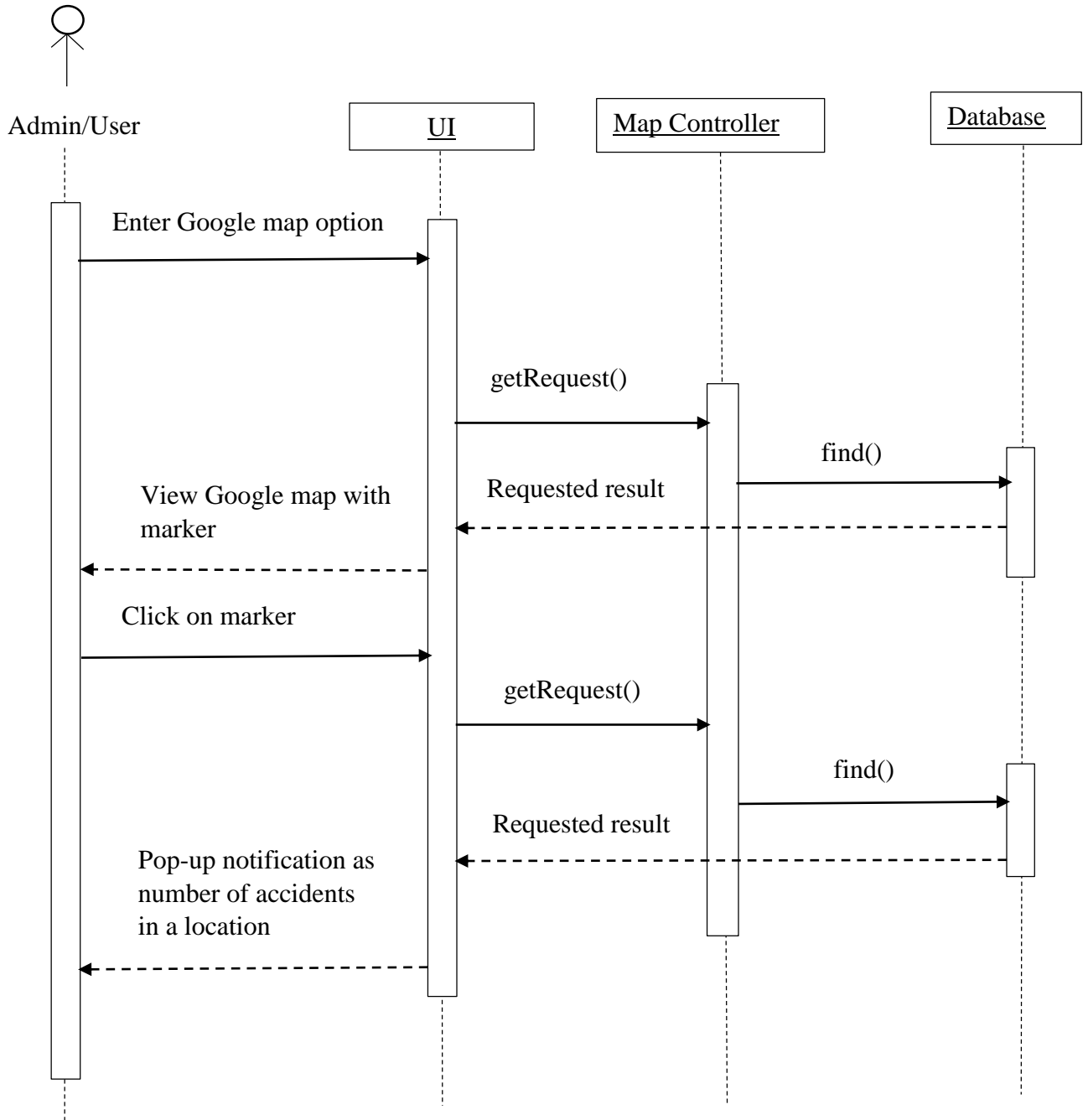


Figure 3.24: View Google map

3.3.12 View submit information

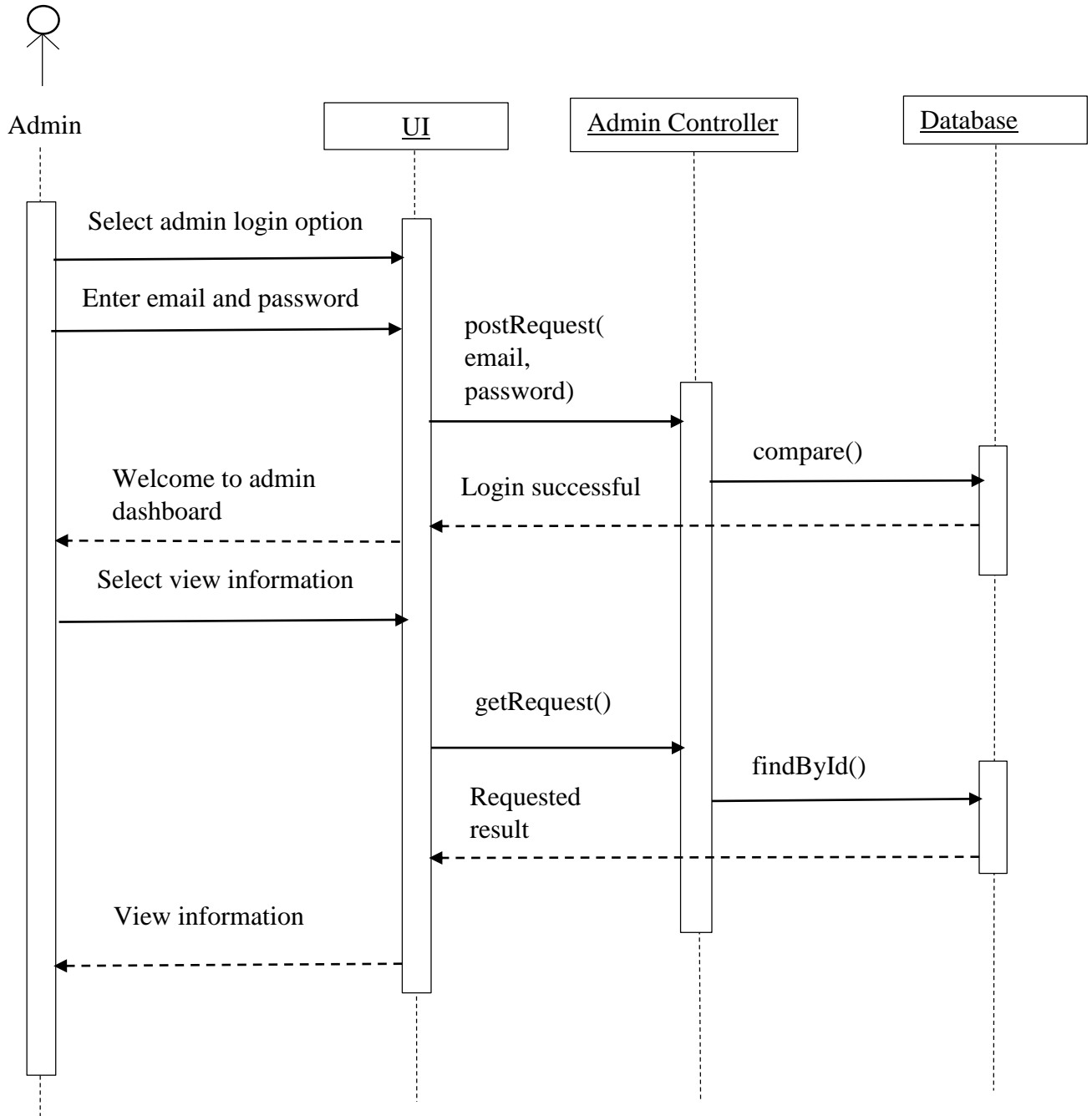


Figure 3.25: View submit information

Chapter 4: System Design Specification

4.1 Development tools and technology

4.1.1 User Interface technology

- Language: JavaScript, ejs(template engine), node js, express js
- Database: MongoDB(mongoose)

