Software Requirements Specification

for

Cab Rental and Sharing System with GPS Tracking

Version 1.0 approved

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1. Introduction

1.1 Purpose

A lot of students and faculty use cabs in our university. Many students are often willing to share cabs. Faculty also needs cabs to go home. So purpose of our app is to simplify the process of booking and sharing cabs within our university, making cab available and easily assessable and letting user choose the type of cab based on their requirements. By using GPS tracking we are providing user the exact location of the cab they have booked. Cancellation of booking is also available, providing user a medium of communication.

1.2 Product Scope

This android base application is helpful not only to those students who go out with their friend on weekends and visit Railway/Bus station on vacations but also to those faculties and staff who need cab to go home on regular basis. NIIT University can know the distance travelled by each faculty and thus they can pay cabs based on this information. Students can share cabs when lots of students are going to same Station during vacation.

1.3 Intended Audience And Reading Suggestions

This customized software so that the customer can understand easily the website and as the function are not complex and user friendly for the user.

1.4 Document Conventions

The format of this SRS is very simple and main focus will on general topics of our software or a specific kind of interest and issue were user faces the problem.

1.5 References

- http://www.cse.chalmers.se/~feldt/courses/reqeng/examples/srs_example_2010_group2.pdf
- IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.
- https://www.scribd.com/doc/113753725/Cab-Booking-System
- https://www.scribd.com/doc/146558587/GPS-TRACKING-SYSTEM

2. Overall Description

2.1 Product Perspective

This Software product is based on the structure of established cab booking applications. This is being developed so as to replace the traditional cab booking methods, making the process of booking\sharing cabs done through this app in a more automated way. This software requires a cab with GPS facility so that once booked, the cab driver and user both can know where each of their respective current location is. Upon booking software lets cab driver know that their cab has been booked through SMS automation feature and GPS tracking. Similarly User also receives the required information through same features.

2.2 Product Functions

- This app lets the general user to do things in a more automated way.
- It enables user to book\share cabs and track the location of the cab.
- Cab Sharing- This feature searches for two or more users who are going to the same destination. It sends a pop-up notification asking a particular user whether they want to share the cab or not.
- SMS Automation – This feature lets the driver, know that his cab is booked, plus it is also send to the guard to make him aware that this particular driver's cab has been booked.
- GPS Tracking – Through this feature the user keeps track of where the cab is, soon after placing the booking.
- Notification if someone wants to share cab.

2.3 User Class and Characteristics

Faculty –The faculty are frequent users take cabs to travel everyday between home and the university, so firstly they have to call the cab driver then have to wait for the cab to arrive, and on exiting the university they have to sign at the main gate entrance, so for their convenience this app makes the this process less complex and more automated.
They just have to book the cab before 30mins and it will reach at their destination at the right time. Moreover they just have to enter the kms of the car before starting and after ending on the app manually. Thus, they'll be signed out of the university automatically and will get summarized details of the ride they had just ridden. The fares of the ride however, will be predefined according to various locations.

Students – This app most convenient for the students when they are going to or coming back from home or even when they want to go the market or any other place. Students also can book the cab 30 mins before for the cab to arrive in time.

2.4 Operating Environment

Minimum System requirements for Cab booking app –

- Hardware Requirement- GPS Enabled Smartphone.
- Operating System – Android (4.0 or higher)
- GPRS Data plan

2.5 Design and Implementation Constraints

Synchronization – Works with USB (2.0) charging port only, and connects to only Android (4.0 or above).
Internal Memory – The device should have at least 2GB of internal memory with 200mb of free space available
The app requires the device to have at least 1GB of RAM for proper functioning.

No external memory (like SD Card slot) is required as the app will have all of its data on the internal memory.

2.6 Assumption and Dependencies

It is assumed that the app will work with other maps alternatives such as HERE Maps from Microsoft, Apple Maps or any other third party maps. Although Google Maps is **recommended**.

