

# AAGAH

## Project Proposal

(Semester 7-8)

**BY**

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Abstract

Aagah is a cutting-edge mobile application designed to enhance users' daily commute experience. This innovative solution offers real-time location-based alerts, delivering crucial information on traffic conditions, accidents, and road closures precisely where users are. The customizable interface allows users to tailor their alert settings and add frequently visited places, ensuring a personalized experience. Aagah employs intelligent filtering to provide users with the most relevant news updates, saving valuable time. Furthermore, it promotes community involvement by encouraging users to share updates, fostering engagement, especially during emergencies. With its interactive map interface displaying real-time traffic data, including blockages and their causes, Aagah is set to revolutionize how individuals navigate their daily journeys.

PROJECT OVERVIEW

A PROJECT TITLE Developing a Real-time Location-based Mobile Application for Commute Updates and News Alerts

B ACRONYM AAGAH

C TAGLINE "Stay Informed, Stay Ahead: Aagah - Your Daily Commute Companion"

D START DATE:

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E EXPECTED COMPLETION:

3	0	0	5	2	0	2	4
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F PROJECT BRIEF

The 'Aagah' project aims to address the challenges faced by individuals in staying informed about critical news updates and traffic conditions while leading busy lives. This innovative mobile application, Aagah, offers a comprehensive solution by leveraging real-time location-based alerts and customizable features. Aagah will empower users to efficiently plan their commutes, stay informed about local news, and actively contribute to community awareness.

Key Features:

- Real-time Location-based Alerts: Aagah delivers instant alerts tailored to users' current locations, providing essential information about traffic conditions, accidents, and road closures.
- Customizable Interface: Users can personalize their alert settings and add frequently visited places for a tailored experience.
- Relevant News Updates: Aagah employs intelligent filtering to present users with only the news that matters most to them, saving valuable time.
- Community Involvement: The app encourages users to share updates, fostering community engagement, especially during emergencies.

Interactive Maps: Aagah offers an interactive map interface that displays real-time traffic data, including blockages and their causes.

## PROBLEM STATEMENT

### **Unmet Need/Problem:**

The unmet need/problem is the lack of a comprehensive and real-time information source for students and office workers who frequently commute to Karachi, Pakistan. They face challenges related to:

- Unpredictable Traffic Conditions: Karachi experiences traffic congestion, accidents, and road blockages regularly, causing delays and disruptions to daily commutes.
- Safety Concerns: Protests, strikes, and other civil unrest events can lead to unsafe commuting situations, and commuters need timely information to make informed decisions.
- Economic Impact: Frequent petrol price hikes can significantly impact the cost of commuting for office workers and students, affecting their budgets and financial stability.
- News Relevance: Keeping up with relevant local news while on the move can be challenging due to the fast-paced nature of the city.

### **Audience:**

- There are 2 primary groups of people/customers facing these problems:
- Students: High school and college students who commute daily to educational institutions.
- Office Workers: Professionals and employees who travel to their workplaces daily.

### **Significance of the Problem in Socio-Economic Sense:**

- Lost Productivity: Traffic congestion and disruptions can lead to significant time wastage, resulting in lost productivity for individuals and businesses.
- Safety Risks: Unpredictable Road conditions can pose safety risks to commuters, potentially leading to accidents and injuries.
- Financial Impact: Frequent petrol price hikes can strain the finances of students and office workers, affecting their overall financial well-being.
- Quality of Life: Constant exposure to stressful commutes can negatively impact the overall quality of life and mental well-being of individuals.

### **Population Size of the Audience:**

- Karachi is the largest city in Pakistan and one of the most populous cities in the world. It has a diverse population of approximately 15 million people. Among them, a significant portion includes students and office workers who face daily commuting challenges.