4.1.2 Implementation tools and platform

- IDE: Visual studio code
- OS: Windows

4.2 Database Design Diagram



Figure 4.1: Database design diagram

4.3 Class Diagram

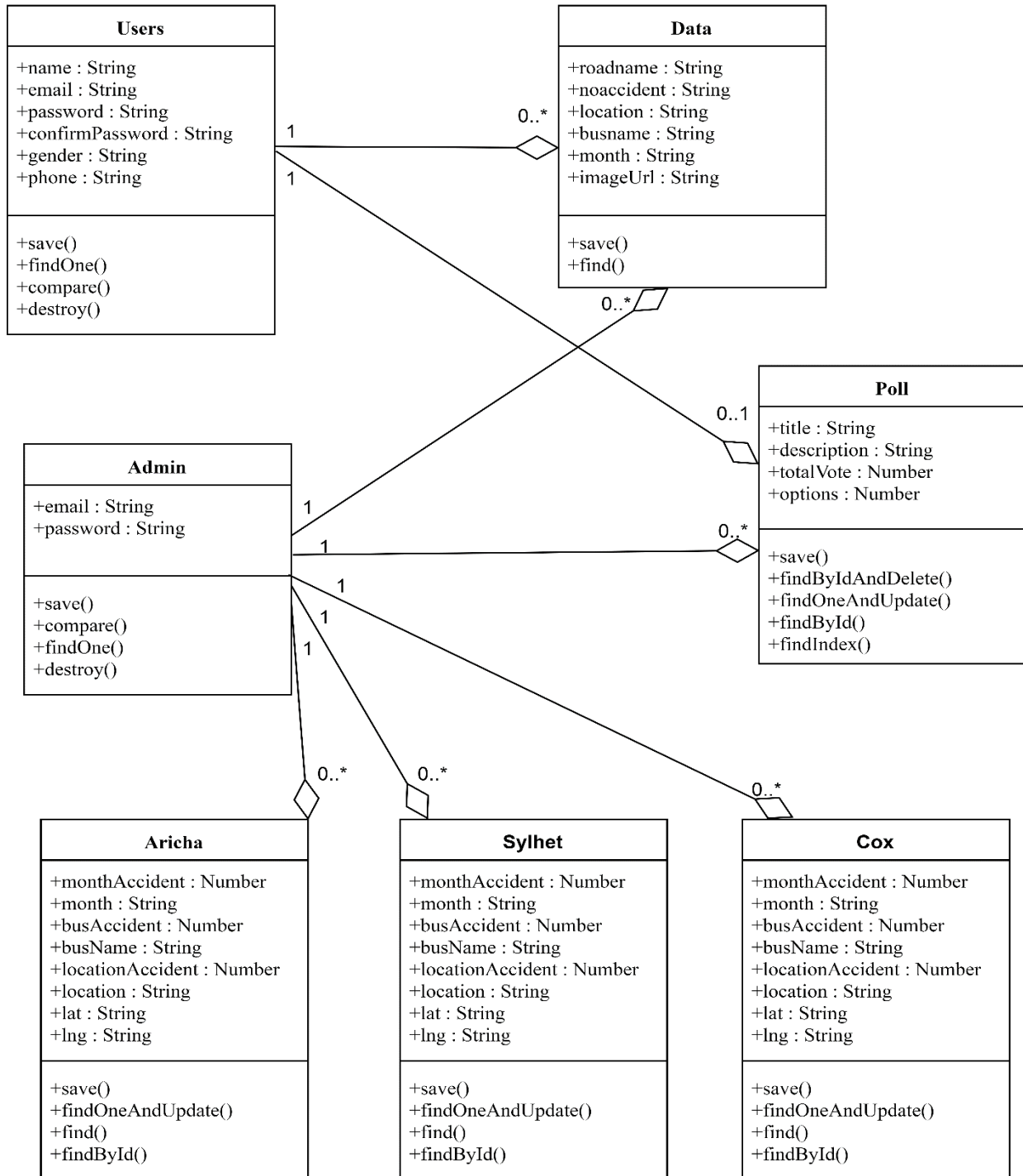


Figure 4.2: Class diagram

Chapter 5: System Test

5.1 Testing features

5.1.1 Features to be tested

Features	Priority	Description
Login	1	Authenticated user should be allowed
Logout	1	Session must be destroyed after logout
User registration	1	Only valid user information save into database properly
Insert into chart	1	Valid data should be inserted into the chart
Submit information	1	User-submitted information must be saved into the database properly
View user submitted information	2	View user submitted information properly
Create poll	3	Create a poll with valid data and save the database properly
Vote poll	2	Choose option before submit and save option properly
View chart	3	Make sure chart show correct result

Table-5.1 Features to be tested

Here,

1 = high priority,

2= medium priority,

3= low priority.

5.2 Testing strategy

The testing strategy is a process that describes the software development cycle testing approach. Testing should justify the requirements and needs of stakeholders to succeed. It is made to inform project managers, developers and testers to focus on some major issues of the testing process.

5.2.1 Test approach

To complete the whole process testers must be taken some approaches

- **Automation testing:** Automation testing means use some automation tools to execute your test case suite. Nowadays this automation test approach uses most by the software company.
- **Manual testing:** Manual testing is the process of finding bugs or defects in a software program. The tester without using any automation tools manually executes test cases.

5.2.1.1 Black box testing:

Black box testing is known as a testing technique. The application under test is tested without knowing code structure and implementation details. Black box testing can be functional or non-functional. This method is used to find errors like incorrect or missing functions and errors in data structures or database access.

5.2.1.2 White box testing:

White box testing is known as testing of a software solution internal structures, design, and coding. This testing also named as glass, structural, open box or clear box testing. When implementing white box testing the tester has to deal with the code and find out which unit or statement or chunk of the code is malfunctioning.

5.2.2 Pass/Fail criteria

Pass or fail criteria is prepared by test engineer on the basis of which input data is worked and which input data is not worked at all.

- If the system crash then it would be considered a failure case.
- If any criteria meet the requirements it would be considered as a pass case.
- If database data does not display properly then it would fail criteria.

5.3 Test Schedule

Test phase	Time
Testing plan	6 days
Test specifications	8 days
Unit testing	During development time
Integration testing	6 days
validation	During development time
Testing user interface	12 days
Testing software performance	14 days

Table-5.2 Test Schedule

5.4 Test environment

Testing environment means to prepare the environment with hardware and software for useful test cases. Some key points for the test environment:

- Hardware with an operating system.
- Network
- Database server
- Browser
- Documentation purpose(Configuration guide, User manual)
- Application or software
- Requirement
- Client operating system

5.5 Test cases

A test case is a set of conditions that can help a tester whether a system under test works correctly or not. This process of test cases can help find problems in the requirements and design of a system. A test case contains test steps, test data, precondition, and post condition developed for specific test scenarios to verify problems

5.5.1 Login

Test case # 1			Test case name: Login		
System: Road crash statistic system			Subsystem: Admin and user		
Designed by: Md. Shafiul Islam			Designed date: 28.10.2019		
Executed by: Md. Shafiul Islam			Executed date:28.10.2019		
Short description: admin and user need to enter into the system then go to login option and then type valid email and password. After successful login, they can enter into the authorized panel					
Pre-conditions: <ul style="list-style-type: none">• An authorized user can be access• User/Admin must enter a valid email and password					
Step	Email	Password	Expected result	Pass / Fail	Comment
1	abs	123456	Invalid!		
2	a@gmail.com		Password cannot be empty		
3		123456	Email cannot be empty		
4	a@gmail.com	123456	Login successful		
Post-condition: User and Admin can successfully login into the system					

