

**NANYANG
TECHNOLOGICAL
UNIVERSITY**

SINGAPORE

SC2006 – Software Engineering

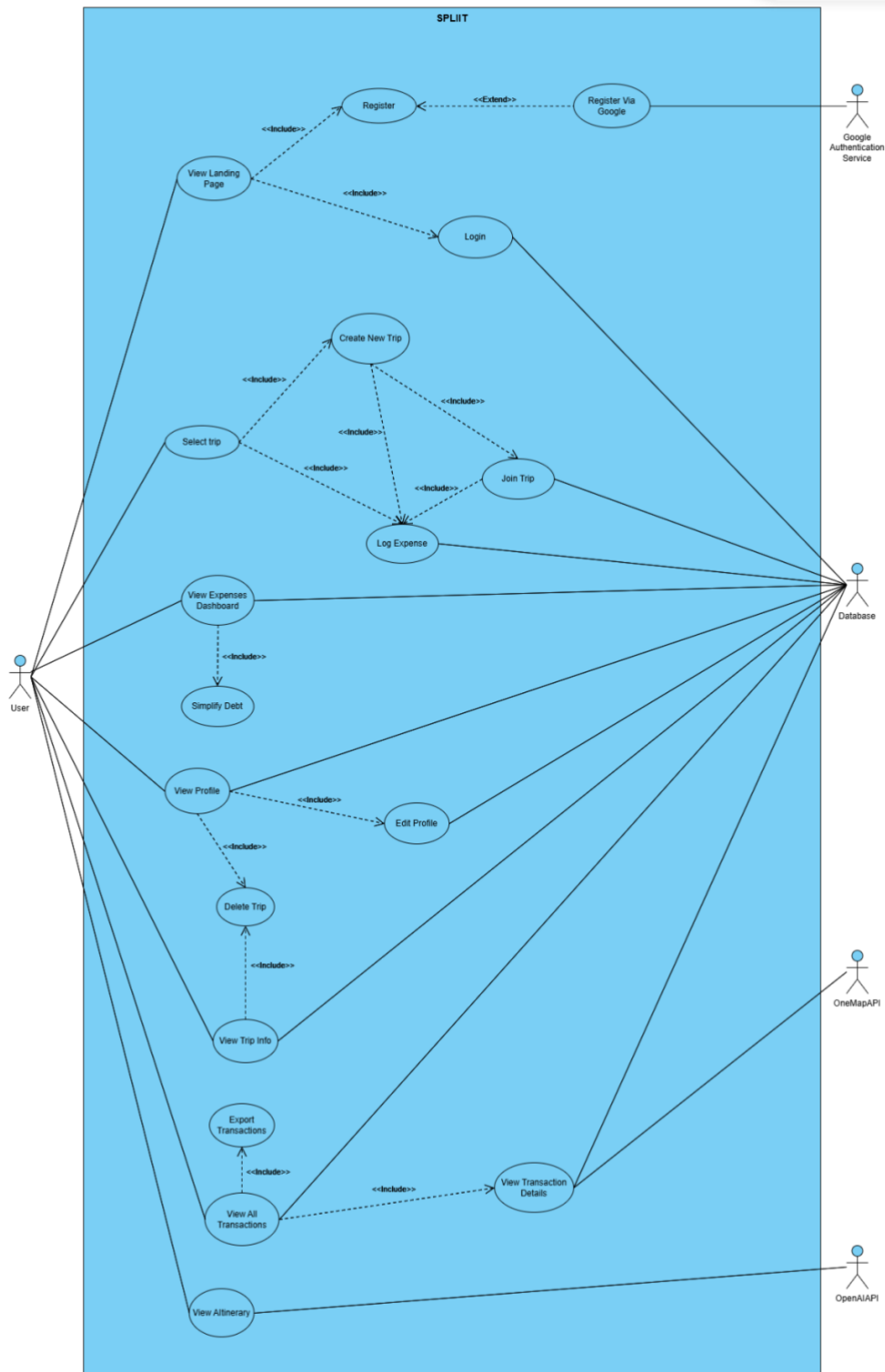
Lab 2: Requirements Analysis

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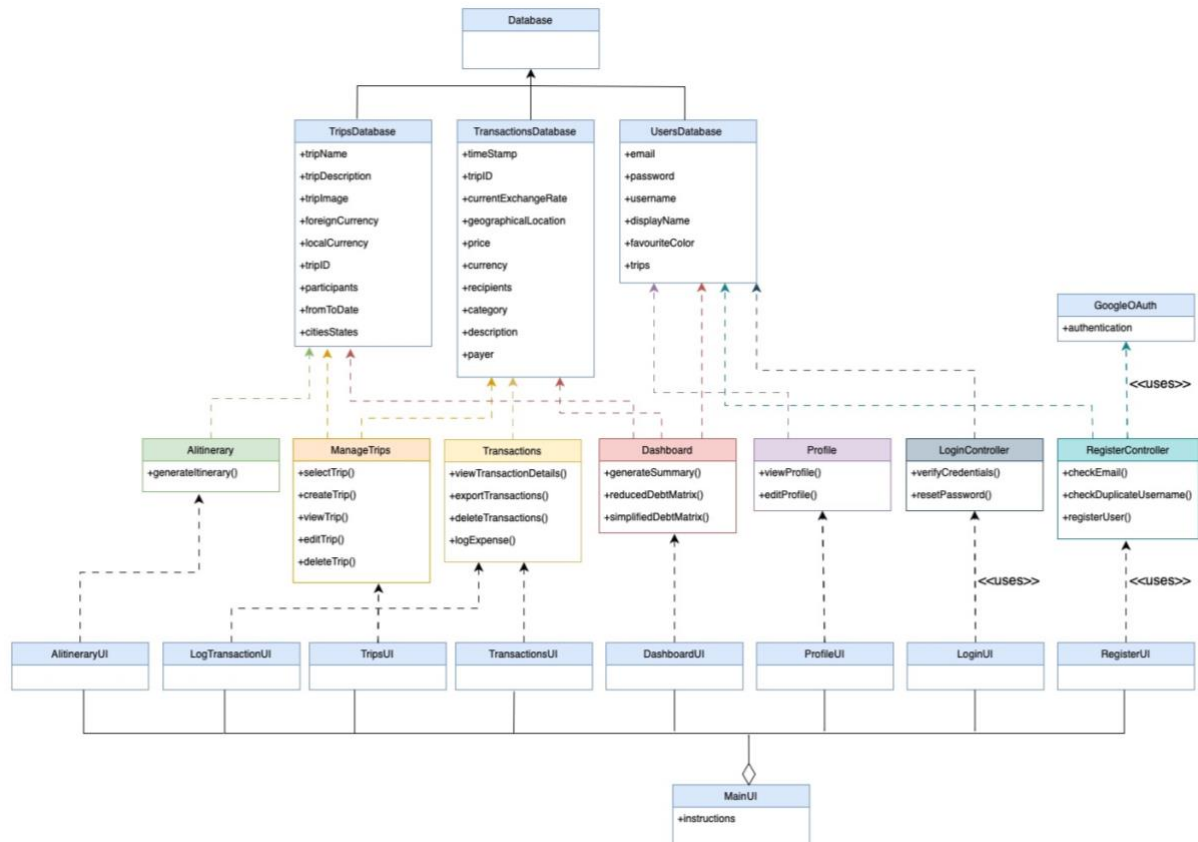
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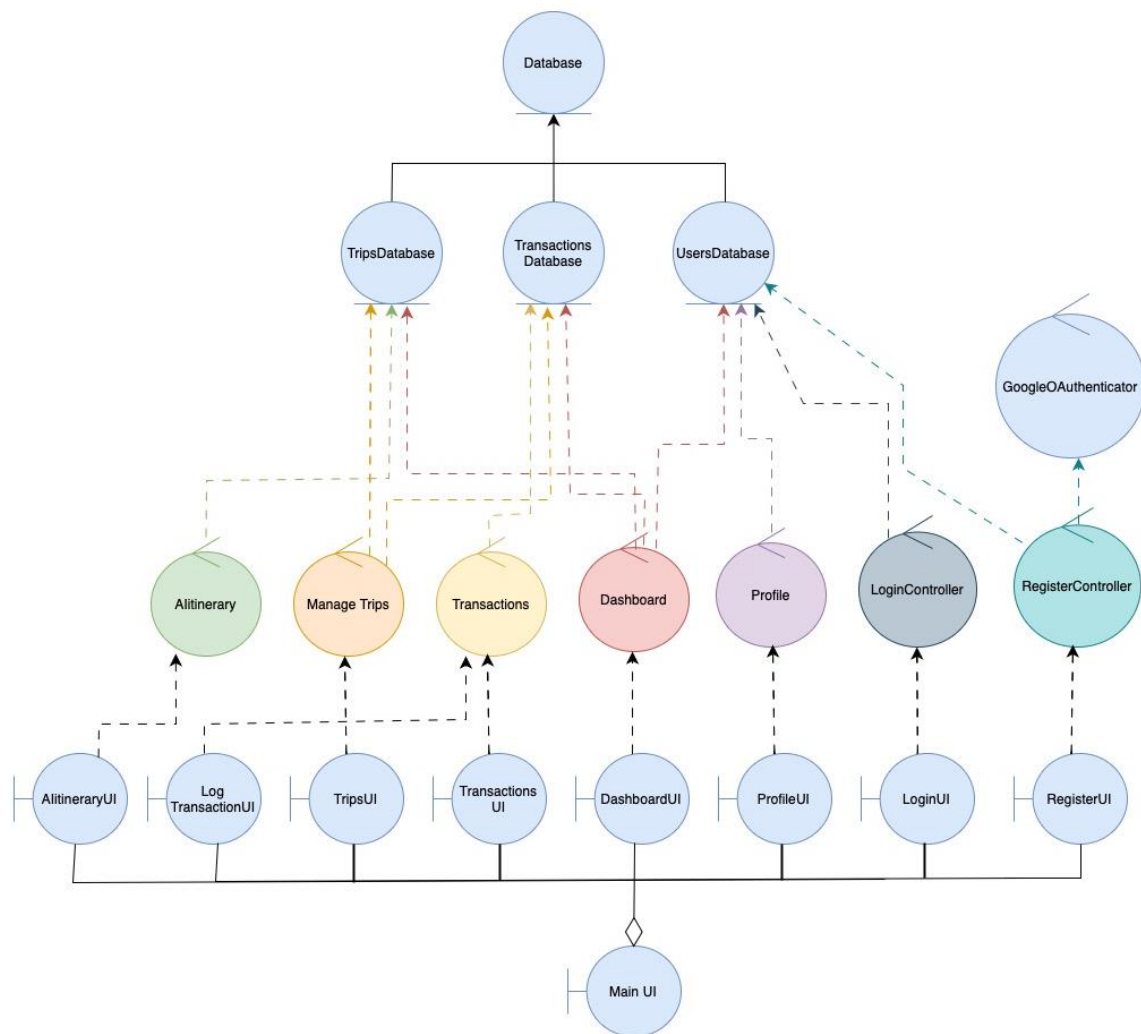
Use Case Model



