**Chapter No 08  
 Testing**

**8. Testing**

Testing is the process of checking if the Road Sync app is working properly. It helps in finding and fixing any bugs or issues that might affect the app’s performance. By testing, the speed and overall quality of the app can be improved. This makes sure that all users, like travelers, fleet managers, and administrators, have a smooth and easy experience.

**8.1 Test Cases**

Test cases are simple situations or conditions made to check if a software or app is working properly. They are used to give input to the system and see if the output is what we expect. This helps developers and testers know if the software meets the needed requirements. By running these test cases, they can make sure the software works well, gives a good experience to users, and helps find and fix any problems.

**User Module Testing**

|  |  |  |  |
| --- | --- | --- | --- |
| # | **Test Case** | **Description** | **Status** |
| 1 | Sign up | Verify user registration and login | Pass |
| 2 | Sign in | Verify user registration and login | Pass |
| 3 | forgot password | User can reset their password using the “Forget Password” option. | Pass |
| 4 | Trip Creation | User can create a new trip with details | Pass |
| 5 | Join Trip with Code | Another user can join using the invite code | Pass |
| 6 | Real-time Location Sharing | User location updates in real-time on the map | Pass |
| 7 | Geofencing Alerts | Users alerted when leaving 3km radius | Pass |
| 8 | Send Notification | Users can send alerts to other trip members | Pass |
| 9 | Offline Location Storage | Location stored when offline and syncs later | Pass |
| 10 | Emergency Alert | User can send SOS alert | Pass |
| 11 | Trip History | User can see past trips and route data | Pass |
| 12 | View profile | User can view their personal profile details. | Pass |
| 13 | Update profile | User can update their profile info like name or phone number. | Pass |
| 14 | Change password | Logged-in user can change their current password securely. | Pass |
| 15 | Delete account | User can permanently delete their account after confirmation. | Pass |
| 16 | Admin login | Admin can securely login to the admin dashboard. | Pass |
| 17 | User management | Admin can view, edit, or remove registered users. | Pass |
| 18 | Trip monitoring | Admin views all trips with details, and can logout after reviewing. | Pass |
| 19 | Logout | Proper session termination | Pass |

**Admin Panel Testing**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Test Case** | **Description** | **Status** |
| 1 | Admin Login | Secure access to admin dashboard | Pass |
| 2 | User Management | Admin can view and manage registered users | Pass |
| 3 | Trip Monitoring | Admin can view ongoing trip | Pass |
| 4 | View Trip | View trip details | Pass |

**8.2 Detailed Test Cases**

|  |
| --- |
| Test case ID: Sign Up\_1 Test **Designed by:**  Test Priority (Low/Medium/High): High Test **Designed Date:**  Module Name: Registration screen **Test Executed by**:  Test Title: Get registered with Sign Up detail **Test Execution Date**:  **Description:** This feature allows users to create a new account with the Application. In order to create a new account, the user has to provide required information. |

|  |
| --- |
| **Pre-Condition**:  User has no existing account or has registered. |

**Table 8.1singup**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open app and navigate to registration screen | - | Registration screen displayed | Displayed | Pass |
| 2 | Enter valid user details | Name, Email, Password | Details accepted | Accepted | Pass |
| 3 | Click register | - | Account created and user logged in | Success | Pass |
| 4 | Logout | - | User logged out | Success | Pass |
| 5 | Login with created credentials | Email, Password | User logged in successfully | Success | Pass |

|  |
| --- |
| **Post-Condition:**  User account created and accessible. |

**8.1.2 SignIn**

|  |
| --- |
| **In Test case ID:** SignIn\_2 **Test Designed by**:  **Test Priority** (Low/Medium/High): High **Test Designed date:**  **Module Name:** Sign in **Test Executed by**:  **Test Title:** Sign in **Test Execution date**:  **Description:** This feature allows users to create a new account with the Application. In order to create a new account, the user has to provide required information. |

|  |
| --- |
| **Pre-Condition:**  A user must not have an existing account. |

**Table: 8.2singUp**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Steps** | **Test steps** | **Test data** | **Expected Result** | **Actual Result** | **Status** |
| **1** | Navigate to registration page |  | User will be registered successfully | User registered successfully and moved to dashboard | Pass |
| **2** | Provide First Name | Test |  |  |  |
| **3** | Provide Last Name | User |  |  |  |
| **4** | Provide Phone number | 03136327745 |  |  |  |
| **5** | Provide Email | Ayeshabibi7680@gmail.  Com |  |  |  |
| **6** | Provide Password | 123456 |  |  |  |
| **7** | Provide confirm password | 123456 |  |  |  |
| **8** | Click to Sign up button |  | User must be moved on dashboard |  | Pass |

|  |
| --- |
| **Post-conditions:**  A Users account is created and they will be able to access all functionalities provided by the Application. |

