



# **American International University-Bangladesh (AIUB)**

**Faculty of Science and Technology (FST)**

**Department of Computer Science (CS)**

**SDPM Group Project, Fall 2023**

**Building a Traffic Avoidance Application**

**Section -B**

**Submitted by**

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## **1. Introduction**

Traffic avoidance Apps help people avoid traffic and will save time by giving them current traffic information and suggesting different ways to go. By staying away from crowded areas and accidents, people can get to where they're going quicker and have less waiting because of lots of traffic. Bangladesh is a country that is still growing, and many city roads are being built right now. Many people get stuck on the road sometimes. This app can help you choose the best route and avoid traffic jams. Aware people can post live feedback by sharing some photos or videos of the road's current condition, and it will be removed after a day. These driving apps can give you information about accidents, road dangers, and other things that might be unsafe. People can get warnings and pick safer paths, making it less likely for accidents or other bad things to happen. People can use less fuel by not spending a long time in traffic. Traffic apps often give us different ways to go that our users will like. In general, this system gives people useful information, helps them avoid traffic, saves time, and makes their experience better.

## **2. Project Overview Building a Traffic Avoidance Application:**

These days we use our valuable time on the road because of some difficulties, roads under construction, and huge traffic on the road. It took sometimes a full day on the road. Traffic Avoidance Application apps can reduce this problem in a proper way to increase human as a helping hand. This app will provide live activities of the particular road, like if someone can check the road condition before he/she has visited there by checking live activity. There are some features like conscious people can share pictures and videos if they face any traffic or bad conditions on the road. Then the other person who wants to avoid this road can check this before this. The main aim of this app will be help people to find the minimal shortest path to reach one place to another place. At the same time, people will get benefit from this by getting live activities. This application is online and also user-friendly. It offers some extra benefits like emergency helpline contacts will be linked if someone needs them. The user doesn't need to sign up or sign in. Every user will get some reward points if he/she able to share live activities by uploading pictures and videos. Images and videos will be deleted within a day.

### **3. Software Development Project Management Plan**

Traffic Avoidance Application systems are a part of project management plans in software development. They involve different tasks and activities needed to make sure the project is successful. The plan shows what the project will do, what it aims to achieve, what it will create, and when important points will be reached. It also explains how the project is set up, what everyone's job is, what they need to do, and when it needs to be done. The plan makes sure the project meets the right standards and lowers any risks. The budget plan is the last part of the project plan and includes information about how much money will be spent, how much things will cost, and how the money will be managed. Project managers can use a good plan to control resources, lower risks, and make sure the project is done on time, without spending too much money, and that everyone involved is happy with it.

### **4. Project Objective**

The main objectives of this project are:

- To get a better transport experience throughout the city.
- Efficient distance measuring by using user destination.
- To provide users with real-time traffic information, alternative routes, and navigation suggestions to avoid congested areas.
- To make data-driven decisions and save time for users.

### **5. Project justification**

One important aim of traffic avoidance apps is to give current updates on traffic. By studying old and current traffic information, these apps can guess what future traffic and congestion will be like. This helps people to plan their trips early and pick the best time to leave. Apps that help you avoid traffic can give you information about dangerous road conditions, areas where there is construction, and places where accidents happen often. This can help drivers make safer choices when driving. Connecting with voice-activated assistants lets drivers get live traffic updates and route suggestions without using their hands while driving.