Class Diagram of Entity Classes



Key Boundary Classes and Control Classes



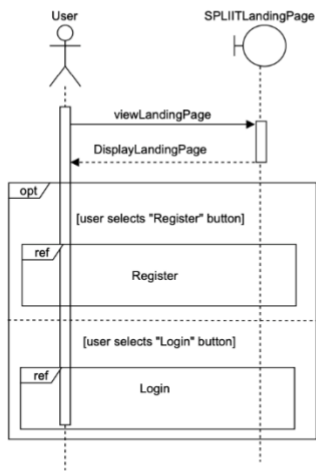
Use Case Descriptions and Sequence Diagrams

View Landing Page

Use Case ID:	UC-00		
Use Case Name:	ViewLandingPage		
Created By:	Siah Yee Long	Last Updated By:	Siah Yee Long
Date Created:	18/2/2025	Date Last Updated:	18/2/2025

Actor:	User
Description:	The first page that a user would see upon entering the SPLIIT website
Preconditions:	None
Postconditions:	None
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none">1. The user enters the SPLIIT website URL2. The user arrives at the SPLIITLandingPage3. The user can read the landing page4. The user can click either the "Register" button or the "Login" button, where they will be redirected accordingly
Alternative Flows:	<p>AF-S4: User clicks "Register" button</p> <ol style="list-style-type: none">1. The user will be redirected to the Register page. <p>AF-S4: User clicks "Login" button</p> <ol style="list-style-type: none">1. The user will be redirected to the Login page.
Exceptions:	None
Includes:	<ol style="list-style-type: none">1. Register2. Login
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

sd ViewLandingPage

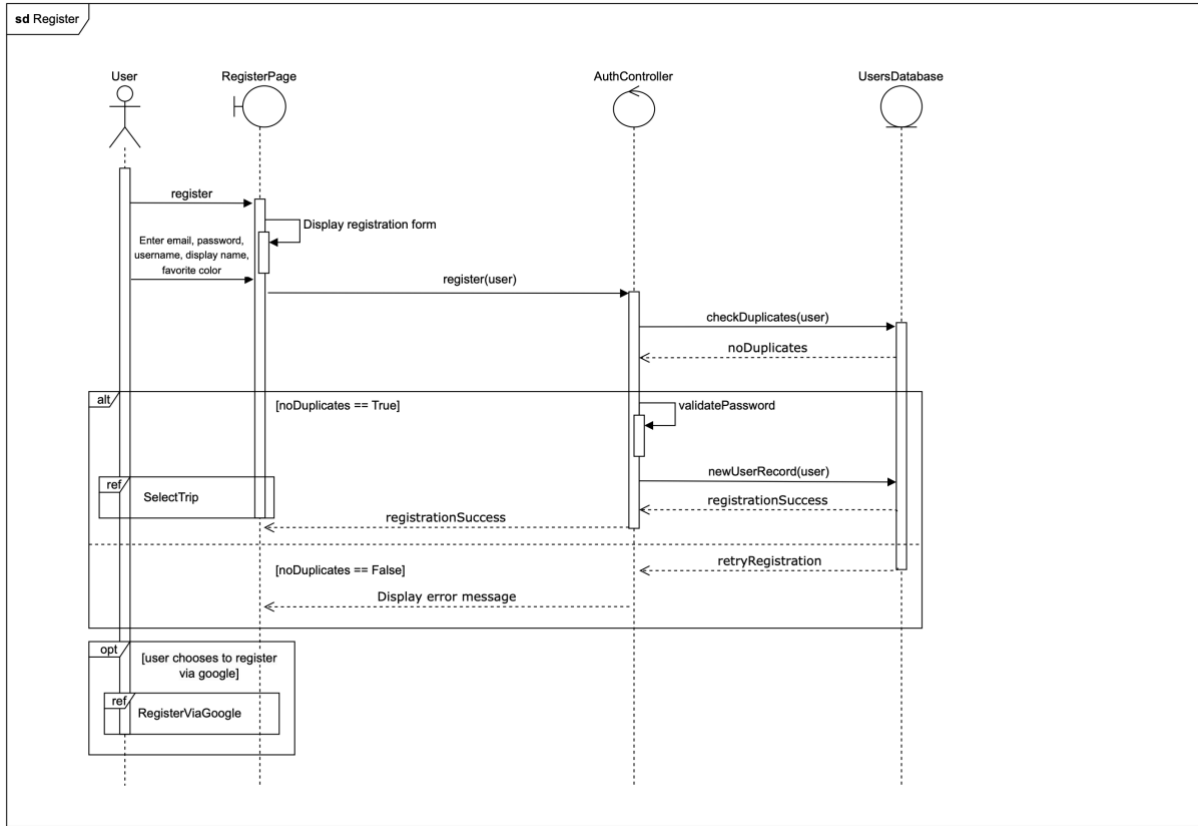


Register

Use Case ID:	UC-01-1		
Use Case Name:	Register		
Created By:	Goh Jun Keat	Last Updated By:	Siah Yee Long
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User
Description:	Allows users to register an account on SPLIIT
Preconditions:	User has a valid and unique email address
Postconditions:	<ol style="list-style-type: none">1. New user account is created and stored in database.2. A verification email is sent to provided email address.
Priority:	High
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none">1. The user navigates to the RegisterPage.2. The user enters their email, password, username, display name and chooses their favorite colour.3. The system checks email and username uniqueness by querying the UsersDatabase.4. The user reviews and accepts the terms, conditions, privacy concerns and disclaimers.5. The user clicks the "Create Account" button.6. The system creates an account for the user and stores their data in a secure database.7. After account creation, the user is redirected to the SelectTrip page for trip selection.
Alternative Flows:	<p>AF-S2: The user chooses to register using their Google account instead:</p> <ol style="list-style-type: none">1. The RegisterViaGoogle use case is called. <p>AF-S3: If the email/username provided is already in use:</p> <ol style="list-style-type: none">1. The system prompts user to provide another email/username.2. The system returns to step 2.
Exceptions:	User is notified if there have been fields which are not filled, or are invalid
Includes:	None
Special Requirements:	<ol style="list-style-type: none">1. Must adhere to terms and conditions.