### **For Research Projects:**

- The potential users of this research project include:
  - Students: High school and college students who can benefit from real-time commute updates and safety information.
  - Office Workers: Professionals and employees who can use the application to plan their daily commutes more efficiently.
  - Local Authorities: Traffic management and law enforcement agencies can potentially use the data generated by the application to improve traffic management and emergency response.
  - Research Teams: Academic and research teams studying urban mobility, transportation, and technology adoption can benefit from the data and insights generated by this project.
  - IBA Professors and Researchers: Professors and researchers at the Institute of Business Administration (IBA) may find value in the project's potential to address real-world transportation and information needs in a bustling city like Karachi. They could incorporate the project as a case study or leverage its findings for further research.

## **MARKET/LITERATURE REVIEW**

### **1. Open-Source Solutions**

#### **I. Map Apps**

##### **a. Apple Maps**

##### **Disadvantages:**

- It is only available on IOS platforms and does not work for Android or web-based platforms.
- Apple Maps will display slowdowns in traffic, but the app focuses so much on the user's current location that it makes seeing future problems difficult.
- No speed limit signs.
- Apple Maps can be less intuitive regarding any construction-related roadblocks, and not rerouting to an alternate path.

b. Google Maps

Disadvantages:

- It keeps track of the device GPS history; some users prefer privacy.
- The real-time traffic sometimes is overestimated.
- Map downloading requires a lot of hundreds of MB size, so it drains your data usage.

c. WAZE

Disadvantages:

- Purchases by Google, so also sharing data with Google is a possibility.
- Data is shared with the app, with no privacy.
- Some places do not appear on the map, you have to search for them.
- Advertisements.
- Only shows the nearby search results.

d. HERE WE GO

Disadvantages:

- Location sometimes is inaccurate.
- Information about places is out-of-date.
- Does not find all the paths to your destination.

e. BING MAPS

Disadvantages:

- Data for working hours and conditions are not available.
- Does not support mobile devices.

**ii. News Apps**

a. Apple News

Disadvantages:

- Limited Availability: It's primarily available on Apple devices, excluding Android users.
- Paywall Content: Some premium content may require a subscription.
- Limited Customization: While it curated news, it may not offer as much personalization as other apps.

b. Reuters News

Disadvantages:

- Limited Personalization: Offers less personalized news content compared to some other apps.
- Not as Feature-rich: May lack some of the multimedia and interactive features of the other apps.
- No Offline Mode: There is no offline reading mode.

c. SmartNews

Disadvantages:

- Clickbait: Some users have reported encountering clickbait articles.
- Limited Original Content: SmartNews relies on external sources and may not have much original content.
- Algorithmic Bias: Like other personalized news apps, it can create filter bubbles.

d. BBC News

Disadvantages:

- Limited Personalization: Offer less personalization compared to some other news apps.
- May Not Be as Timely: Due to its thorough reporting, breaking news might be slightly delayed.
- Regional Restrictions: Some content may be geo-restricted based on your location.

## PROJECT DETAILS

### A PROPOSED SOLUTION:

Our proposed project aims to address the challenges commuters face when navigating through road blockages, as well as keeping users informed about relevant news and events in their vicinity. The innovative mobile app, tentatively named "Aagah," offers a holistic solution that leverages location-based services and user-generated content. Aagah's unique selling points (USPs) include its real-time road blockage alerts, personalized news updates, and a user-generated live update feature integrated into a single platform. What sets Aagah apart is its ability to provide a one-stop solution for real-time navigation and situational awareness, enhancing the overall commuting experience.

### B PROJECT OBJECTIVES:

Develop Aagah mobile application for both Android and iOS platforms.

Implement a robust location-based road blockage detection system using GPS and traffic data from Google Maps API.

Implement web scrapers for different news channels, like News21, and Dawn News.

Integrate a news aggregator and notification system to provide users with personalized news updates based on their location and preferences.

Create a user-generated content platform for sharing live updates in the form of images or videos on a map interface.

Implement a user rating and authentication system to ensure the authenticity of user-generated content.

Ensure scalability and reliability of the app to handle a growing user base.