It may also work with devices with 512mb of RAM on Android Kitkat (4.4) or below upto Android 4.0.

2.7 User Documentation

TBD

3. External Interface Requirements

3.1 User Interfaces

- Cab Delay Alert Service.
- Notification is sent to every user if someone want to share a cab.
- Voice messages can be sent easily to guard and the driver simply by pressing and holding the mic icon while speaking and releasing to send.
- In the GPS tracking feature users can simply click on GPS icon and see the position of the cab they have booked.

3.2 Software Interfaces

The voice message sent by user will go to the server and server will sent that message to driver and guard. For GPS feature we will take help of Google maps. If someone wants to share a cab a notification will go to server and server will forward the notification to every other user. The location log will be stored on server until admin chooses to delete it.

3.3 Communication Interfaces

User need to have an email account while making account on this app. Users will be informed about any special offers (if any) or important information through email. Voice message sent by users can be assessed only by guards and drivers. Users and driver must turn on GPS and allow notification for this app.

3.4 Hardware Interfaces

This app is meant for SmartPhone users with working GPRS. For using GPS tracking feature user need to have working GPS in their phone. Voice message feature makes use of voice recording feature of phone. For getting Notification for sharing every user has to allow this app to push notification on their respective phones.

4. System Features

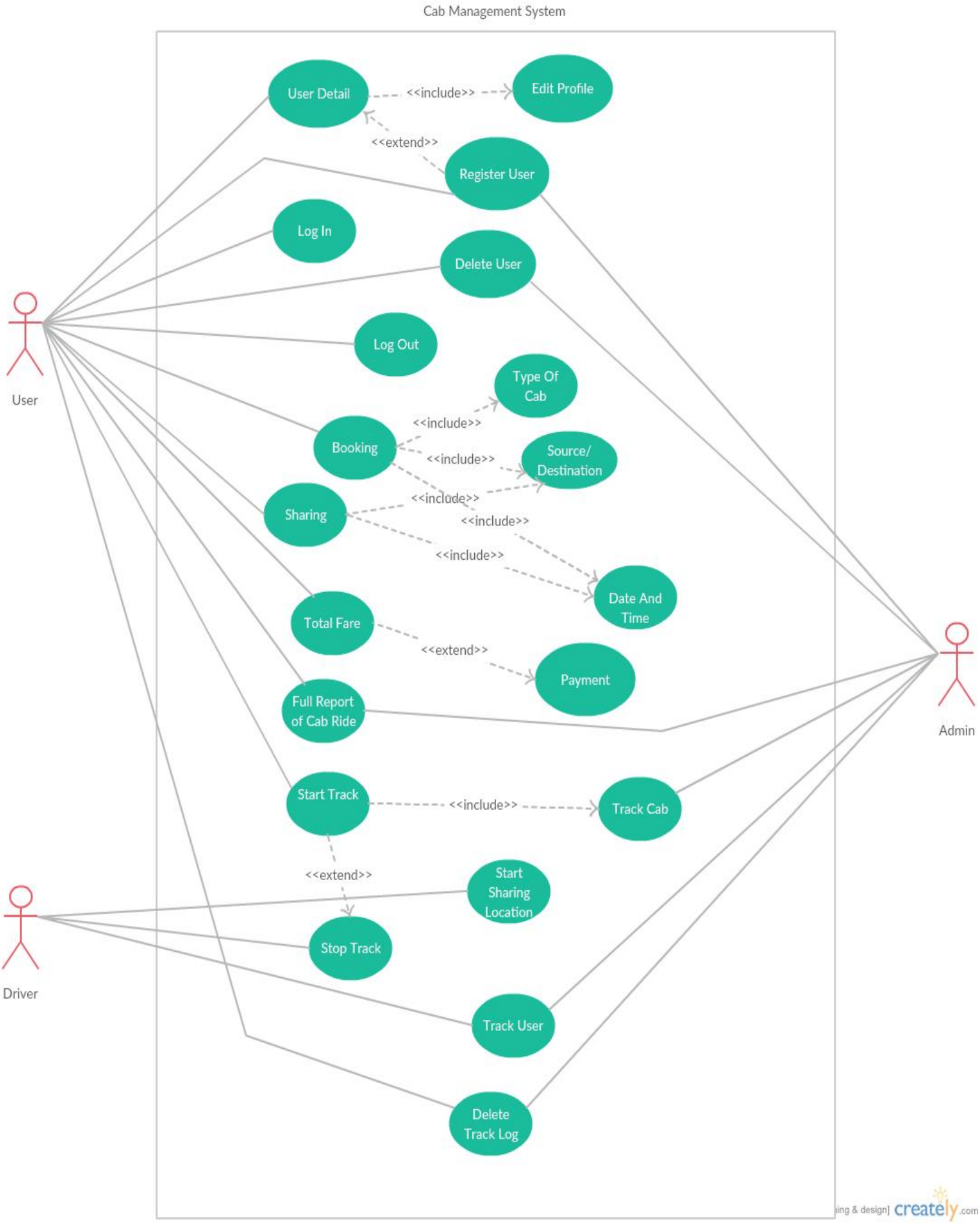
This system should allow user to book or share a cab.