	2. All data must be encrypted.
Assumptions:	The user has entered accurate and complete information.
Notes and Issues:	None

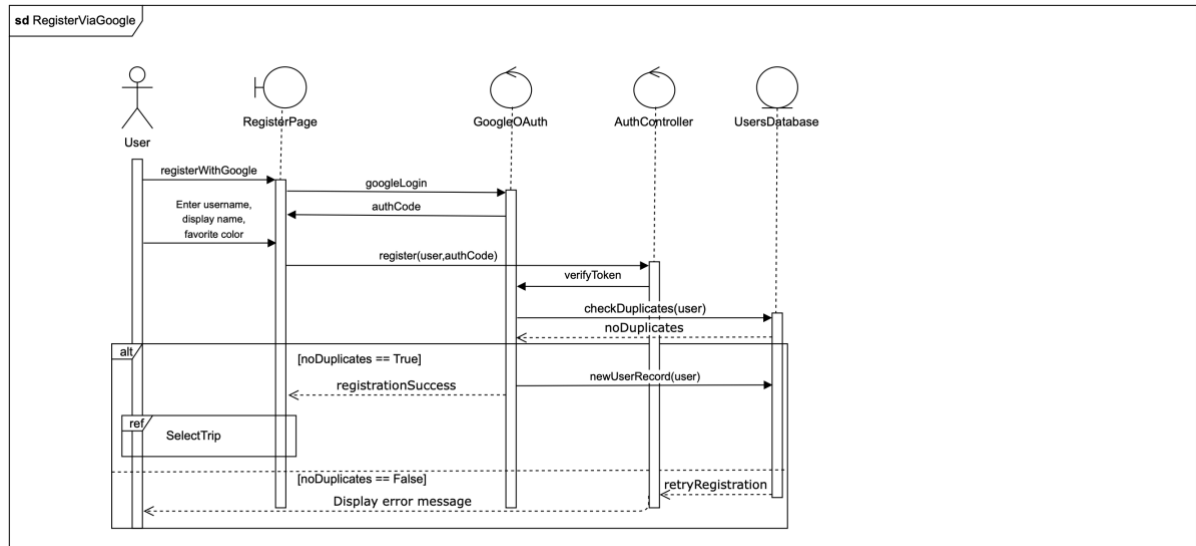


Register via Google

Use Case ID:	UC-01-2		
Use Case Name:	RegisterViaGoogle		
Created By:	Goh Jun Keat	Last Updated By:	Siah Yee Long
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User (Initiating Actor), Google Authentication Service
Description:	Allows users to register on SPLIIT using their Google account.
Preconditions:	User has an active Google account.
Postconditions:	New user account is created with data obtained via Google and stored in database.
Priority:	High
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none">1. The user selects the option to register via Google OAuth.2. The system redirects the user to the Google OAuth authentication page.3. The user authenticates using their Google account.4. If authentication is successful, Google returns basic user information to the system.5. The user enters their username, display name and favourite colour.6. The user reviews and accepts the terms, conditions, privacy concerns and disclaimers.7. The user clicks the "Create Account" button.8. The system creates an account for the user and stores their data in the UsersDatabase.9. Upon successful registration, the user is redirected to the SelectTrip page.
Alternative Flows:	AF-S4: If Google OAuth authentication fails <ol style="list-style-type: none">1. The system displays "Authentication failed. Please try again."2. The system returns to step 1.
Exceptions:	The registration process is aborted if user cancels the Google Oath process.
Includes:	None

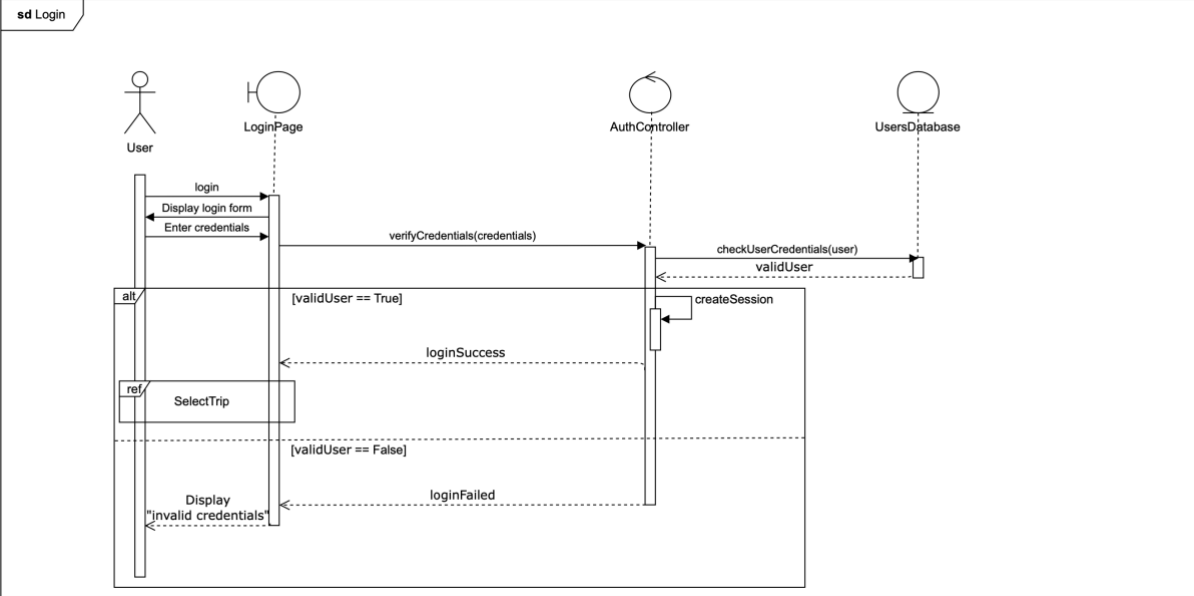
Special Requirements:	<ol style="list-style-type: none"> 1. The integration must comply with Google OAuth security standards. 2. Must adhere to terms and conditions. 3. All data must be encrypted.
Assumptions:	Google OAuth service is available and functioning correctly.
Notes and Issues:	None



Login

Use Case ID:	UC-02-1		
Use Case Name:	Login		
Created By:	Goh Jun Keat	Last Updated By:	Siah Yee Long
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

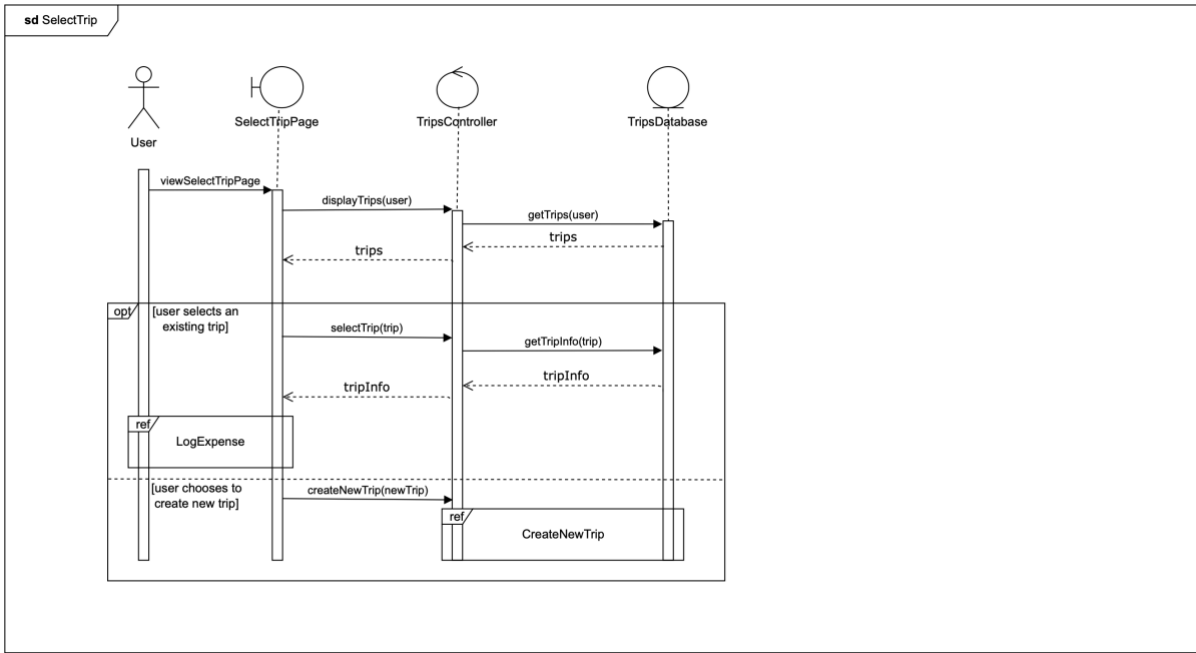
Actor:	User, UsersDatabase
Description:	Allow users to log in to their SPLIIT account.
Preconditions:	The user must have a registered account
Postconditions:	The user is navigated to their dashboard on the home page.
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none">1. The user navigates to the login page.2. The user enters their email or username along with their password.3. The user clicks the "Login" button.4. The system verifies the user credentials with the AuthController, which will get the user's data from the UsersDatabase.5. Upon successful login, the user is redirected to the SelectTrip page.
Alternative Flows:	AF-S4: If credential validation fails <ol style="list-style-type: none">1. The system prompts user to re-enter their email or username and password.2. The system returns to step 1.
Exceptions:	If any information is missing, an error message is displayed.
Includes:	None
Special Requirements:	The password entered must be encrypted and secured.
Assumptions:	User has an existing and active SPLIIT account.
Notes and Issues:	Consider logging all login attempts for security purposes.