Develop a comprehensive user manual and technical documentation for the app.

Provide ongoing support and maintenance for bug fixes and updates.

Conduct user testing to gather feedback for continuous improvement.

Explore potential partnerships with local authorities and news outlets for data collaboration.

## **C METHODOLOGY:**

To achieve our project objectives, we will employ the following methodology:

### **Software Development:**

Figma Creating a user-centric, Intuitive UI/UX design.

Flutter Cross-platform framework for mobile app development, ensuring accessibility for both Android and iOS users (iOS for the second phase only).

Backed Django (Libraries to be decided)

Python for Web Scraping, Selenium Library.

Firebase Backend and real-time database management.

Trello for Product Management.

GitHub Version control system for effective collaboration among team members

**Location-Based Services:** Google Maps APIs to detect road blockages in real-time, using algorithms to analyze traffic patterns and identify potential issues.

**News Aggregator:** Utilize APIs and web scraping techniques to collect news articles relevant to the user's location and preferences.

**User-Generated Content:** Develop a secure platform for users to post live updates, incorporating geolocation and multimedia capabilities.

**User Authentication:** Implement user registration and authentication with email verification and social media sign-ins.



**Scalability and Reliability:** Employ cloud-based hosting solutions and load balancing to ensure the app can handle increased user demand.

**User Testing:** Conduct beta testing with a diverse group of users to gather feedback and refine the user interface and user experience.

## **D THE PRODUCT:**

The final output of the project will be the "AAGAH" mobile application, encompassing the following components:

**Mobile App:** Available for both Android and iOS platforms.

**Location-Based Road Blockage Detection:** A core feature for real-time navigation assistance.

**Personalized News Aggregator:** Provides relevant news updates to users.

**User-Generated Content Platform:** Allows users to post live updates in the form of images or videos.

**User Authentication System:** Ensures the authenticity of user profiles.

**Comprehensive Documentation:** Includes technical documentation, user manuals, and support guides.

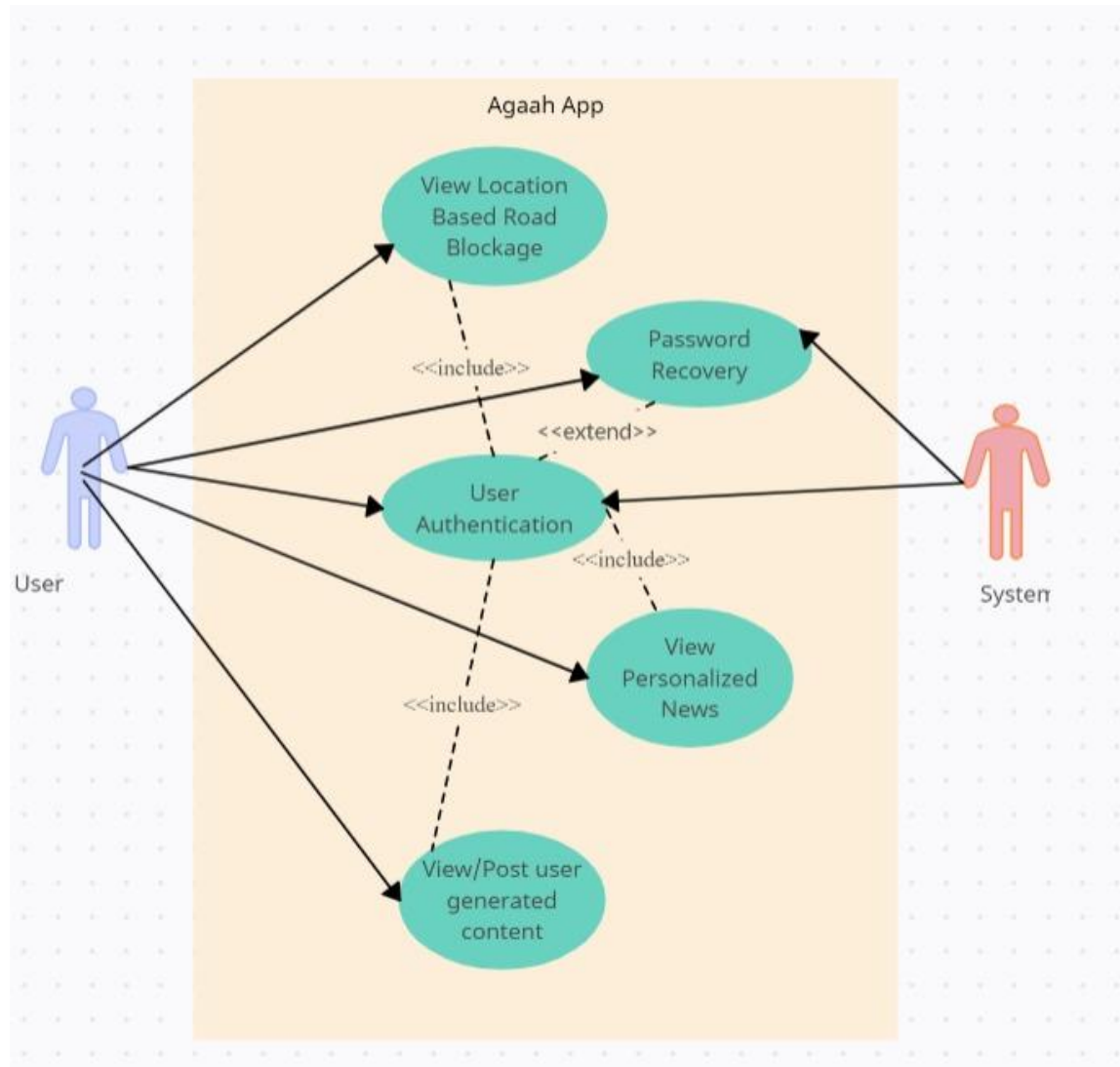
**Support and Maintenance:** Ongoing bug fixes, updates, and user support.

**Potential Partnerships:** Collaboration with local authorities and news outlets.

**Scalable Infrastructure:** Hosted on scalable cloud infrastructure.

**Study Report:** Detailed report summarizing project methodology, findings, and outcomes.

**Use Case Diagram:**



## PROJECT MILESTONES AND DELIVERABLES

### Phase 1: Planning and Design

- Task 1: Define Project Objectives and Scope (1 week)
- Task 2: Initial Research and Idea Exploration (2 weeks)
- Task 3: Project Proposal and Approval (1 week)
- Task 4: Detailed Project Planning (3 weeks)

- Task 5: Create a Requirements Document (2 weeks)
- Task 6: Design User Interface Mockups (2 weeks)
- Task 7: Finalize Project Plan (1 week)

## **Phase 2: Development**

- Task 8: Set Up Development Environment (1 week)
- Task 9: Implement Location-based Alert System (3 months)
- Task 10: Develop Customizable Interface (1 week)
- Task 11: Implement Relevant News Filtering (1 week)
- Task 12: Build Community Sharing Features (1 week)
- Task 13: Develop Interactive Maps (1 week)

## **Phase 3: Testing and Evaluation**

- Task 14: Perform Unit Testing (1 week)
- Task 15: Conduct System Integration Testing (1 week)
- Task 16: User Acceptance Testing and Evaluation (1 week)
- Task 17: Make Necessary Revisions (1 week)