This system should allow user to enter the number of kilometer he has travelled.

The system should provide current location of the cab being tracked at request.

The system should log position of the cab being tracked at a fixed interval of time.

The system should let admin to delete or edit location log.


Cab Management System
User Detail
<<include>>
Edit Profile
<<extend>>
Register User
Log In
Delete User
Log Out
Type Of Cab
<<include>>
Booking
<<include>>
Source/ Destination
<<include>>
Sharing
<<include>>
<<include>>
Date And Time
Total Fare
<<extend>>
Payment
Full Report of Cab Ride
Start Track
<<include>>
Track Cab
<<extend>>
Start Sharing Location
Stop Track
Track User
Delete Track Log
User
Admin
Driver

4.1 Functions:

4.1.1 Cab Details (Id-1):
Customers may view the cab timing at a date their name and their type of booking.

4.1.2 Booking (Id-2):
After checking the number of cab available the customers books a cab or number of cabs according to their requirements.

4.1.3 Sharing (Id-3):
If a user want to share a cab with other students/faculty they can provide their details (time of departure, location, type of cab) and a notification will be sent to other app users. If other want to share they will contact user.

4.1.4 Source/Destination (Id-4):
User can input their destination and they can see their distance from current location.

4.1.5 Date/Time (Id-5):
if user wants to book a cab in advance they have to provide date and time (when they would like their cab to arrive). If instant booking then only time would be necessary.

4.1.6 Payment (Id-6):
After reserving the required cab, the customer pays the amount in advance (optional).

4.1.8 Cancelation (Id-7):
If the customer want to cancel the cab then 10% of the amount per person is deducted if the booking is cancelled before 30 mins of the service time.

4.1.9 Full Report of cab ride (Id-9):
User can give their feedback about their experience with cab. They can also complain to admin about something they didn't like.

4.1.10 User Detail (Id-10):
App user will have to provide their details while making their id.

4.1.11 Total Fare (Id-11):
Total cost for a location can be calculated by providing current location and destination.

4.1.12 Edit Profile (Id-12):
User/driver can edit their profile and update information any time they want.

4.1.13 Login (Id-13):
Every user need to login into their account to start booking/sharing cab. Drivers also need to login.

4.1.14 Register a User (Id-14):
Admin has authority to accept the registration of user. Driver will also have to input user name before providing cab service.

4.1.15 Start Track (Id-15):
This function will run on the device at every fixed interval of time to read the input from GPS receiver and get the location data.

4.1.16 Share Location (Id-16):
User can share their location with guard/driver. Driver can share their location with guard/user.