Select Trip

Use Case ID:	UC-03-1		
Use Case Name:	SelectTrip		
Created By:	Siah Yee Long	Last Updated By:	Siah Yee Long
Date Created:	18/2/2025	Date Last Updated:	18/2/2025

Actor:	User
Description:	The first page a user would see after logging in / registering
Preconditions:	Successful login
Postconditions:	The TripsDatabase is updated
Priority:	High
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the SelectTripPage 2. The TripsController will fetch the trips previously created by the user by querying the TripsDatabase. If it is a new user, there will not be any trips returned, and the user will have to create a new trip 3. The user can choose to either create a new trip or select an existing trip that they have previously created 4. After trip selection or creation, the user will be redirected to the LogExpense page
Alternative Flows:	<p>AF-S3: The user selects an existing trip</p> <ol style="list-style-type: none"> 1. The TripsController will activate the selected trip and set it as the session's current active trip <p>AF-S3: The user selects to create a new trip</p> <ol style="list-style-type: none"> 1. The CreateNewTrip use case is called
Exceptions:	None
Includes:	<ol style="list-style-type: none"> 1. LogExpense 2. CreateNewTrip
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

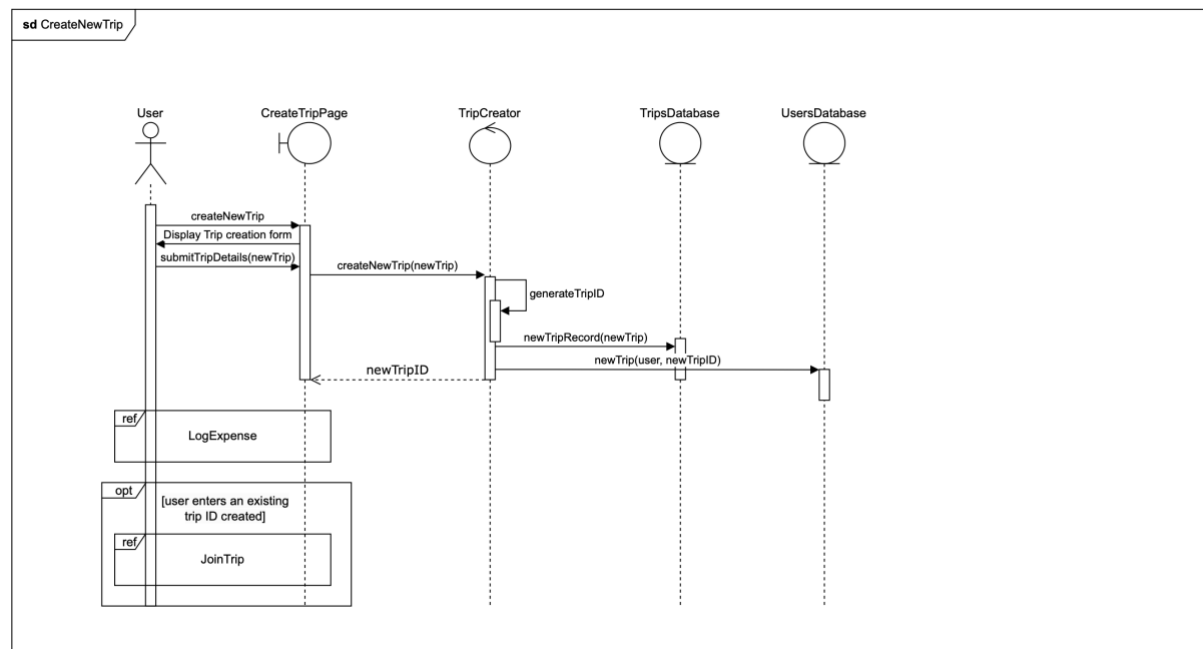


Create New Trip

Use Case ID:	UC-03-2		
Use Case Name:	CreateNewTrip		
Created By:	Goh Jun Keat	Last Updated By:	Siah Yee Long
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User
Description:	Allows user to create a new trip
Preconditions:	The user must be logged in.
Postconditions:	A new trip is created with a unique Trip ID
Priority:	High
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the CreateTripPage. 2. The user may choose to create a new trip or key in the trip ID of an existing trip that was shared with them. 3. The user enters the trip name, trip description, foreign currency to track and local currency to track. 4. The user can optionally enter a trip image, destination, custom Trip ID, cities/states to be visited, estimated budget per person, from and to dates. 5. The system creates a new trip with the input data and generates a unique assigned trip ID. 6. The system records the new trip information into the TripsDatabase, and the user's trips in the UsersDatabase. 7. After successful creation of the trip, the system displays the new trip ID created for the user to share, and to ask for the user to continue into the SPLIIT app. 8. The user will then be redirected to the LogExpense page upon continuation
Alternative Flows:	<p>AF-S2: The user enters an existing trip ID</p> <ol style="list-style-type: none"> 1. The user will be redirected to the JoinTrip use case. <p>AF-S3: If there is missing information</p>

	<ol style="list-style-type: none"> 1. The user is prompted to fill in the missing information. 2. When inputs are complete, the system resumes flow.
Exceptions:	If new trip cannot be created, the user is notified and no trip is created.
Includes:	<ol style="list-style-type: none"> 1. LogExpense 2. JoinTrip
Special Requirements:	<ol style="list-style-type: none"> 1. All data must be encrypted. 2. Only the trip owner can share the unique Trip ID with other users.
Assumptions:	The user has entered accurate and complete information.
Notes and Issues:	None

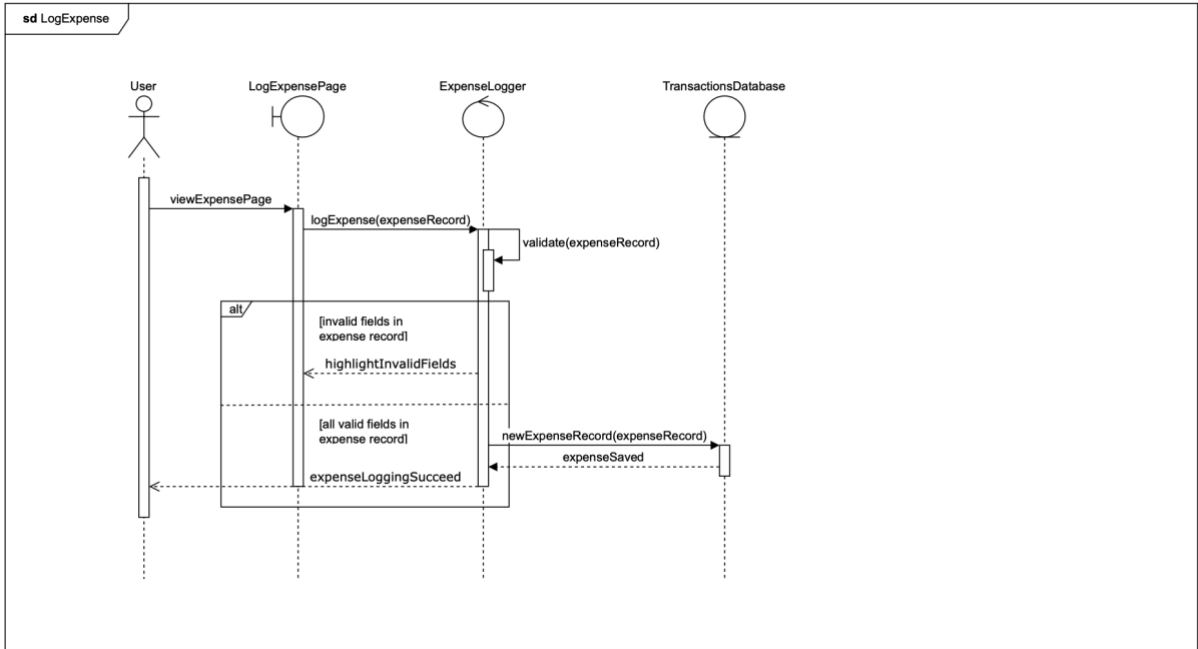


Log Expense

Use Case ID:	UC-04-1		
Use Case Name:	LogExpense		
Created By:	Goh Jun Keat	Last Updated By:	Siah Yee Long
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, Database
Description:	Allows users to log an expense transaction.
Preconditions:	<ol style="list-style-type: none">1. The user must be logged in.2. The user must be a participant in an existing trip.
Postconditions:	The transaction is successfully logged.
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none">1. The user enters the LogExpensePage.2. The user enters the amount paid, currency of amount paid, recipients, category of payment, description and payer. This constitutes as an expenseRecord.3. The user presses the "Log Transaction" button.4. The system validates the inputs.5. Upon successful validation, the system saves the transaction data in database.6. A timestamp, the trip ID, the current exchange rate and geographical location information are also appended to the saved transaction record.7. The user is shown a success message indicating that the expense record has been submitted.
Alternative Flows:	<p>AF-S2: If there is missing information</p> <ol style="list-style-type: none">1. The user is prompted to fill in the missing information.2. The system returns to step 2. <p>AF-S6: If the user has disabled location services on their device</p> <ol style="list-style-type: none">1. The geographical information field will be recorded as null.
Exceptions:	If transaction cannot be added, the user is notified and transaction is not added.
Includes:	None

