Software Requirements Specifications (SRS) –

Swift Rides

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# Introduction

Swift Rides is a Car Pooling System aims to provide a user friendly platform that connects individuals looking to share rides for their daily commutes or occasional trips and collectively contribute to sustainable urban mobility.

The basic idea of Swift Rides is the sharing of car journeys so that more than one person can travel in a car. When people are more and they are using the same vehicle then it can reduce each person's travel costs like fuel costs and the stress of driving. Carpooling is also seen as a more environmentally friendly and helpful way to travel as sharing journeys reduces air pollution, traffic congestion on the roads as well as the need for parking spaces also. It is recommended especially during high pollution periods and high fuel prices. Authorities are encouraging this type of activities.

# Purpose

This document is a System Requirements Specification providing the details for the Swift Rides Carpool application. The document will be used to elaborate the functionality of system. The document also describes the non-functional requirements. When the system is designed it is also considered the design constraints and other factors which will be used for software. This application allows the users to perform tasks like search the car on desired route, date and timing.

This document explains the system requirements and scope for developing Swift Rides (Online Car Pooling System).

Swift Rides system could divide the four main parts, Car-owner part, User part, Admin part and the acknowledgement part.

# Functional Requirements

The Account part of Swift Rides has three modules which are divided 13 processes described as below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** |  | | **Description** | |
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## Car Owner Module

* Car owner is the user of system who wants to create ride.

### Account Creation Process

* Swift Rides compels to create the account before using it. So, Swift Rides should provide the function which makes Car owner creates new account.
* When car owner creates new account, the function demands three information described as below.

1. Login information
2. Contact Details
3. Verification Details

* **The Login information**

The Login information consists of some items described as below.

1. UserID
2. Password
3. First Name
4. Last Name
5. E-mail address
6. Gender.
   * UserID

* The UserID should be unique. If the UserID correspond with not case-sensitive to other which is previously registered, the UserID should not be registered as an account.
  + Password
* The Password has constrains which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

1. Numeric figure (at least one)
2. Capital alphabet (A-Z)(at least one)
3. Small alphabet (a-z)(at least one)
4. Special character (#, $, %, &, etc.) (at least one)
   * Gender

The User Type falls into three categories described as below.

1. Male
2. Female
3. Transgender

* **Contact Details**
* The Contact Detail consists of some items described as below.

1. Permanent Address
2. Contact Phone No

Permanent Address

* Permanent Address should be filled.
* But only the state should be selected from options.
* **Verification Details**
* The Verification Detail consists of some items described as below.

1. Aadhar Card
2. Driving License
3. Car Registration Details

* The Security Question information

The Security Question information is needed when Car Owner lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer
   * Some questions which are difficult to answer for anyone else are prepared in advance.

E.g. which color do you like most?

* + A question should be selected from options by the Car Owner, and the Answer is registered by the Car Owner.

### Login Process

* Swift Rides always compels Car Owner authentication before using itself except when a new account is successfully created.
* The user authentication demands UserID and Password. The UserID and the Password should be checked.
* The Car Owner account should alive for so long as the duration decided by Admin.

### Forgot Password Process

* When system user lost their Password, the recovery method should be provided by Swift Rides.

The recovery method is described as below.

* + First, system user enters their UserID for Swift Rides.
  + Next, Swift Rides demands the Answer which has been registered since when the Account was created.
  + Only when the Answer is correct, Owner get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Car-owner could get the Car-owner authentication using the new password.
  + Then, the Car-owner had better change the new password manually.
* If the Answer is not correct, otherwise, the correct Answer is demanded for user again.
  + In that case, Of course, Car-owner couldn’t get the new password.
* When Car-owner wants to change their Password, the measure should be provided by Swift Rides.
* Only when the current password is correct, Car-owner could change their Password.
* When the current password is changed into new password, Online Intercity Car Pooling System compels user authentication again.

### Update Account Process

* Swift Rides System should provide the function which makes the account updated for Car-owner.
* The information Car-owner could update is described below.