**8.1.3 forgot password**

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| --- |
| **Test case ID**: Forgot password\_3 **Test Designed by:**  **Test Priority** (Low/Medium/High): Medium **Test Designed date:**  **Module Name:** Forgot password screen **Test Executed by:**  **Test Title**: Forgot password screen **Test Execution date:**  **Description:** Allow user to reset his/her password |

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| --- |
| **Pre-Condition:**  User must be logged in and have a good internet connection. |

**Table: 8.3 forgot password**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open login screen | - | Login screen displayed | Displayed | Pass |
| 2 | Click on “Forget Password” | - | Password reset screen displayed | Displayed | Pass |
| 3 | Enter registered email | user@example.com | Email accepted | Accepted | Pass |
| 4 | Submit reset request | - | Password reset email sent | Sent | Pass |
| 5 | Check inbox | - | Reset link received | Received | Pass |
| 6 | Reset password from email link | New password | Password updated | Updated | Pass |
| 7 | Login with new password | New credentials | Login successful | Success | Pass |

|  |
| --- |
| **Post-Condition:**  User is able to reset and login with new password. |

**8.1 .4 trip creation**

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| --- |
| **TC\_02** - Trip Creation **Test Designed By: [Your Name]**  **Test Case ID:** TC\_02 **Test Execution Date: [Date]**  **Module**: Trip Creation  **Test Priority**: High  **Description:** User can create a new trip with correct details. |

|  |
| --- |
| **Pre-Condition:**  User must be logged in and connected to the internet. |

**Table : 8.4 trip creation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Navigate to trip creation screen | - | Trip creation screen opened | Opened | Pass |
| 2 | Enter trip name | Weekend Ride | Trip name accepted | Accepted | Pass |
| 3 | Select start and end locations | Location A, Location B | Locations set correctly | Set | Pass |
| 4 | Click create | - | Trip created and user added as admin | Created | Pass |

|  |
| --- |
| **Post-Condition:**  **Trip visible in user dashboard and Firebase.** |

**8.1.5 invite & join trip**

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| --- |
| TC\_03 - Invite & Join Trip **Test Designed By: [Your Name]**  **Test Case ID:** TC\_03 **Test Execution Date: [Date]**  **Module:** Invite & Join Trip  **Test Priority**: High  **Description**: Users can join an existing trip using an invite code. |

|  |
| --- |
| **Pre-Condition:**  User must be logged in and have a valid invite code |

**Table: 8.5 invite & join trip**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open app and navigate to join trip screen | - | Join trip screen opened | Opened | Pass |
| 2 | Enter valid invite code | ABC123 | Code accepted | Accepted | Pass |
| 3 | Click join | - | User added to trip | Added | Pass |

|  |
| --- |
| **Post-Condition:**  User included in trip group and location sharing enabled. |

**8.1.6 real -time location sharing**

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| --- |
| **TC\_04 -** Real-time Location Sharing **Test Designed By: [Your Name]**  **Test Case ID:** TC\_04 **Test Execution Date: [Date]**  **Module:** Real-time Location Sharing  **Test Priority:** High  **Description:** User location updates in real-time on the trip map |

|  |
| --- |
| **Pre-Condition:**  User is part of an active trip and location permissions are granted. |

**Table: 8.6 real \_time location sharing**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Start trip and enable location sharing | - | Location sharing enabled | Enabled | Pass |
| 2 | Move device physically | - | Location marker moves on map | Moves | Pass |
| 3 | Verify other users' locations update | - | Locations visible on map | Visible | Pass |

|  |
| --- |
| **Post-Condition:**  Real-time locations synced and displayed. |

**8.1.7 Geofencing Alerts**

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| --- |
| **TC\_05 -** Geofencing Alerts **Test Designed By: [Your Name]**  **Test Case ID:** TC\_05 **Test Execution Date: [Date]**  **Module:** Geofencing Alerts  **Test Priority**: Medium  **Description:** Users get alerted when leaving the 3km trip radius. |

|  |
| --- |
| **Pre-Condition:**  User must be part of an active trip with geofencing enabled. |

**Table: 8.7 geafencing alerts**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Start trip with geofencing enabled | - | Geofence active | Active | Pass |
| 2 | Move device outside 3km radius | - | Alert notification received | Received | Pass |
| 3 | Return inside radius | - | Alert cleared | Cleared | Pass |

|  |
| --- |
| **Post-Condition:**  Geofence alerts function correctly. |

**8.1.8 send notification**

|  |
| --- |
| **TC\_06 -** Send Notification **Test Designed By:** [Your Name]  **Test Case ID:** TC\_06 test execution date:  **Module**: Send Notification  **Test Priority:** Medium  **Description:** Users can send notifications to other trip members. |

|  |
| --- |
| **Pre-Condition:**  User must be in an active trip with network access. |