4.1.17 Delete User (Id-17):
Driver can choose to delete old document of user from their app. Admin has authority to delete user account, from the server.

4.1.18 Log out (Id-18):
User will have option to log out after completion of his task.

4.1.19 Delete Log (Id-19):
Allow admin to delete logged entry.

4.1.20 Stop Track (Id-20):
This function will allow user to stop tracking.

4.1.21 Track Cab (Id-21):
This function will allow user and admin to track cab.

4.1.22 Track User (Id-22):
This function will allow driver and admin to track user.

Requirement Id	Short Name	Description
RQ1	User Profile	**RQ1.1 User Detail:** App user will have to provide their details while making their id. **RQ1.2 Edit Profile:** User/driver can edit their profile and update information any time they want.
RQ2	SignUp Phase	**RQ2.1Register a User:** Admin has authority to accept the registration of user. **RQ2.2Delete User:** Admin has authority to delete user account, from the server.
RQ3	Login Phase	**RQ3.1Login:** Every user need to login into their account to start booking/sharing cab. **RQ3.2Log out:** User will have option to log out after completion of his task.
RQ4	Cab Booking	**RQ4.1Booking:** After checking the number of cab available the customers books a cab according to their requirements. **RQ4.2Cancelation:** If the customer want to cancel the cab then 10% of the amount per person is deducted if the booking is cancelled before 30 mins of the service time. **RQ4.3Date/Time:** If user wants to book a cab, they have to provide date and time. **RQ4.4Cab Details:** Customers may view the cab timing at a date their name and their type of booking.

		RQ4.5Source/Destination: User can input their destination and they can see their distance from current location.
RQ5	Cab Sharing	**RQ5.1Sharing:** If a user want to share a cab with other students/faculty they can provide their details. If other want to share they will contact user. **RQ5.2Date/Time:** If user wants to book a cab, they have to provide date and time. **RQ5.3Cancelation:** If the customer want to cancel the cab then 10% of the amount per person is deducted if the booking is cancelled before 30 mins of the service time. **RQ5.4Source/Destination:** User can input their destination and they can see their distance from current location.
RQ6	Payment Option	**RQ6.1Payment:** After reserving the required cab, the customer pays the amount in advance (optional). **RQ6.1Total Fare:** Total cost for a location can be calculated by providing current location and destination. **RQ6.2Full Report of cab ride:** User can give their feedback about their experience with cab. They can also complain to admin about something they didn't like.
RQ7	Tracking Phase	**RQ7.1Start Track:** This function will run on the device at every fixed interval of time to read the input from GPS receiver and get the location data. **RQ7.2Share Location:** User can share their location with guard/driver. Driver can share their location with guard/user. **RQ7.3Stop Track:** This function will allow user to stop tracking. **RQ7.4 Track Cab:** This function will allow user and admin to track cab. **RQ7.5Track User:** This function will allow driver and admin to track user. **RQ7.6Delete Log:** Allow admin to delete logged entry.

5. Other Non-Functional Requirements

5.1 Performance Requirements

It is available during all 24 hours.

Offered through Air conditioned or non-Air conditioned Cabs.

About 20 cabs run daily.

Types of concerns and complexities:

Special 10 % discount is given to corporate customers for their advance monthly bookings.

5.2 Safety Requirements

Privacy issue may occur. Only user who has booked the car will be able to track it. The user will sent the request to driver for tracking his location.

5.3 Security Requirements

Security attempts to verify protection mechanism built into a system will in fact protect it from improper penetration. Security is provided for each user by giving them login name and password. Security was done, as any other anonymous user can't log in with a user password if the user is already logged in.

5.4 Software Quality Attributes

This app has an additional feature that allow user to enter the no. of kilometers travelled manually, which will help the organization to get exact number and there will be no case of discrepancy.

6. Other Requirements

We need to maintain a database to store all our records.

We need to seek the permission of the respective company to use their GPS services.