1. Login information
2. User information
3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer

### 3.1.5 Publish ride

* Publish ride requirements are described as below.

1. Information of ride.
2. price
3. Seats available.
4. Photos.

### 3.1.6 Update ride information

* After publishing the ride the Car-owner can only update following contents.

1. About time, date and place.
2. About seat availability.
3. Cancelation of ride before 12 hours.

### 3.1.7 Delete ride

• After publishing ride if Car-owner have some emergency or wanted to not go their destination, he will update ride information before 12 hours then he can delete the ride.

## Bus Module

* Bus is provided by the Swift Rides system to provide transportation to the user to book the bus for their trips.

### Provide Bus

* + - 1. Bus details are provided by admin

1.Bus Id

2. Bus Number

3. Seat Capacity

2. Bus Driver details are provided by admin

1. Bus Driver Name

2. Driving License

3. Bus Number

4.Aadhar Number

5.Experience

### Login Process

-Login of admin is same as 3.1.2

### 3.2.3 Bus Booking Process

* Swift Rides compels to create the account before using it. So, Swift Rides should provide the function which makes Bus owner provides bus Details.

1. Bus Id

2. Bus Number

3. Bus Driver

4. Capacity of bus

5. Trip Locations

6. Starting Location

7. Price

* + Bus Id
* The bus Id should be unique.
  + Bus Number and Bus Driver
* Bus Number and Bus driver being provided to register or book the bus for trip.
* Bus capacity is also provided.
* Trip Location can be selected by user.
* Starting Location of trip should be selected by user
* **The Security Question information**

The Security Question information is needed when User lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer

E.g. which color do you like most?

* + A question should be selected from options by the admin, and the Answer is registered by the admin.

### Update Account Process

* Swift Rides System should provide the function which makes the account updated for Admin, user.
* The information Admin, user could update is described below.
  + - 1. Login information
      2. User information
      3. Security Question Information
* **The Login information**

The updatable items as described below.

* + - 1. First Name
      2. Last Name
      3. E-mail address
* **The User information**

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address

* **The Security Question information**

The updatable items as described below.

1. Selected Question
2. Answer

### 3.2.4 Update Booking information

After booking the ride the Admin can only update following contents.

1. About time, date and place.

2. About seat availability.

3. Cancelation of ride before 12 hours.

After Booking User get booking updates and cancellation.

### 3.2.5 Delete Booking

• After booking bus if user have some emergency or wanted to not go their destination, he will cancel booking within 12 hours otherwise he will be charged some amount after 12 hours.

#### User Module

### Account Creation Process

* Swift Rides compels to create the account before using it. So It should provide the function which makes user creates new account.
* When user creates new account, the function demands four information described as below.

1. Login information

2. Contact Details

3. Security Question Information

4. Payment information.

* **The Login information**

The Login information consists of some items described as below.

1. User ID

2. Password

3. First Name

4. Last Name

5. E-mail address

6. Gender

* + UserID
* The UserID should be unique. If the UserID correspond with not case-sensitive to other which is previously registered, the UserID should not be registered as an account.
  + Password
* The Password has constrains which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

1.Numeric figure (at least one)

2.Capital alphabet (A-Z)(at least one)

3.Small alphabet (a-z)(at least one)

4.Special character (#, $, %, &, etc.) (at least one)

* + Gender

The User Type falls into three categories described as below

1. Male

2. Female

3. Transgender

* **Contact Details**
* The Contact Detail consists of some items described as below

1. Permanent Address

2. Contact Phone No

* + Permanent Address
* Permanent Address should be filled.
* But only the state and city should be selected from options.
* **The Security Question information**

The Security Question information is needed when User lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer

E.g. which color do you like most?

* + A question should be selected from options by the user, and the Answer is registered by the user.