Table-5.3 Login

5.5.2 Insert chart

Test case # 2		Test case name: insert chart		
System: Road crash statistic system		Subsystem: Admin		
Designed by: Md. Shafiul Islam		Designed date: 01.11.2019		
Executed by: Md. Shafiul Islam		Executed date: 01.11.2019		
Short description: admin needs to enter into the system then go to login after a successful login system redirects to the admin panel then press Aricha insert or Cox insert or Sylhet insert.				
Pre-conditions: <ul style="list-style-type: none"> ● Admin need to login first ● Insert with valid data 				
Step	Action	Expected result	Pass / Fail	Comment
1	Without fill, the form try to submit	Response with an error message		
2	fill the form with invalid data	Response with an error message		
3	Fill up properly and try to submit	successfully		
Post-condition: admin can insert data successfully				

Table-5.4 Insert chart

5.5.3 Submit information

Test case # 3		Test case name: submit information		
System: Road crash statistic system		Subsystem: User		
Designed by: Md. Shafiul Islam		Designed date: 02.11.2019		
Executed by: Md. Shafiul Islam		Executed date: 02.11.2019		
Short description: The user needs to enter into the system then go to login after a successful login system redirects to profile. Then select information, with valid information user can submit information				
Pre-conditions: <ul style="list-style-type: none"> ● User need to login first ● submit with valid data 				
Step	Action	Response	Pass / Fail	Comment
1	Without fill, the form try to submit	Response with an error message		
2	fill the form with invalid data	Response with an error message		
3	Fill up properly and try to submit	successfully		
Post-condition: user can insert information successfully				

Table-5.5 Submit information

5.5.4 View user-submitted information

Test case # 4		Test case name: view user submitted information		
System: Road crash statistic system		Subsystem: Admin		
Designed by: Md. Shafiul Islam		Designed date: 03.11.2019		
Executed by: Md. Shafiul Islam		Executed date: 03.11.2019		
Short description: admin needs to enter into the system then go to login after a successful login system redirects to the admin panel. He / She can see the details of user-submitted information for validation				
Pre-conditions:				
<ul style="list-style-type: none"> admin need to login first 				
Step	Action	Response	Pass / Fail	Comment
1	Not press details button with a valid id	Response with an error message		
2	Press details button with right id	View details		
Post-condition: view the data is valid				

Table-5.6 View user-submitted information

5.5.5 User registration

Test case # 5						Test case name: user registration		
System: Road crash statistic system						Subsystem: user		
Designed by: Md. Shafiul Islam						Designed date: 05.11.2019		
Executed by: Md. Shafiul Islam						Executed date: 05.11.2019		
Short description: User need to enter into the system then go to the user registration option. Users must enter valid information after successful registration he can log in into the system.								
Pre-conditions: <ul style="list-style-type: none"> • Users must be new into the system • User email must be unique 								
Step	name	email	password	Confirm password	phone	Expected result	Pass / Fail	Com ment
1	shafi	abc	123	234	017	Invalid!		
2		ab@gmail.com	123	568	017	name cannot be empty, password need to match		
3	shafi	ab@gmail.com	123	123	017	Email must be unique		
4	shafi	sha@gmail.com	123	123	018	registration successful		
Post-condition: User can registration successfully								

Table-5.7 User registration

5.5.6 View chart

Test case # 6		Test case name: View chart		
System: Road crash statistic system		Subsystem: Admin and user		
Designed by: Md. Shafiul Islam		Designed date: 06.11.2019		
Executed by: Md. Shafiul Islam		Executed date: 06.11.2019		
Short description: admin and user need to enter into the system then enter the chart with highway road name then view the chart				
Pre-conditions:				
<ul style="list-style-type: none"> Choose the chart option to view the chart 				
Step	Action	Response	Pass / Fail	Comment
1	Insert with invalid data	Response with error message		
2	Insert with valid data	View chart		
Post-condition: insert valid data to view the chart				

Table-5.8 View chart

5.5.7 Create poll

Test case # 7		Test case name: Create poll		
System: Road crash statistic system		Subsystem: Admin		
Designed by: Md. Shafiul Islam		Designed date: 07.11.2019		
Executed by: Md. Shafiul Islam		Executed date: 07.11.2019		
Short description: Admin needs to enter into the system then go to login after a successful login system redirects to the admin panel. Then press create poll option to enter valid data. If data fulfill criteria then poll creates successfully.				
Pre-conditions: <ul style="list-style-type: none"> ● User need to login first ● submit with valid data 				
Step	Action	Response	Pass / Fail	Comment
1	Without fill, the form try to submit	Response with an error message		
2	fill the form with invalid data	Response with an error message		
3	Fill up properly and try to submit	successfully		
Post-condition: insert valid data for create a poll				

Table-5.9 Create poll

5.5.8 Vote poll

Test case # 8		Test case name: vote poll		
System: Road crash statistic system		Subsystem: user and admin		
Designed by: Md. Shafiul Islam		Designed date: 08.11.2019		
Executed by: Md. Shafiul Islam		Executed date: 08.11.2019		
Short description: The user or admin needs to visit the system then choose a poll from the poll list then choose the option he or she wants to vote. Then press the submit button				
Pre-conditions:				
<ul style="list-style-type: none"> visit the system 				
Step	Action	Response	Pass / Fail	Comment
1	Not select a poll with proper valid id	Response with an error message		
2	Not select option try to submit	Response with an error message		
3	Select option and try to submit	successful		
Post-condition: view the result is correct				

Table-5.10 Vote poll

Chapter 6: User Manual

6.1 Login panel

The user's first visit to the website then enters the login option. After visiting the login panel need to type valid email and password. Then need to press the login button.