Special Requirements:	All data must be encrypted and saved securely.
Assumptions:	The user has entered accurate and complete information.
Notes and Issues:	None

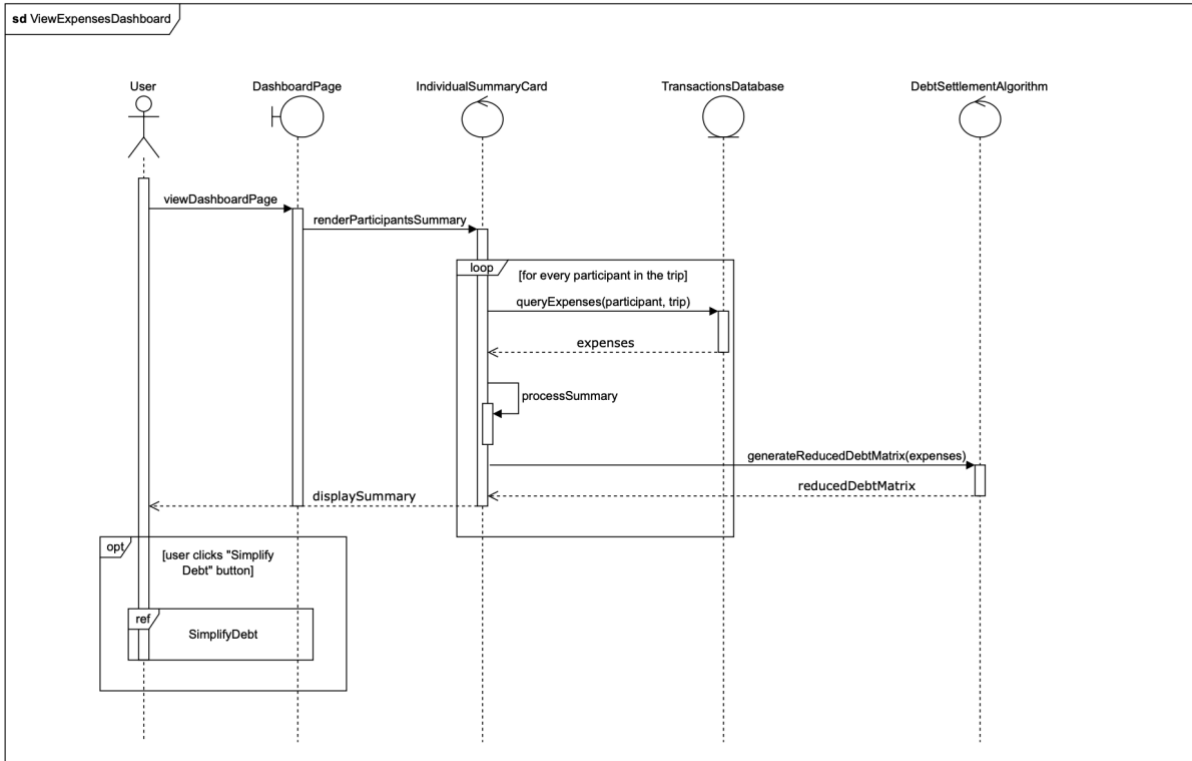


View Expenses Dashboard

Use Case ID:	UC-05-1		
Use Case Name:	ViewExpensesDashboard		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, database
Description:	Allows users to view and obtain insights from participants' logged trip transactions.
Preconditions:	<ol style="list-style-type: none"> 1. The user must be logged in. 2. The user must be a participant in an existing trip.
Postconditions:	<ol style="list-style-type: none"> 1. Every participant of the selected trip is displayed. 2. Displays a pie chart for each participant showing a breakdown of their expenses by category. 3. Each participant's total spending is displayed. 4. A breakdown of the amount each participant owes to others is displayed.
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the DashboardPage. 2. The system retrieves information about the user's current trip and the participants from the database. 3. The system calculates each participant's total expenses. 4. The system invokes the DebtSettlementAlgorithm with the retrieved expenses. 5. A reduced debt matrix is generated and returned to the DashboardPage. 6. The user views the summarised expense information on the DashboardPage.
Alternative Flows:	AF-S6: The user clicks the "Simplify Debt" button <ol style="list-style-type: none"> 1. The SimplifyDebt use case is called.
Exceptions:	<ol style="list-style-type: none"> 1. If transactions data cannot be retrieved, the user is notified and no summary is displayed. 2. If reduced debt matrix cannot be computed, the user is notified and no summary is displayed.
Includes:	<ol style="list-style-type: none"> 1. SimplifyDebt

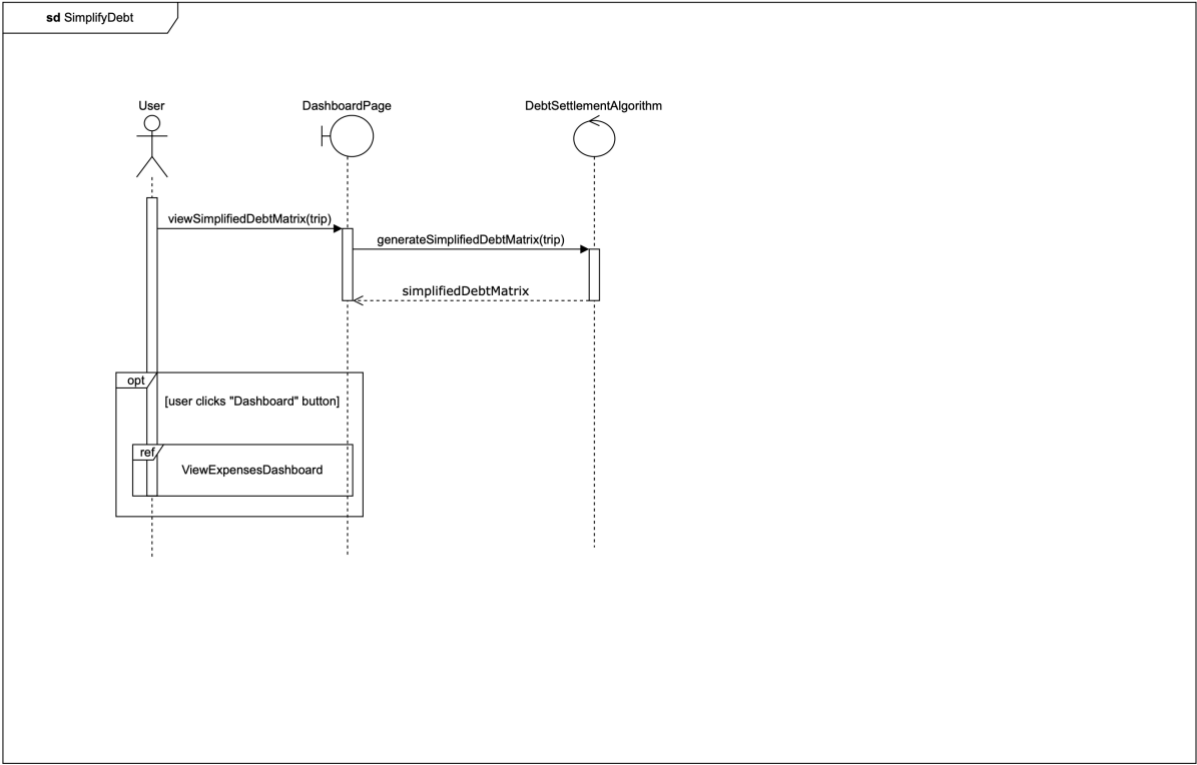
Special Requirements:	<ol style="list-style-type: none"> 1. DashboardPage must load quickly and be accessible on multiple devices. 2. All calculations must be completed within a short time. 3. All data and information must be displayed clearly.
Assumptions:	The trip transactions data are valid and up to date.
Notes and Issues:	None



