 Project for CSE471

# Title of the Project

# Public Transportation Routing System

Requirement Analysis

# Functional Requirements

## User Authentication

* The system will allow people to create an account by an e-mail or phone number.
* The system will not allow people to create more than one account with same e-mail or phone number.
* The system will allow users to log in with their mail addresses and passwords - The system will record users’ data.

## Ticket management

* The system will allow users to buy ticket and will send confirmation mail/text.
* The system will give users an option to cancel ticket within a timeframe.
* The system will give users information about availability of tickets, seat position, ticket price according to bus type and destination, arrival time – departure time.
* The system will also show previously purchased tickets and journey dates. **Payment System**
* The system will allow users to pay through online.
* The system will have different online payment methods such as Bkash, Rocket, Nagad, Credit Cards, Debit Cards as well as Cash on Delivery option.
* The System will verify the users’ account and payment procedures before every purchase.
* The system will have a refund option if the user cancels ticket in the company given timeframe.

## Live Location

* Integrated map with Google map to show routes and location
* User should be able to get current location or specific route’s bus location but no specific bus data may be provided for security issues.
* The system should suggest useful information like nearby stoppages and vehicles.
* The system should be able to show traffic situation on specific routes.
* Every vehicle should have option to share their live location and update seat status. **Campaign/Promotion**
* The system should be able to show promotional notifications or advertisements.
* The system should be able to promote new services, show different offers and take review from users.

# Non-functional Requirements

## 1. Operational

-The system can be run on smartphones/ tablets. It should be available both for Android and iOS.

-The system should be up and running most of the time and the server should not be down for more than a few minutes to avoid the inconvenience of the passengers.

* The payment/ticket price generated by the application must be accurate
* Anyone can easily install the App on devices and the system would run smoothly according to the requirements.
* The software must be easy to use since people of all ages would be using it.

## 2. Performance

* In case of scrolling through the public transportation list there should be a delay of no more than 2 seconds before the next page of the list is displayed otherwise passengers riding experience will be affected.
* 'Cancel Ride' and 'Update Ride' should be made with little delay to avoid any delay.

-The list of available public transportation should have flexible fonts that can be zoomed so as to not over-constrain the eyes.

## 3. Security

* Information transmission should be securely transmitted to Firebase without any changes in information to avoid disturbances in booking and payment.
* Proper and encrypted login authentication for the driver and admin should be available as sensitive information of employees should be protected.

-Only Admin can access to perform add, delete, update operations on the database for transportation list, employees and no other person can modify the data in the Database.

* Drivers can only view the booking of the passengers
* Only admin should have access to passengers’ information.

## 4. Cultural and Political

* Customers should be able to pay bills in multiple currencies, such as, BDT and USD. They can use money sending apps for the payment.
* Personal Information should be protected in compliance with the law of the Country.
* Customers should be provided with detailed information on payment. Tax information should be provided in the system.
* System should in both English and Bangla so that people can choose which on they prefer

## 5. Usability

* The UI should be user friendly, so that people can easily understand the seat mapping.
* The layout should be flexible and adjust automatically as the screen size is reduced.