The image shows a web application interface. At the top, there is a dark navigation bar with links: Home, Information, Chart, Polls, Google Map, Login, and Sign Up. Below this is a large banner with a city skyline and a cartoon bus. The banner text reads: "Welcome to the road crash statistics system" and "This website is work with Chart for the highway road accident and their statistics." In the top right corner of the banner, there are buttons for "User Login" and "Admin Login". Below the banner is a white section with a yellow header "User Login". This section contains a login form with two input fields: "E-Mail" (containing "shafi@gmail.com") and "Password" (containing "....."). Below the password field is a blue "Login" button and a blue link "Reset Password".

Figure 6.1: Login panel for user and admin

6.2 User profile

After a successful login user redirected to a profile page or after login user can choose the profile option to visit the profile page.

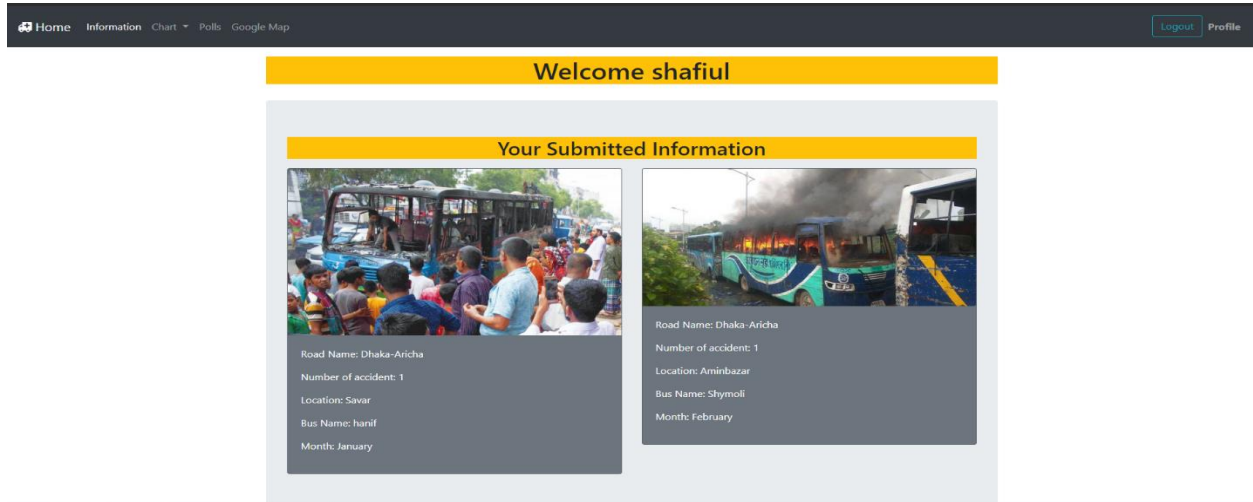


Figure 6.2: User profile

6.3 Submit information

After successful login users can submit information. User need to enter information from the navigation bar then fill the form with valid data and then press submit button

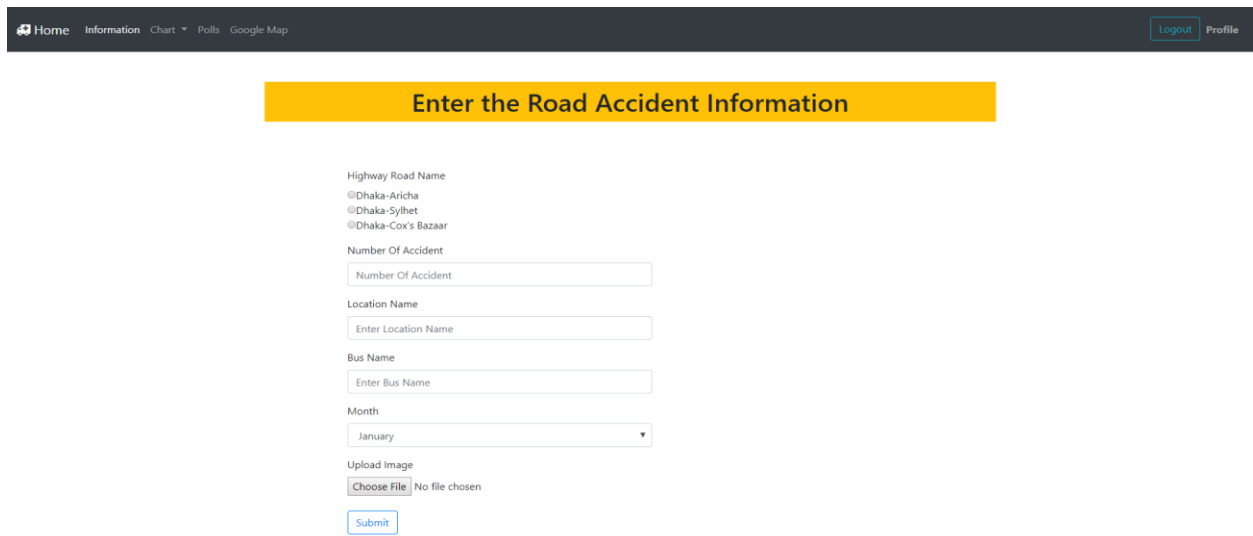
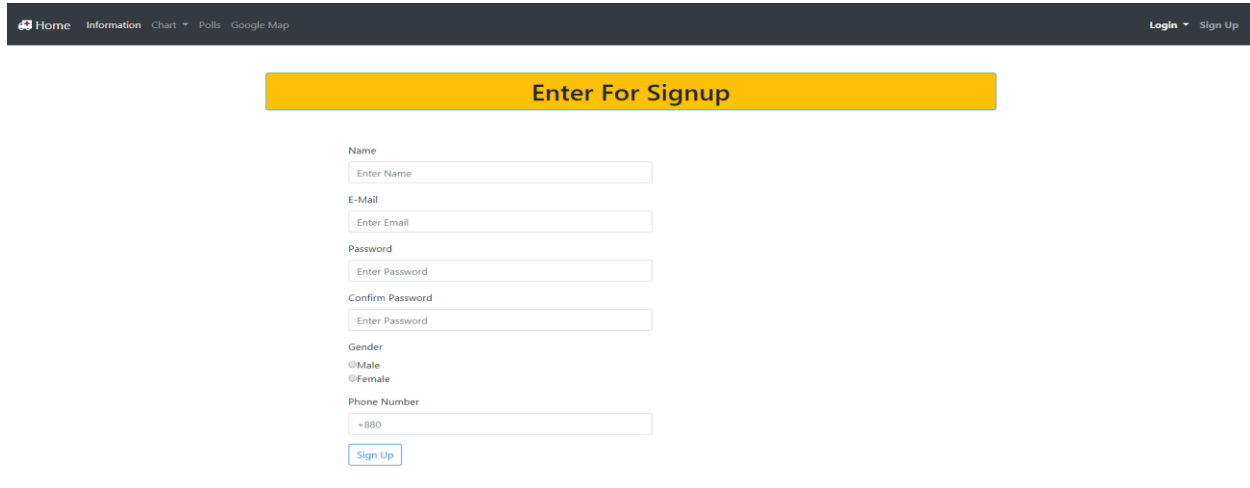