Simplify Debt

Use Case ID:	UC-05-2		
Use Case Name:	SimplifyDebt		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User
Description:	Allows users to view a simplified debt settlement strategy.
Preconditions:	<ol style="list-style-type: none">1. The user must be logged in.2. The system must have successfully displayed an expense summary.
Postconditions:	<ol style="list-style-type: none">1. A simplified debt matrix is successfully computed and displayed on the DashboardPage.
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none">1. The user enters the DashboardPage.2. The user clicks the "Simplify Debts" button.3. The system invokes the debt settlement algorithm to generate a simplified debt matrix for the current trip.4. The simplified debt matrix is generated and returned to DashboardPage for display under the ViewExpensesDashboard use case.
Alternative Flows:	None
Exceptions:	If simplified debt matrix cannot be computed, user is notified and no simplified debt matrix is displayed.
Includes:	ViewExpensesDashboard
Special Requirements:	<ol style="list-style-type: none">1. The computation must complete within a short time.2. The algorithm must accurately calculate results.
Assumptions:	The trip transactions data are valid and up to date.
Notes and Issues:	None

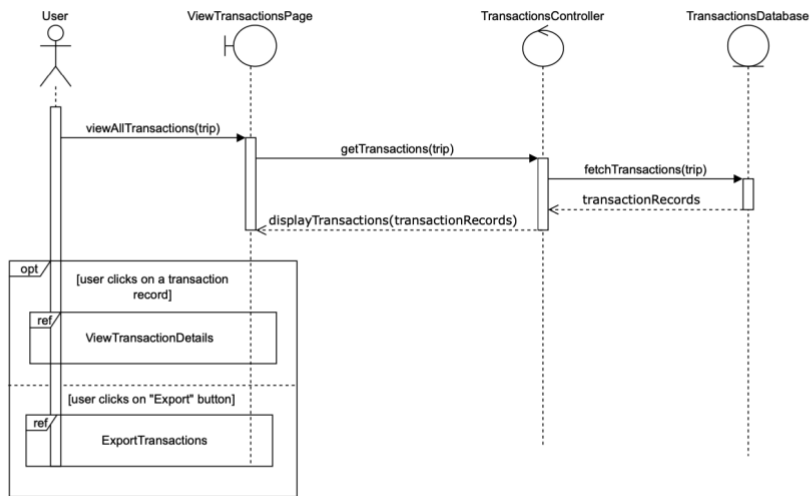


View All Transactions

Use Case ID:	UC-06-1		
Use Case Name:	ViewAllTransactions		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, database
Description:	Allows users to view all transactions of a trip.
Preconditions:	<ol style="list-style-type: none"> 1. The user must be logged in. 2. The user must be a participant of the trip.
Postconditions:	<ol style="list-style-type: none"> 1. A list of transactions of the trip is displayed to the user.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the ViewTransactionsPage. 2. The system retrieves all transactions from the selected trip from database. 3. A list of transaction records is returned and displayed on the ViewTransactionsPage. 4. The user can view the details of a specific trip or export the transaction history.
Alternative Flows:	<p>AF-S4: If the user clicks on a specific transaction record</p> <ol style="list-style-type: none"> 1. The ViewTransactionDetails use case is called. <p>AF-S4: If the user clicks on "Export" button</p> <ol style="list-style-type: none"> 1. The ExportTransactions use case is called.
Exceptions:	<ol style="list-style-type: none"> 1. If the trip has no logged transactions found, the message "No Transactions Found!" is displayed. 2. If transaction data cannot be retrieved, the user is notified and no transaction history is displayed.
Includes:	<ol style="list-style-type: none"> 1. ViewTransactionDetails 2. ExportTransactions
Special Requirements:	<ol style="list-style-type: none"> 1. ViewTransactionsPage must load quickly and be accessible on multiple devices. 2. All information must be displayed clearly in a list.
Assumptions:	All expense transactions have been accurately recorded and stored in system database.
Notes and Issues:	None

sd ViewAllTransactions

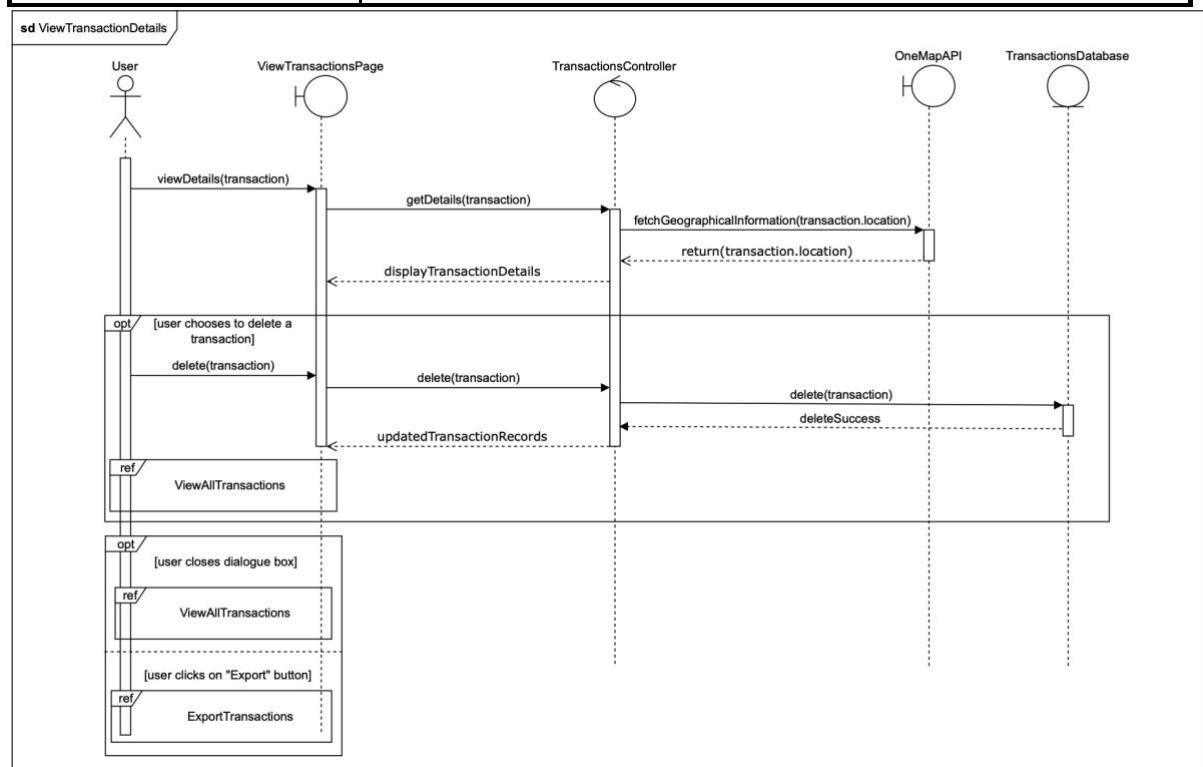


View Transaction Details

Use Case ID:	UC-06-2		
Use Case Name:	ViewTransactionDetails		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, OneMapAPI, database
Description:	Allows users to view all transactions of a trip.
Preconditions:	<ol style="list-style-type: none"> 1. The user must be logged in. 2. All transaction logs must be successfully displayed.
Postconditions:	<ol style="list-style-type: none"> 1. All details of the specified transaction is displayed.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the ViewTransactionsPage. 2. The user selects a specific transaction. 3. The system retrieves details of the transaction from TransactionsController. 4. Additional locations information is retrieved from OneMapAPI using the transaction location data. 5. The system displays all the transaction details to the user through a dialogue box. 6. The user can delete the selected transaction or close the dialogue box.
Alternative Flows:	<p>AF-S6: If the closes the dialogue box</p> <ol style="list-style-type: none"> 1. The system returns to the ViewTransactionsPage through the ViewAllTransactions use case. <p>AF-S6: If the user clicks the "Delete" button</p> <ol style="list-style-type: none"> 1. The system prompts the user to confirm their decision. 2. Upon confirmation, the system deletes the selected transaction and updates database. 3. The user is notified of successful deletion.
Exceptions:	<ol style="list-style-type: none"> 1. If system encounters error while retrieving data, user is notified and transaction details are not displayed.