## **Phase 4: Finalization and Documentation**

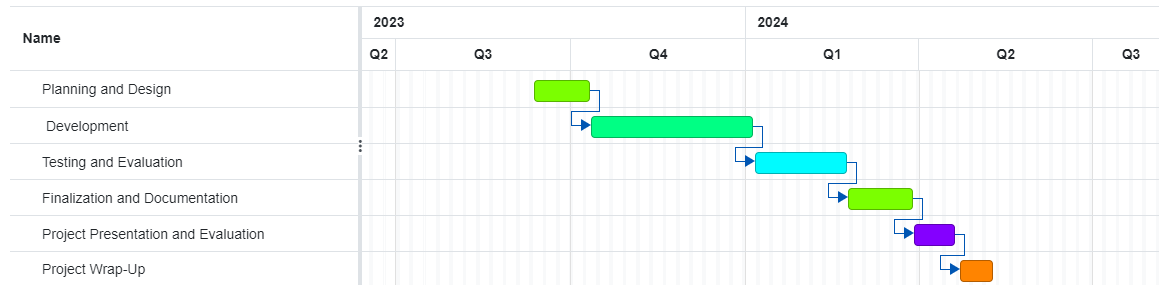
- Task 18: Finalize Code and Prepare for Submission (2 weeks)
- Task 19: Prepare Final Project Report (2 weeks)

## **Phase 5: Project Presentation and Evaluation**

- Task 20: Practice and Prepare for Project Presentation (1 week)
- Task 21: Present the Project to Advisors and Jury (1 week)

## **Phase 6: Project Wrap-Up**

- Task 22: Finalize Documentation and Submit Project (1 week)
- Task 23: Reflect on the Project and Gather Feedback (1 week)



## WORK DIVISION

### 1. Maaz (Front-End Developer + UI/UX Designer):

- UI/UX Design: Create the user interface, including mockups, wireframes, and user experience design.
- Flutter Development: Implement the visual design using Flutter for the front-end structure and styling.
- Mobile App Development: Focus on Flutter development for both iOS and Android platforms.

### 2. Shehzad Khowaja (Back-End Developer):

- Server-Side Logic: Build the server-side logic and functionality using a server-side programming language.
- Database Setup: Set up and manage the database for storing user data, locations, news articles, etc.
- API Integration: Integrate third-party APIs for real-time traffic data, news feeds, and mapping services.
- Authentication and Security: Implement user authentication, data encryption, and security measures on the back end.
- Server Deployment: Deploy the back end on a web server or cloud platform.

### 3. Daniyal Naqvi/Team Lead (Data Scraping and Integration):

- Web Scraping: Develop and maintain scripts for web scraping to gather data such as traffic updates and news articles (using libraries like BeautifulSoup or Puppeteer).
- API Data Integration: Utilize APIs provided by data sources for structured and real-time data retrieval.
- Data Quality Assurance: Ensure the scraped and integrated data is accurate and up-to-date.

### 4. Daniyal Merchant (Mapping and Geolocation + UI/UX ):

- Mapping Services: Integrate Google Maps API to display interactive maps and provide real-time traffic data.

- Geolocation Implementation: Implement geolocation features for tracking user locations and providing location-based alerts.

- Customization Features: Develop user profiles and personalization options related to mapping and geolocation.

#### **5. Laiba Shah/ Technical Lead (Community Engagement and User Experience):**

- Community Engagement Features: Implement features that encourage user-generated content, comments, and social sharing to foster community involvement.

- Notification System: Develop notification systems to alert users about community updates and emergency situations.

- User Customization: Work on features that allow users to personalize alert settings and save frequently visited places.

- Feedback and Iteration: Collect and analyze user feedback for continuous improvement of the user experience.

## COSTING

**Deployment:** To make Aagah accessible to both Android and iOS users, we will need to deploy it on Google's Play Store and Apple's App Store. Google requires a one-time payment of \$25 and Apple a yearly recurring charge of \$100 - totalling to \$125 for deployment.

## REFERENCES

1. <https://www.lifewire.com/best-traffic-apps-4570916#:~:text=Google%20Maps%20is%20one%20of,limited%20to%20cars%20and%20trucks.>
2. [https://faculty.ksu.edu.sa/sites/default/files/is442\\_-\\_assignment.pdf](https://faculty.ksu.edu.sa/sites/default/files/is442_-_assignment.pdf)