Figure 6.3: Submit information

6.4 Signup

The user's first visit to the website then enters the signup option. After visiting the signup page need to type valid information. Then need to press the signup button.



The screenshot shows a web page with a dark navigation bar at the top containing 'Home', 'Information', 'Chart', 'Polls', and 'Google Map'. On the right side of the navigation bar are 'Login' and 'Sign Up' links. The main content area features a yellow header with the text 'Enter For Signup'. Below this header is a form with the following fields: 'Name' (text input), 'E-Mail' (text input), 'Password' (text input), 'Confirm Password' (text input), 'Gender' (radio buttons for 'Male' and 'Female'), and 'Phone Number' (text input with a '+880' prefix). A blue 'Sign Up' button is located at the bottom of the form.

Figure 6.4: Signup

6.5 View Google map

After visiting the website click on Google map and then click on the marker. Marker pop-up with a notification.

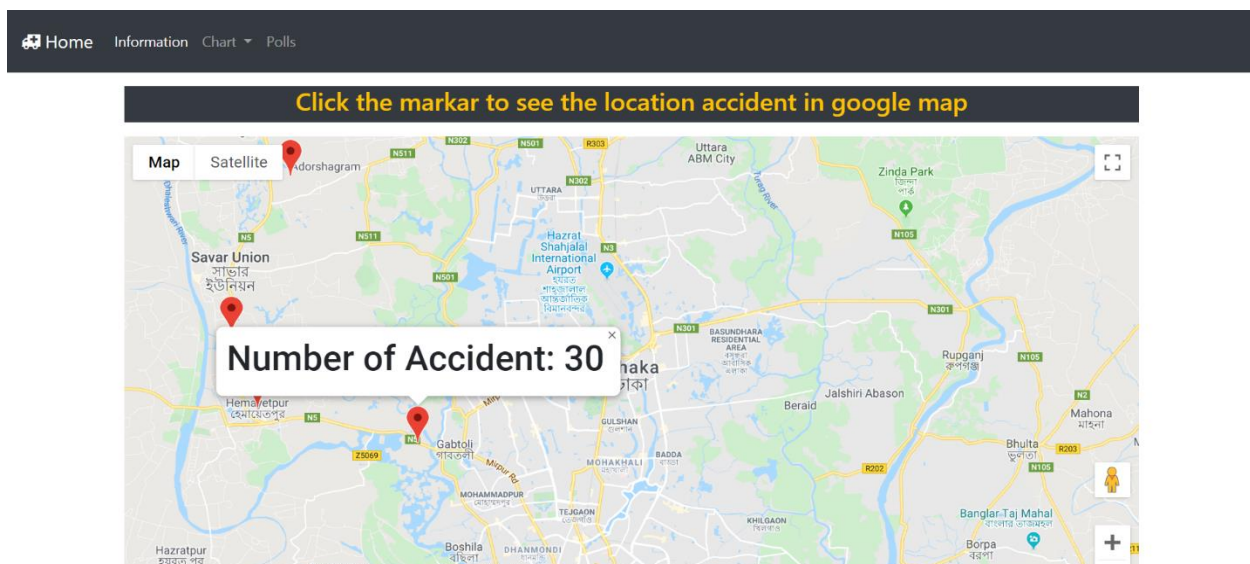


Figure 6.5: View Google map

6.6 Chart

After visiting the website click on the chart with highway road name.