## 6. Systems Overview

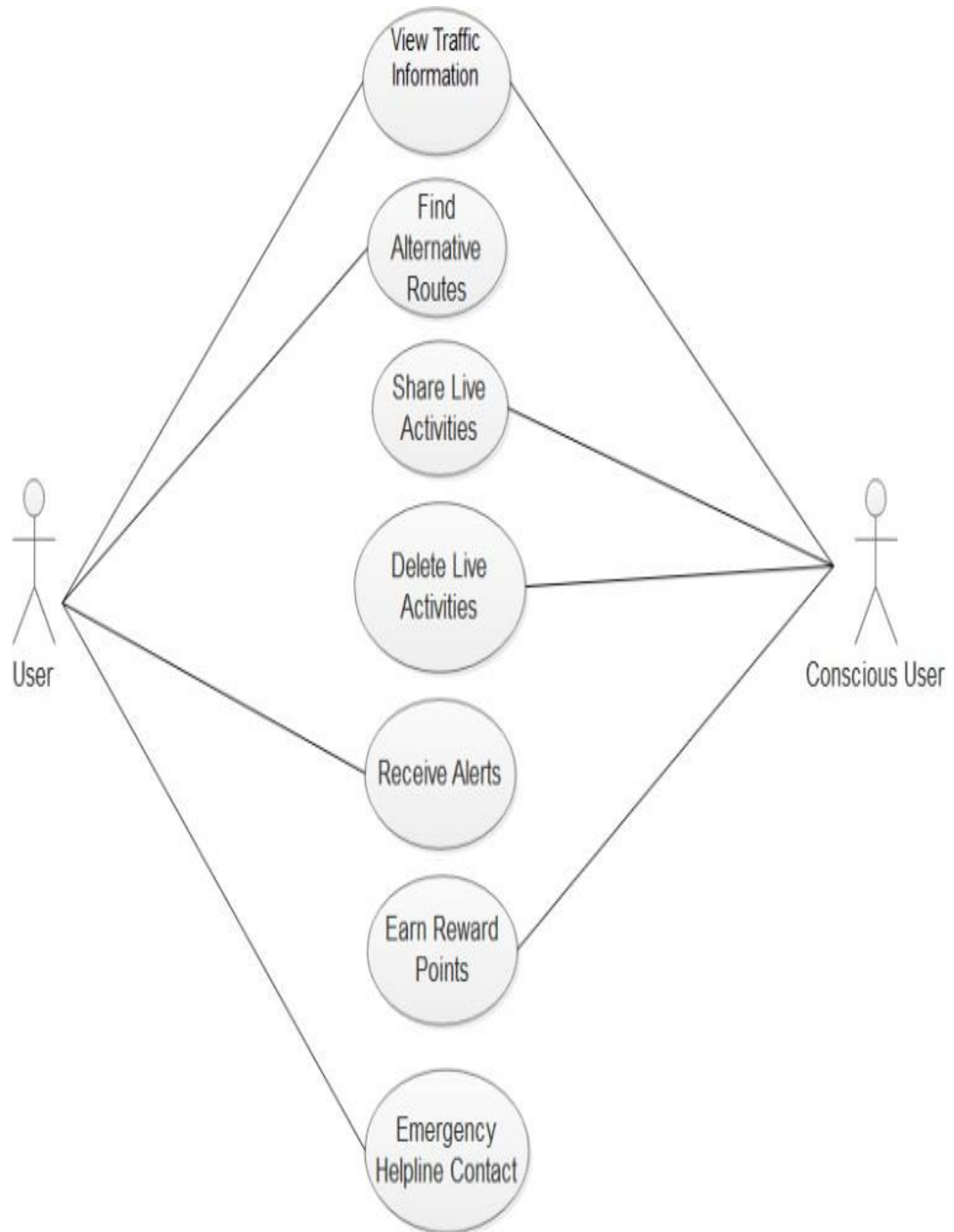


Figure 1: Use case diagram

## **7. Project Deliverable**

- a. Project requirement document
- b. Project management plan documents
- c. Resource gather
- d. Source Code
- e. User Manuals
- f. Test reports
- g. Prototypes or Mockups
- h. Data Models
- i. Project plan and schedule
- j. Training materials
- k. Security and compliance documents
- l. Release package
- m. Support and maintenance plan

## **8. Project Management Tools**

We used clickup.com for our project as project management tool. We got better user experience and a lots of feature in this.

## **9. Project Resource Planning**

Resource planning involves determining the necessary resources for a project, procuring them, and ensuring their efficient use to complete the project successfully. In this situation, resources can mean different things like people, tools, buildings, materials, money, and other stuff needed to finish the project. Good resource planning means thinking carefully about the project's size, timeline, goals, and needs. It wants to use resources efficiently, avoid running out of resources or having too much, and make sure the project is done on time and within the budget.

## 10 Efforts estimation

This Gantt chart may be a visualization of extended administration apparatus used to plan, arrange, and track assignments and activities over a particular period. It gives a graphical representation of a project's timeline, showing when assignments start and conclusion, how they cover, and how they extend advances over time. At first, we started our task on 19 June and finished it 20th August. In this Gantt chart, we have a few parallel tasks and subtasks.