### Login Process

* Swift Rides always compels authentication before using itself except when a new account is successfully created.
* The user authentication demands UserID and Password. The UserID and the Password should be checked in three ways.
  + First, The UserID and the Password should be existed and correct.
* If The UserID and the Password are not equal to what the user has registered, the user authentication cannot be provided.
* The Administrator can decide whether the UserID is available or suspended.
* The User account should alive for so long as the duration decided by Admin.
* The “User Home” provides the some items described as below.

1. Logout
2. Update Account
3. Change Password
4. Search Ride
5. Book ride
6. Update Ride Information
7. Delete Ride

### Forgot Password Process

* When User lost their Password, the recovery method should be provided by Swift Rides.

The recovery method is described as below.

* + First, User enters their UserID.
  + Next, Swift Rides demands the Answer which has been registered since when the Account was created.
  + Only when the Answer is correct, User get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by Swift Rides.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The User could get the user authentication using the new password.
  + Then, the User had better change the new password manually.
* If the Answer is not correct, otherwise, the correct Answer is demanded for User again.
  + In that case, Of course, User couldn’t get the new password.

### Change Password Process

* When User wants to change their Password, the measure should be provided by Swift Rides.
* Therefore it should provide the function which is available after getting the User authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, User could change their Password.
* When the current password is changed into new password, Swift Rides compels User authentication again.

### Update Account Process

* Swift Rides should provide the function which makes the account updated for User.
* The information user could update is described below.

1. Login information

2. Contact information

3. Security Question Information

* **The Login information**

The updatable items as described below.

First Name

Last Name

Email Address

* **The Contact information**

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address

* **The Security Question information**

The updatable items as described below.

1. Selected Question
2. Answer

#### Search Ride

• Search conditions are described as below.

1. Destination City
2. Starting Ride City
3. Price Range

• As the result of searching Requirements, User could see the list of rides which are available.

1. Car Owner Name

2. Price

3. Destination city

4. Ride Starting Location

5. Available Seats

#### Book Ride

• To book the ride followings are the condition

1. Destination city

2. Price range

3. No. of seats

4. Other details

**3.3.8 Payment Process**

• In payment process system following are the conditions

1. If somehow ride is not fulfil.

2. If user is not satisfied with ride.

**3.3.9 Cancel Ride**

• User can cancel the ride in following condition

1. If the Car Owner does not fulfil the requirement.

2. If price goes out of his budget.

Browse existing Price per seat.

• User could see the information of existing Rides**.**

#### Admin Module

**•** Administratorshould be responsible for following activities**,**

### Login Process

* Swift Rides always compels user authentication before using itself except when a new account is successfully created.
* The user authentication demands UserID and Password. The UserID and the Password should be checked in.
  + The UserID and the Password should be existed and correct.
* If The UserID and the Password are not equal to what the admin has registered, the Admin authentication cannot be provided.
  + Finally, UserID should be available.
* The Administrator can decide whether the UserID is available or suspended – Refer to SRS of the Admin part.
* If user is rejected, user authentication is not provided for system user.
* The Admin account should alive for so long as the duration decided by Admin.

### Forgot Password Process

* When Admin lost their Password, the recovery method should be provided by Swift Rides.

The recovery method is described as below.

* + First, Admin enters their UserID.
  + He will enter the E-mail id since when the Account was created.
  + Only when the E-mail Id is correct, Admin get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by Swift Rides.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Admin could get the Admin authentication using the new password.
  + Then, the Admin had better change the new password manually.

### Change Password Process

* When Admin wants to change his Password, the measure should be provided Swift Rides.
* Therefore, Swift Rides should provide the function which is available after getting the Admin authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, Admin could change his Password.
* When the current password is changed into new password, Swift Rides compels user authentication again.

### Update Account Process

* Swift Rides should provide the function which makes the account updated for Admin.
* The information Admin could update is described below.

1. Login information
2. User information
3. Security Question Information

* **The Login information**

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address

* **The User information**

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address

* **The Security Question information**

The updatable items as described below.

1. Selected Question
2. Answer

#### Record Generation

• Admin should able to see all the records from any users.