**Table: 8.8send notification**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open notification panel | - | Notification panel displayed | Displayed | Pass |
| 2 | Compose message | Meet at gas station | Message ready | Ready | Pass |
| 3 | Send notification | - | Notification received by members | Received | Pass |

|  |
| --- |
| **Post-Condition:**  Notifications delivered successfully. |

**8.1.9 Offline Location Storage**

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| --- |
| **TC\_07 -** Offline Location Storage **Test Designed By:** [Your Name]  **Test Case ID:** TC\_07 **Test Execution Date:** [Date]  **Module:** Offline Location Storage  **Test Priority**: Medium  **Description:** Location data stored offline and synced when online. |

|  |
| --- |
| **Pre-Condition:**  User has network interruption during trip. |

**Table:8.9 Offline Location Storage**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Start trip and enable offline mode | - | Offline mode active | Active | Pass |
| 2 | Move device while offline | - | Location data stored locally | Stored | Pass |
| 3 | Reconnect to network | - | Stored data synced to server | Synced | Pass |

|  |
| --- |
| **Post-Condition:**  Offline data synced correctly. |

**8.1.10 Emergency Alert**

|  |
| --- |
| **TC\_08 -** Emergency Alert **Test Designed By:** [Your Name]  **Test Case ID**: TC\_08 **Test Execution Date:** [Date]  **Module:** Emergency Alert  **Test Priority:** High  **Description:** Users can send emergency SOS alerts to all trip members. |

|  |
| --- |
| **Pre-Condition:**  User is part of active trip. |

**Table : 8.10 Emergency Alert**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open emergency alert screen | - | Screen displayed | Displayed | Pass |
| 2 | Send SOS alert | - | Alert sent to trip members | Sent | Pass |
| 3 | Members receive and acknowledge alert | - | Alert acknowledged | Acknowledged | Pass |

|  |
| --- |
| **Post-Condition:**  Emergency alert feature works as expected. |

**8.1.11 Trip History**

|  |
| --- |
| **TC\_09** - Trip History **Test Designed By**: [Your Name]  **Test Case ID:** TC\_09 **Test Execution Date**: [Date]  **Module**: Trip History  **Test Priority**: Low  **Description:** Users can view past trips and route analytics. |

|  |
| --- |
| **Pre-Condition:**  User has completed at least one trip. |

**Table:8.11 trip history**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open trip history screen | - | History screen displayed | Displayed | Pass |
| 2 | Select past trip | - | Trip details shown | Shown | Pass |
| 3 | View analytics and reports | - | Data visible | Visible | Pass |

|  |
| --- |
| **Post-Condition:**  Trip history displayed accurately. |

**8.1.12 admin login**

|  |
| --- |
| **TC\_11 -** Admin Login Test Designed By: [Your Name] **Case ID**: TC\_11 Test Execution Date: [Date]  **Module:** Admin Login  **Test Priority:** High  **Description:** Admin can securely login to the admin dashboard. |

|  |
| --- |
| **Pre-Condition:**  Admin has valid credentials. |

**Table: 8.12 admin login**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open admin login screen | - | Login screen displayed | Displayed | Pass |
| 2 | Enter valid admin credentials | Admin user, password | Credentials accepted | Accepted | Pass |
| 3 | Access dashboard | - | Dashboard displayed | Displayed | Pass |

|  |
| --- |
| **Post-Condition:**  Admin logged in successfully. |

**8.1.13 User Management**

|  |
| --- |
| **TC\_12** - User Management **Test Designed By: [Your Name]**  **Test Case ID**: TC\_12  **Test Execution Date: [Date]**  Module: User Management  Test Priority: Medium  **Description**: Admin can view, edit, or remove registered users. |

|  |
| --- |
| **Pre-Condition:**  Admin is logged in. |

**Table:8.13 user management**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open user management panel | - | User list displayed | Displayed | Pass |
| 2 | Select user | - | User details opened | Opened | Pass |
| 3 | Change user active and inactive status | - | Changes saved | Saved/Changed | Pass |

|  |
| --- |
| **Post-Condition:**  User data managed successfully. |

**8.1.14 trip monitoring**

|  |
| --- |
| TC\_13 - Trip Monitoring Test Designed By: [Your Name  Test Case ID: TC\_13 Test Execution Date: [Date]  Module: Trip Monitoring  Test Priority: Medium  **Description:** Admin views all trips with details, and can logout after reviewing. |

|  |
| --- |
| **Pre-Condition:**  Admin is logged in. |

**Table: 8.14trip monitoring**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Access trip dashboard | - | Dashboard opened | Opened | Pass |
| 2 | Select a trip from the list | - | Trip details shown | Displayed | Pass |
| 3 | Admin can Logout from admin panel | - | Admin successfully logged out | Logged out | Pass |

|  |
| --- |
| **Post-Condition:**  Admin has viewed trips and logged out successfully. |