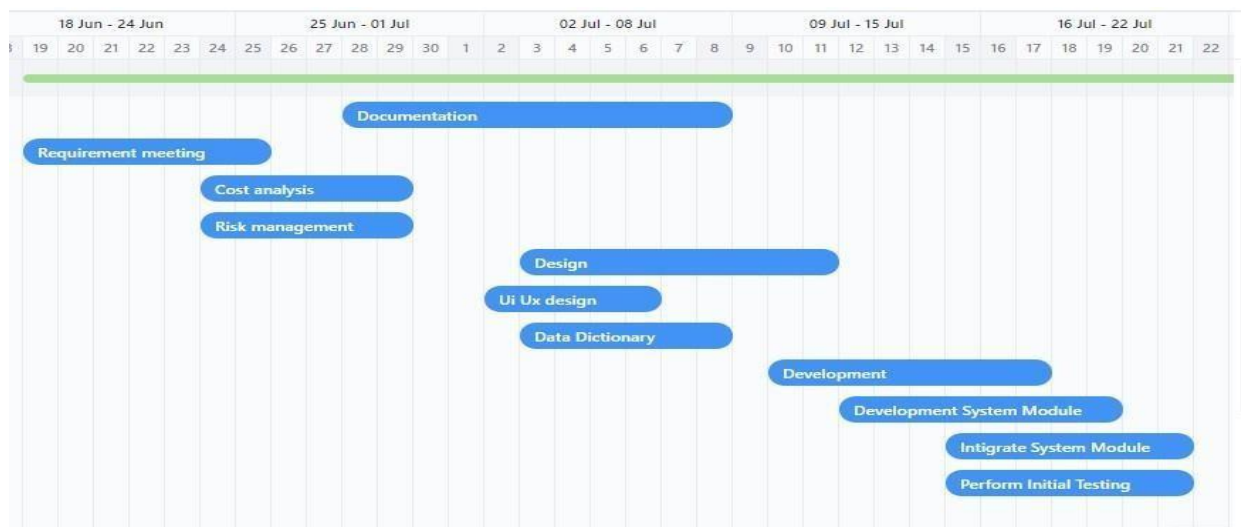


Figure 2: Project Gantt Chart (part A)