	<ol style="list-style-type: none"> If the transaction no longer exists in database, the user is notified and returned to ViewTransactionsPage through the ViewAllTransactions use case. If transaction is unable to be deleted, the user is notified and transaction is not deleted.
Includes:	1. ViewAllTransactions
Special Requirements:	<ol style="list-style-type: none"> Transaction details must load quickly and be accessible on multiple devices. All information must be displayed clearly.
Assumptions:	All transaction details have been accurately recorded and stored in database.
Notes and Issues:	None

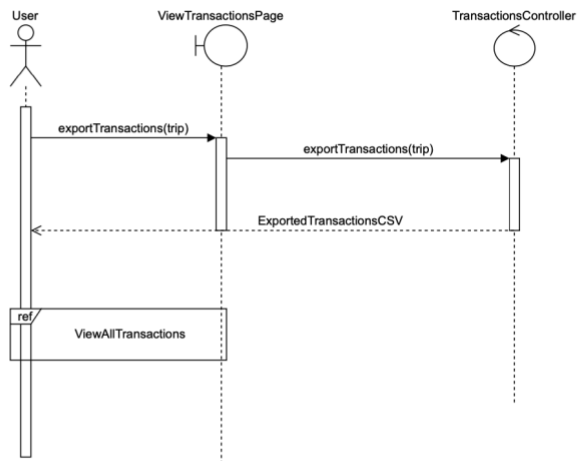


Export Transactions

Use Case ID:	UC-06-3		
Use Case Name:	ExportTransactions		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User
Description:	Allows users to export transaction history as CSV file.
Preconditions:	<ol style="list-style-type: none">1. The user must be logged in.2. All transaction logs must be successfully displayed.
Postconditions:	<ol style="list-style-type: none">1. All transaction logs are exported as CSV file.
Priority:	Low
Frequency of Use:	Low
Flow of Events:	<ol style="list-style-type: none">1. The user enters the ViewTransactionPage.2. The user selects the "Export" button.3. The system converts the transaction logs into a CSV file and downloads it onto the user's device.4. The user is redirected back to the ViewTransactionPage via the ViewAllTransactions use case.
Alternative Flows:	None
Exceptions:	The user is notified if CSV file is unable to be generated.
Includes:	<ol style="list-style-type: none">1. ViewAllTransactions
Special Requirements:	<ol style="list-style-type: none">1. The CSV file must be generated within a short time.
Assumptions:	All transaction details have been accurately recorded and stored in database beforehand.
Notes and Issues:	None

sd ExportTransactions

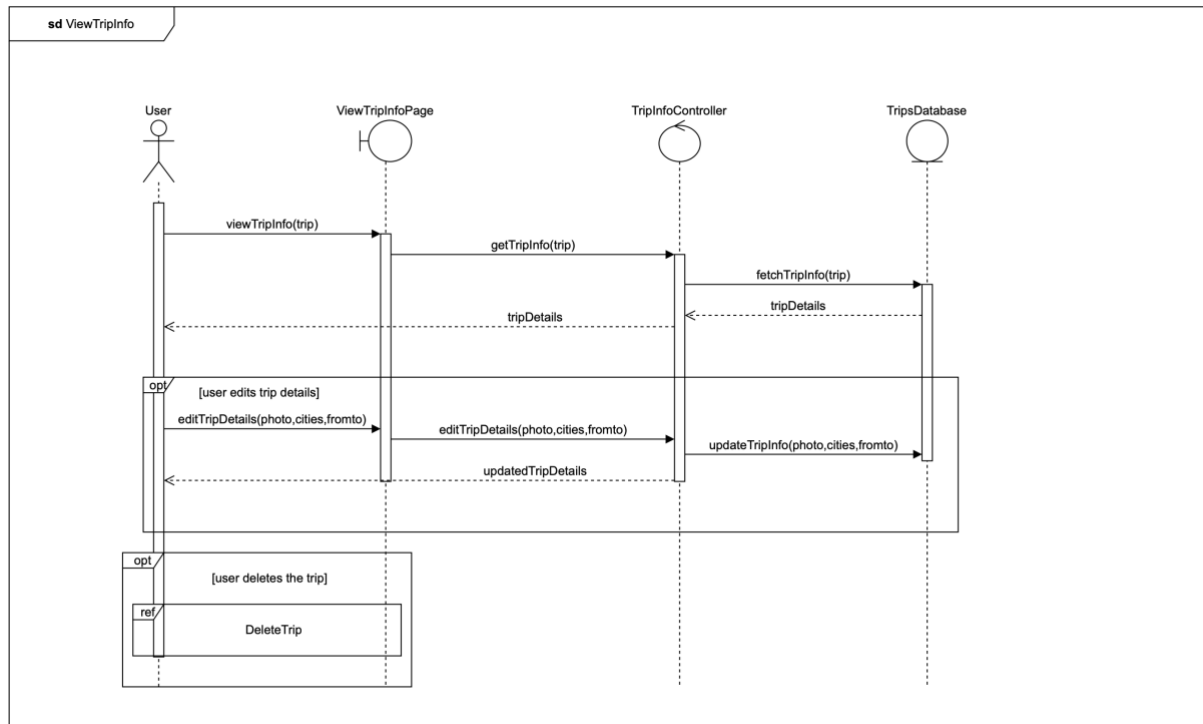


View Trip Info

Use Case ID:	UC-07-1		
Use Case Name:	ViewTripInfo		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, database
Description:	Allows user to view and edit selected trip details
Preconditions:	<ol style="list-style-type: none"> 1. The user must be logged in. 2. The user has selected an existing trip in which they are a participant.
Postconditions:	<ol style="list-style-type: none"> 1. All details and changes to the trip are displayed.
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the ViewTripInfoPage. 2. The system retrieves all data related to the selected trip from database. 3. The trip details are returned and displayed to the user on ViewTripInfoPage. 4. The user can edit trip details. 5. The user can choose to delete the current trip
Alternative Flows:	<p>AF-S4: If the user clicks the "Edit Trip" button:</p> <ol style="list-style-type: none"> 1. The user updates the cities/states visited, start and end date or photo of the trip. 2. The user clicks the "Save" button. 3. The system updates the database and changes are displayed on ViewTripInfoPage. <p>AF-S5: If the user clicks the "Delete Trip" button:</p> <ol style="list-style-type: none"> 1. The user will be redirected to the DeleteTrip functionality
Exceptions:	<ol style="list-style-type: none"> 1. If trip data cannot be retrieved, user is notified and trip data is not displayed. 2. If trip cannot be edited, user is notified and changes are not saved.
Includes:	<ol style="list-style-type: none"> 1. DeleteTrip
Special Requirements:	<ol style="list-style-type: none"> 1. All data from the selected trip must load quickly and be accessible on multiple devices. 2. All information must be displayed clearly.

	3. All changes should be saved in database and reflected immediately upon saving.
Assumptions:	1. All trip info has been accurately recorded and stored in database beforehand. 2. The user has entered valid and accurate data.
Notes and Issues:	None

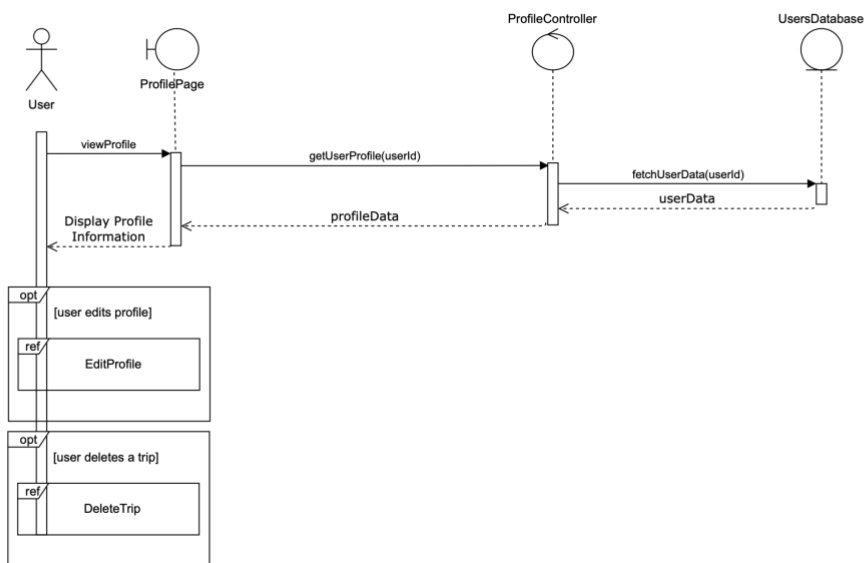


View Profile

Use Case ID:	UC-08-1		
Use Case Name:	ViewProfile		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, database
Description:	Allows users to view their profile and participating trips.
Preconditions:	1. The user must be logged in.
Postconditions:	1. The user's profile is displayed.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none">1. The user enters the ProfilePage.2. The system retrieves the user's profile data and participating trips from database.3. The data is displayed on the ProfilePage.4. The user can edit their profile via the EditProfile use case.5. The user can delete the trips that they are part of currently
Alternative Flows:	<p>AF-S4: If the user clicks the "Edit Profile" button:</p> <ol style="list-style-type: none">1. The EditProfile use case is called. <p>AF-S5: If the user clicks the Delete button for a trip</p> <ol style="list-style-type: none">1. The user is redirected to the DeleteTrip functionality
Exceptions:	If profile data cannot be retrieved, user is notified and profile data is not displayed.
Includes:	<ol style="list-style-type: none">1. EditProfile2. DeleteTrip
Special Requirements:	<ol style="list-style-type: none">1. User profile must load quickly and be accessible on multiple devices.2. All data must be encrypted in database.
Assumptions:	The profile information is accurate and complete.
Notes and Issues:	None