**8.1.15 View Profile**

|  |
| --- |
| **Test case ID**: View Profile\_14 **Test Designed by:**  **Test Priority** (Low/Medium/High): Medium **Test Designed date:**  **Module Name**: View Profile **Test Executed by:**  **Test Title:** View Profile **Test Execution date:**  **Description:** the view profile feature is to verify that users can effectively access, review, manage, and update their personal profile information. |

|  |
| --- |
| **Pre-Condition:**  The user must be logged into their account to access the view profile feature. |

**Table: 8.15 view profile**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Login and open side menu/profile | - | Profile screen displayed | Displayed | Pass |
| 2 | Verify displayed data | Name, Email, Phone | Matches stored data | Matches | Pass |

|  |
| --- |
| **Post-Condition:**  Profile data shown correctly to the user. |

**8.1.16 Edit Profile**

|  |
| --- |
| **Test Case ID:** Edit Profile\_15 **Test Designed by:**  **Test Priority** (Low/Medium/High): High **Test Designed Date:**  **Module Name:** Edit Profile **Test Executed by:**  **Test Title:** Edit Profile **Test Execution Date:**  **Description:** Test the Edit Profile Screen |

|  |
| --- |
| **Pre-conditions:**  User must update profile /edit to the Application. |

**Table 8.15 edit profile**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open profile screen | - | Profile displayed | Displayed | Pass |
| 2 | Click on “Edit” | - | Fields become editable | Editable | Pass |
| 3 | Update name and phone |  | Input accepted | Accepted | Pass |
| 4 | Click “Save” | - | Data saved and updated | Updated | Pass |
| 5 | Reopen profile screen | - | Updated info visible | Updated | Pass |

|  |
| --- |
| **Post-Condition:**  User profile info updated in database and reflected in UI. |

**8.1.17 Change Password**

|  |
| --- |
| **Test Case ID**: Change password \_16 **Test Designed by:**  **Test Priority** (Low/Medium/High): High **Test Designed Date:**  **Module Name**: Change Password **Test Executed by:**  **Test Title:** Change Password **Test Execution Date:**  **Description:** Test the Change Password Screen |

|  |
| --- |
| **Pre-conditions:**  User must login to the Application |

**Table: 8.17 change password**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Open profile or settings screen | - | Settings/profile screen displayed | Displayed | Pass |
| 2 | Click on “Change Password” | - | Change password form displayed | Displayed | Pass |
| 3 | Enter current password | oldpass123 | Current password validated | Validated | Pass |
| 4 | Enter new password | newpass456 | New password accepted | Accepted | Pass |
| 5 | Confirm new password | newpass456 | Passwords match | Matched | Pass |
| 6 | Click “Save/Change” | - | Password updated | Updated | Pass |
| 7 | Re-login with new password | newpass456 | Login successful | Success | Pass |

|  |
| --- |
| **Post-Condition:**  User password updated and verified with new login. |

**8.1.18 Delete Account**

|  |
| --- |
| **Test case ID**: delete account\_17 **Test Designed by:**  **Test Priority** (Low/Medium/High): High **Test Designed date:**  **Module Name:** delete account **Test Executed by:**  **Test Title**: delete account **Test Execution date:**  **Description**: The logout section provides a way for the users to successfully sign out from the App. |

|  |
| --- |
| **Pre-Condition:**  The user must be currently logged in to the system |

**Table 8.18 delete account**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Navigate to profile/settings | - | Profile/settings screen displayed | Displayed | Pass |
| 2 | Click “Delete Account” | - | Warning popup displayed | Displayed | Pass |
| 3 | Confirm deletion | Yes, Delete | User data removed | Removed | Pass |
| 4 | Redirect to login/signup screen | - | Redirect successful | Redirected | Pass |
| 5 | Attempt login with deleted email | Deleted user credentials | Error: “Account not found” | Error shown | Pass |

|  |
| --- |
| **Post-Condition:**  User account deleted from database and access revoked. |

**8.1.19 logout**

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| --- |
| **TC\_10 –** Logout **Test Designed By**: [Your Name]  **Test Case ID**: TC\_10 **Test Execution Date**: [Date]  **Module**: Logout  **Test Priority**: High  **Description:** Users can successfully log out of the application |

|  |
| --- |
| **Pre-Condition:**  User is logged in. |

**Table: 8.19logout**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Test Step** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Navigate to logout option | - | Logout option visible | Visible | Pass |
| 2 | Click logout | - | User session terminated | Terminated | Pass |
| 3 | Return to login screen | - | Login screen displayed | Displayed | Pass |

|  |
| --- |
| **Post-Condition:**  User logged out successfully. |