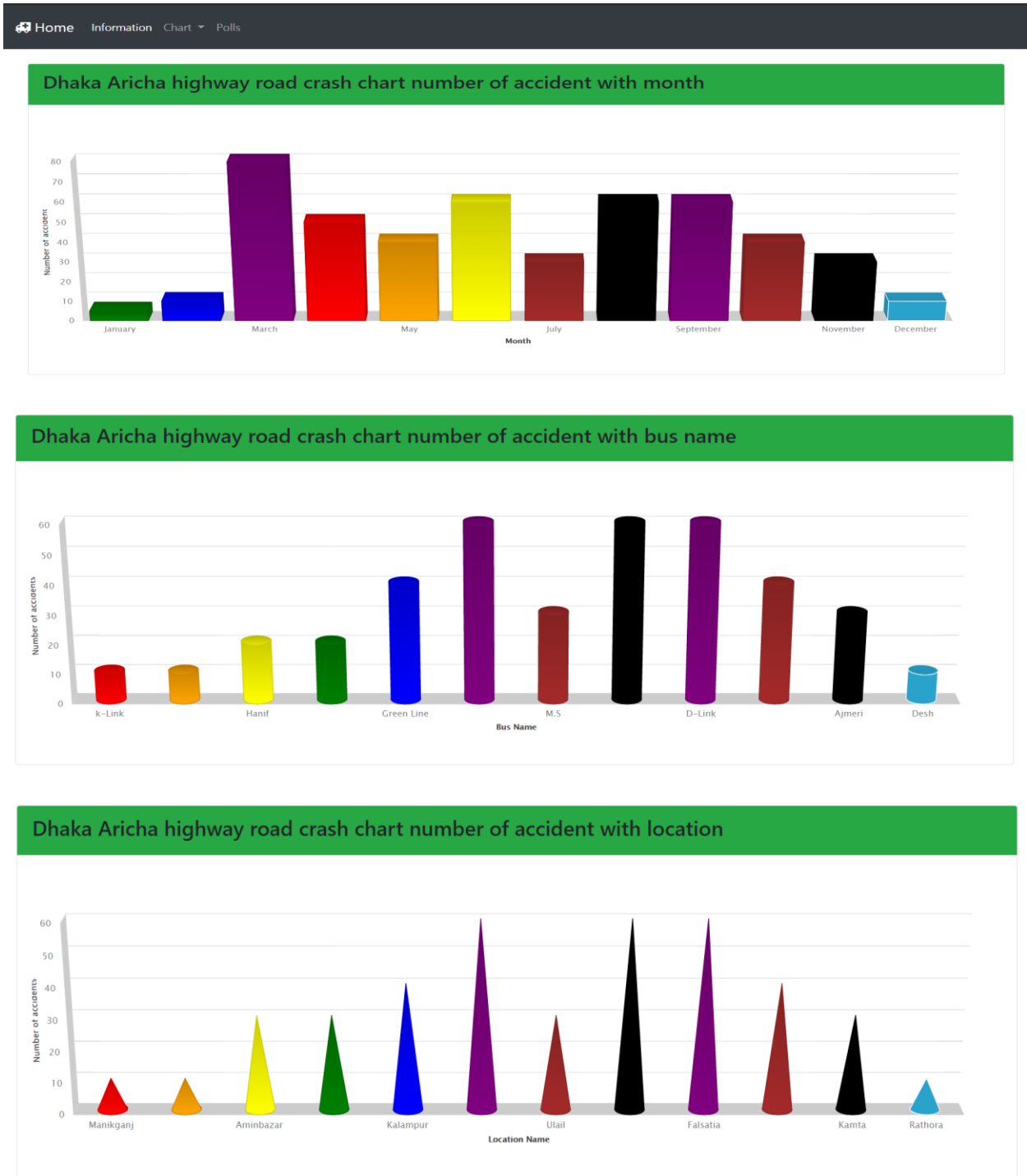


Figure 6.6: Chart

6.7 Poll

After visiting the website select polls option and then select a poll from polls then choose your option and press the submit button.

Home Information Chart Polls

What do you think is the major cause of road accidents in Bangladesh?

Description: Road accidents in Bangladesh have reached epidemic levels, with newspaper headlines reporting casualties on a daily basis.

Result:

Reckless driving:	25.00%
Violation of rules:	12.50%
a tendency to overtake:	12.50%
Speeding:	12.50%
Avoiding Safety Gears:	12.50%
Unsafe Lane Changes:	12.50%
Wrong-Way Driving:	25.00%
Street Racing:	12.50%

What is your opinion

- Reckless driving
- Violation of rules
- a tendency to overtake
- Speeding
- Avoiding Safety Gears
- Unsafe Lane Changes
- Wrong-Way Driving
- Street Racing

Submit your opinion

Figure 6.7: Poll

6.8 Admin dashboard

After visiting the website select admin login. After a successful login system redirected to the admin dashboard.