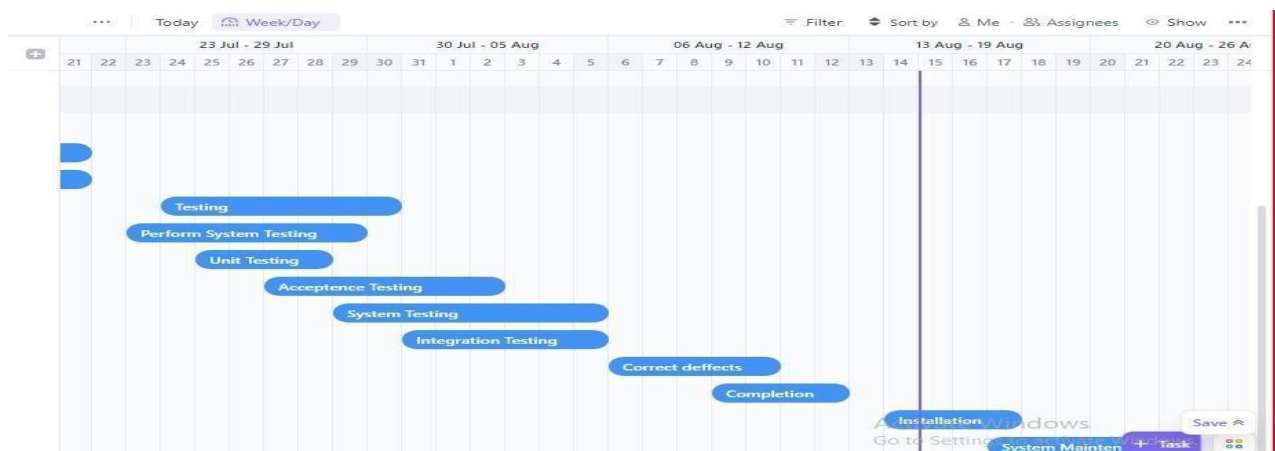
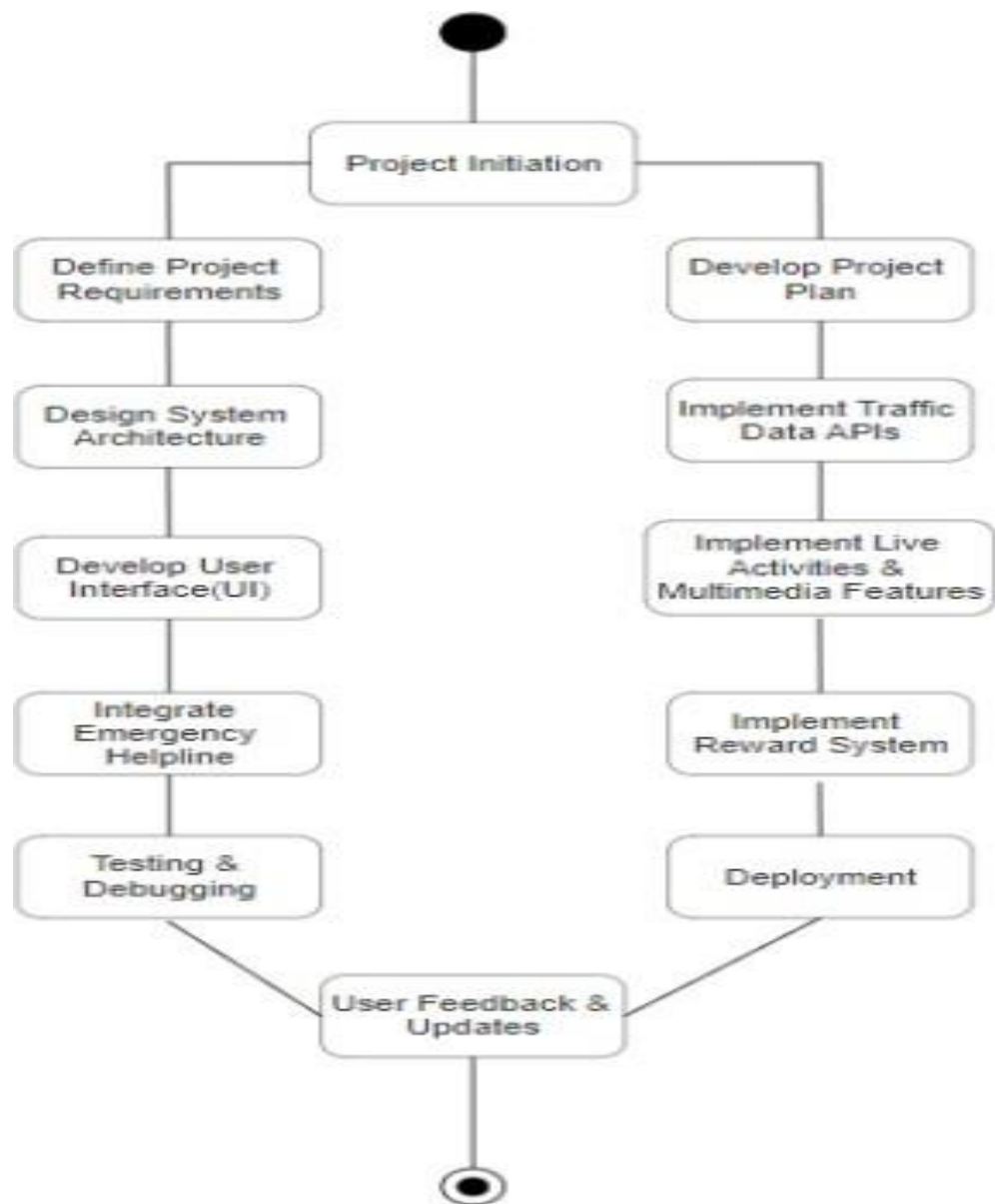


Figure 3: Project Gantt Chart (part B)

## 11 Project Activity Diagram



**Figure 4:** Project activity diagram



## 12 Project Risk Analysis

Some potential risks may occur during the build-out project if any of these fields are lacking like if any technical issues happen. Highly risky terms as budget and lack of communication if any project member leaves.