• Daily report of enrolment to admin.

• Monthly report of enrolment as per the states to admin.

#### Accounts Management

• Admin should able to manage all the accounts with following activities,

1. Enable accounts

2. Disable accounts

#### Message Acknowledgement Module

• In following conditions acknowledgement to be send

1. After completion of successful registration.
2. After every successful transaction (buy, sale).
3. Now the messages are being sent by using email but in future we can have mobile sms.

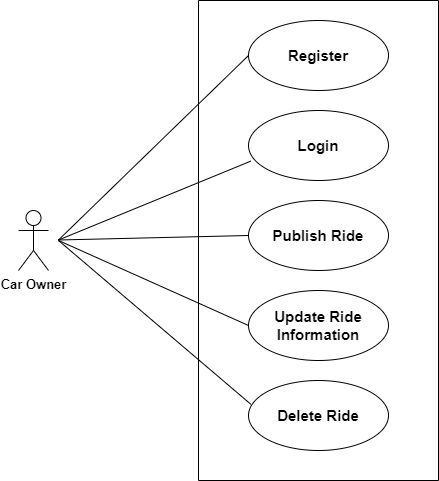
#### 2.5 Use Case Diagram

**Admin:**

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*Fig. Use case diagram for admin*

1. Admin can handle following use cases:
2. Login
3. Report Generation
4. Controls account

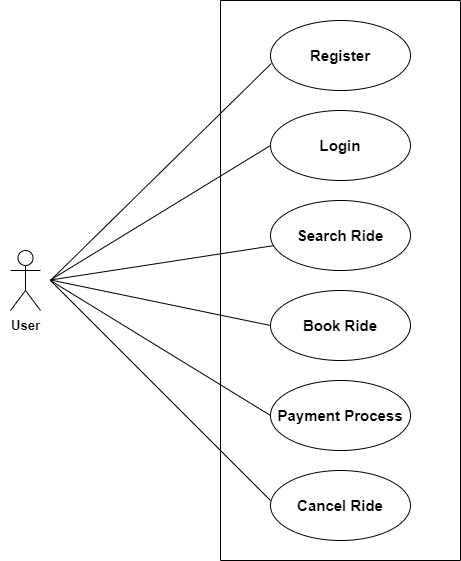
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*Fig. Use case diagram for Car Owner*

**Car Owner:**

1. Owner can handle following use cases:
2. Register
3. Login
4. Publish Ride
5. Update Ride Information
6. Delete Ride

**User:**

****

*Fig. Use case diagram for User*

1. User can handle following use cases:
2. Register
3. Login
4. Search Ride
5. Book Ride
6. Payment Process
7. Cancel Ride

**Non-functional Requirements**-

**Performance Requirements**

A proper internet connection is needed for the users using this website and the user should be user friendly with computer and the user interface of the website should be easy.

**Safety Requirements**

If some unauthorized person get access to the site he can damage the site, therefore, the system shouldn’t allow the user to access, until he provides correct username and password.

**Security Requirements**

•Only administrator has the access to update and delete the database.

•Guest user can only search for carpool to join or delete a car pool he should be registered.

•The system shouldn’t allow the user to access, until he provides correct username and password.

•If the user request for a new password the password will be send to his email id.

**Software Quality Attributes**

•A healthy internet connection having a good speed is to be use to get a better response time.

• This website site is easy to use.

•The website is very flexible so that the user can update the car pools information anytime.

•In the website , any operation on the stored information, triggered by the

User shall complete in minimum time.

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**Business Rules**

 The user who created carpool has complete access over the car pool and on the members joining the carpool. He has the contact detail of all the persons who often join his carpool. In case the website is crashed he can directly contact with them.

**Other Requirements-**

•Licensing Requirements

-The usage of CAR-POOL MANAGEMENT is restricted to only who has the license.

•The system will try to retain the integrity of data

- Access Reliability

- The system shall provide 100% access reliability.