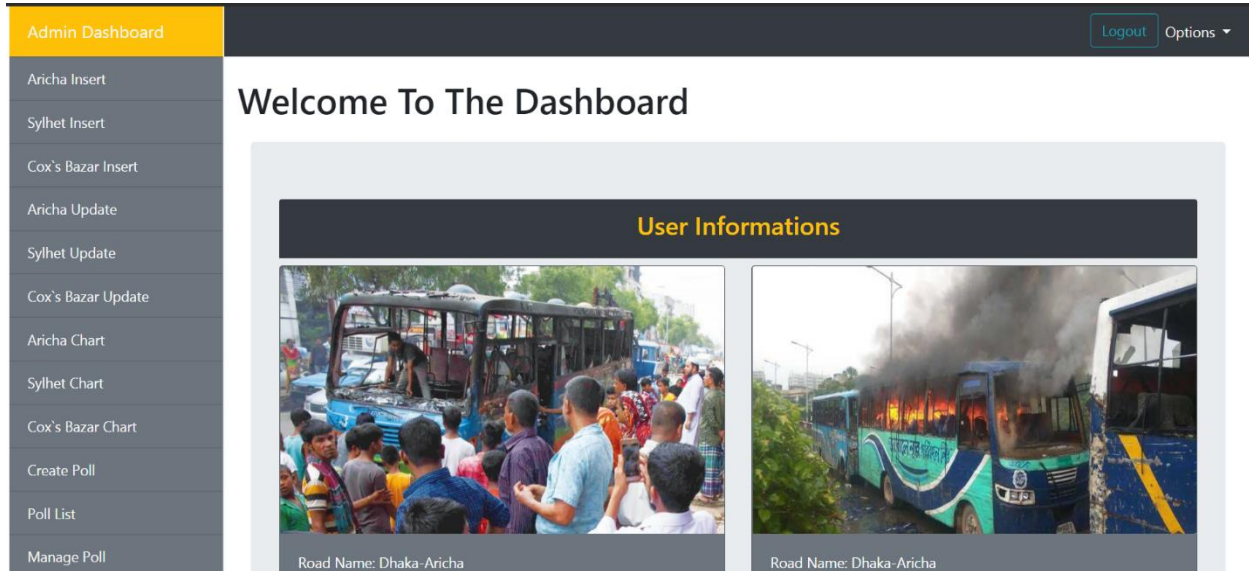


Figure 6.8: Admin dashboard

6.9 Update chart

After the admin login, the system redirected to the admin dashboard page. From the admin dashboard select Aricha update or Sylhet update or Cox bazar update.

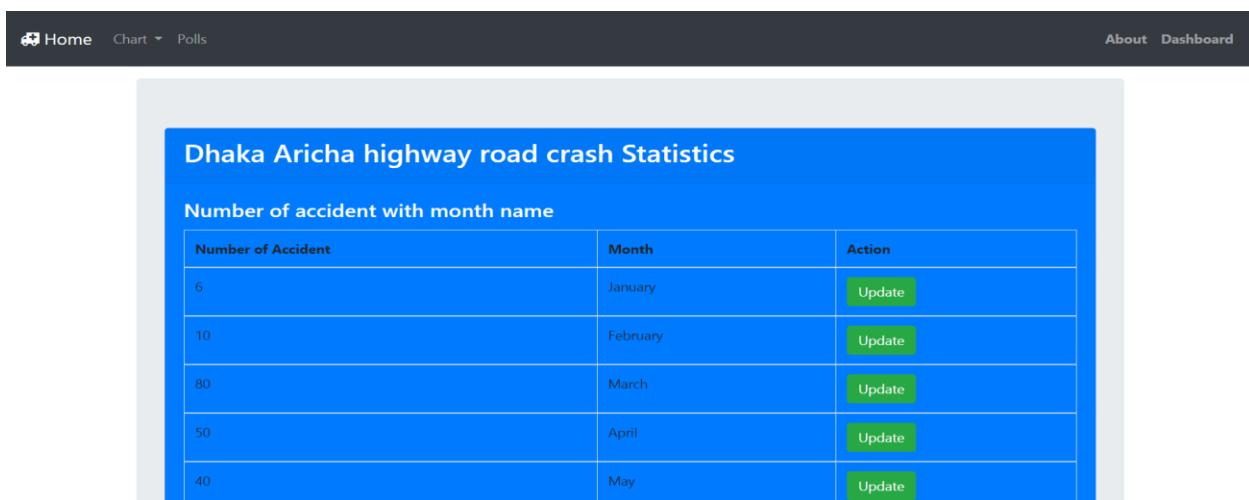


Figure 6.9: Update chart

Chapter 7: Conclusion

7.1 Project Summary

This is a system which mainly works with Bangladesh highway road accident. I started to develop this system from jun-2019. This project generates three charts for each highway. Charts are like the number of accidents with highway names, the number of accidents with bus names and the number of accidents with location names. This system also works with Google map users can number of location accidents click on the marker. From the very beginning of the development of this project, it demands hard work and persistence to meets the requirement of this project.

7.2 limitations

There are some limitations to this project. This is a website version there is no desktop or android version for this project. User-submitted information is manually validated by admin but there is no system auto validation. Poll vote system for everyone there is no authentication system.

7.3 Obstacles & Achievements

While developing this project I face a few challenges. While developing the project requirements I visit some websites which is very helpful for me, I learned a lot of things from documentations. Obstacles, challenges, and achievements are like a path to reach a goal. My supervisor helped me a lot from the very beginning to develop this project.

7.4 Future Scope

I tried hard to make this project satisfactory. When developing this project I face some problems and I tried to solve those problems which may help me in the future when I develop another project. In the near feature, this system helps Bangladeshi people to sensible about road accidents.

7.5 References

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