Low 1 TASK		ASSIGNEE	CATEGORY	SUPPORT LEVEL	ENGAGEMENT LEV...	NPS SCORE
Technical issue		F	Low	Gold	Med	★★★★★☆☆☆☆
+ New task						
Medium 2 TASKS		ASSIGNEE	CATEGORY	SUPPORT LEVEL	ENGAGEMENT LEV...	NPS SCORE
Deadline Over		A	Medium	Silver	High	★★★★★☆☆☆☆
Programmatic risk		F	Medium	Gold	Med	★★★★★☆☆☆☆
+ New task						
High 5 TASKS		ASSIGNEE	CATEGORY	SUPPORT LEVEL	ENGAGEMENT LEV...	NPS SCORE
Budget		F	High	Gold	Low	★★★★★☆☆☆☆
Communication		F	High	Gold	High	★★★★★☆☆☆☆
project team member leaving		A	High	Gold	Low	★★★★★☆☆☆☆
Stakeholder Issues		A	High	Gold	Med	★★★★★☆☆☆☆
Expectation		F	High	Gold	Low	★★★★★☆☆☆☆
+ New task						

Figure 5: Project Risk Analysis

## 13 Budget Estimation

Budget estimation in a software project refers to the process of estimating the financial resources required to complete the project successfully. It involves predicting the costs associated with various aspects of the project, including personnel, equipment, software and hardware, third-party services, overhead, and any other expenses that might arise during the project's lifecycle. Accurate budget estimation is crucial for effective project planning, resource allocation, and financial management. Our approximate total budget is 145,000 Bangladeshi Taka.

Budget Estimation

Budget Estimation 0 + NEW TASK

SHOW CLOSED

ADD NEW STATUS

BUDGETED

4 TASKS

▼ Salary Bill 4 +

Project manager

Software Developer

SQA Engineer

Software Designer

▼ Software and Hardware Cost 3 +

Server Hosting

Software Tools

Hardware

▼ Training and Support 2 +

User Training

Technical Support

▼ Utility Cost 4 +

Electricity Bill

Internet Bill

Office Supplies

Travel expenses

ASSIGNEE

P

P

P

P

A

A

A

A

P

A

A

A

P

P

P

P

DUE DATE

Jul 12

Jul 22

Jul 8

Jul 30

Jul 9

Jul 27

Jul 1

Jul 1

Jul 1

Aug 1

2 days ago

2 days ago

Jul 12

Jul 12

Jul 12

Jul 12

PRIORITY

High

Low

Low

Low

Low

Low

High

High

High

Low

Low

Low

Low

Low

Low

Low

BUDGETED COST

187,000

120,000

125,000

110,000

112,000

156,500

12,500

14,000

150,000

110,500

15,000

15,500

18,000

15,500

12,000

1500

12,000

ACTUAL COST

187,000

120,000

125,000

110,000

112,000

156,500

12,500

14,000

150,000

110,500

15,000

15,500

18,000

15,500

12,000

1500

12,000

REMAINING

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

Error

CATEGORY

Personal Cost

Personal Cost

Personal Cost

Personal Cost

Personal Cost

Hardware

Hardware

Hardware

Hardware

Others

Others

Others

Utility Cost

Utility Cost

Utility Cost

Utility Cost

Utility Cost

FIXED/VARIABLE

Fixed

Fixed

Fixed

Fixed

Fixed

Variable

Variable

Variable

Variable

Variable

Variable

Variable

Variable

Variable

Variable

Variable

Variable

+ New task

**Figure 6:** Project Budget Estimation Chart

## 14 Conclusion

In conclusion, traffic avoidance applications are a necessary part of modern urban living, offering innovative solutions to address the challenges posed by traffic blockage, unusual road conditions, and inefficient transportation systems. These applications use real-time information, advanced algorithms, and user-friendly interfaces to empower people with the tools required to navigate cities more efficiently, decrease travel time, and improve overall quality of life.

By providing up-to-date traffic information, recommending optimal routes, and even considering environmental factors, these apps empower users to create informed decisions that save time, reduce stress, and contribute to more feasible transportation choices. The integration of multi-modal options, smart city technologies, and predictive analytics further demonstrates their potential to reshape the way we move within.