sd ViewProfile

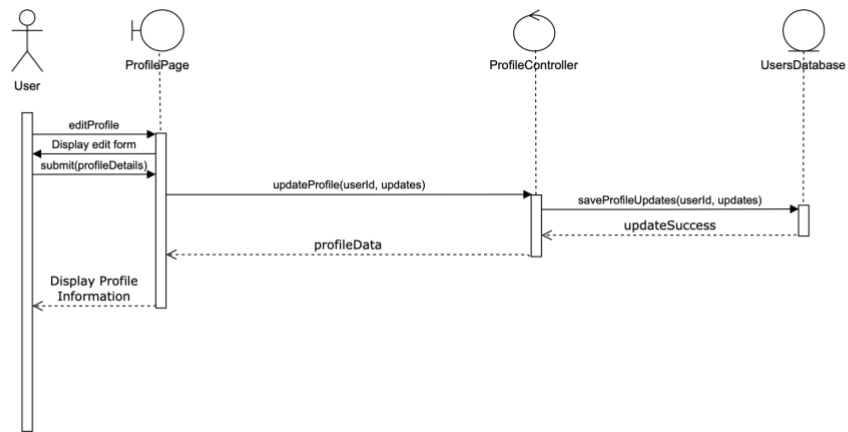


Edit Profile

Use Case ID:	UC-08-1		
Use Case Name:	EditProfile		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, database
Description:	Allows users to edit their profile and delete a trip.
Preconditions:	<ol style="list-style-type: none">1. The user must be logged in.2. The user's profile and participating trips are successfully displayed.
Postconditions:	<ol style="list-style-type: none">1. The user profile and database are updated and displayed.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none">1. The user updates their profile details like display name and favourite colour.2. The user clicks the "Save" button.3. The system updates the database and changes are displayed.
Alternative Flows:	AF-S2: The user cancels the edit process <ol style="list-style-type: none">1. The edit process is aborted and nothing is changed.
Exceptions:	<ol style="list-style-type: none">1. If profile data cannot be edited, user is notified and profile data is not edited.2. If user aborts the deletion process, the trip is not deleted.
Includes:	None
Special Requirements:	<ol style="list-style-type: none">1. All updates must be encrypted and saved securely.2. All changes should be reflected immediately upon saving.
Assumptions:	The user has entered accurate data.
Notes and Issues:	None

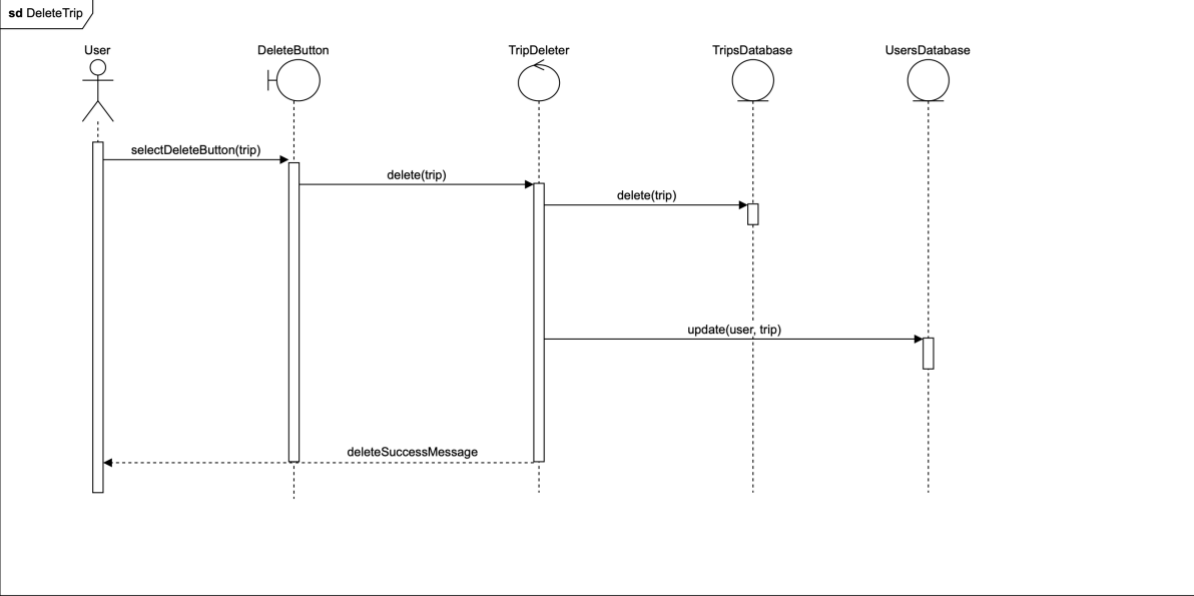
sd EditProfile



Delete Trip

Use Case ID:	UC-07-2		
Use Case Name:	DeleteTrip		
Created By:	Siah Yee Long	Last Updated By:	Siah Yee Long
Date Created:	19/2/2025	Date Last Updated:	19/2/2025

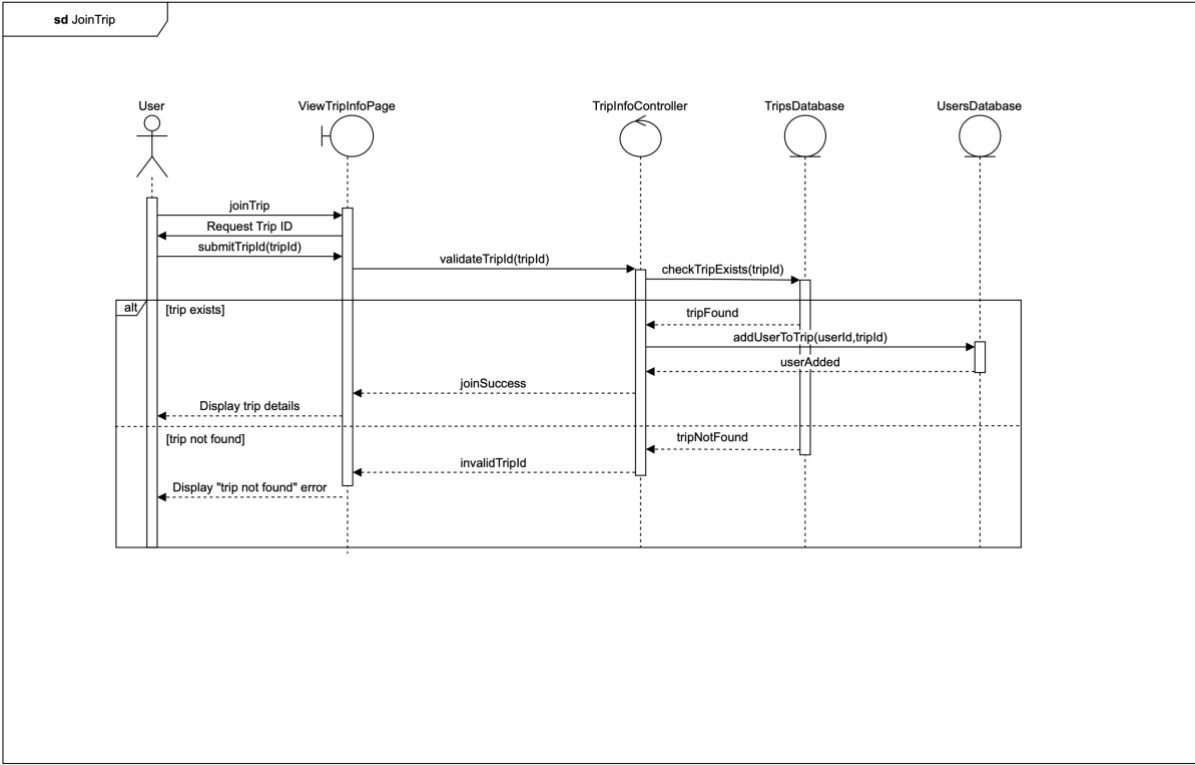
Actor:	User
Description:	Allows users to delete a trip through the corresponding delete button
Preconditions:	<ol style="list-style-type: none">1. The user must be logged in.2. The trip to be joined must exist within database.
Postconditions:	<ol style="list-style-type: none">1. The user successfully deletes the trip.
Priority:	Low
Frequency of Use:	Low
Flow of Events:	<ol style="list-style-type: none">1. The user clicks the "Delete" button.2. The delete request is sent to the TripDeleter.3. A delete request is sent to the TripsDatabase to mark the chosen trip as deleted.4. An update request is sent to the UsersDatabase to remove the trip from the user's list of associated trips.5. The delete status is shown to the user.
Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	Database must be updated securely.
Assumptions:	None
Notes and Issues:	None



Join Trip

Use Case ID:	UC-03-3		
Use Case Name:	JoinTrip		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, database
Description:	Allows users to join a trip using a unique Trip ID.
Preconditions:	<ol style="list-style-type: none">1. The user must be logged in.2. The trip to be joined must exist within database.
Postconditions:	<ol style="list-style-type: none">1. The user successfully joins trip with the Trip ID.
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none">1. The user enters the ViewTripInfoPage.2. The user enters a valid Trip ID in the "I have a trip ID" text field.3. The system validates the Trip ID format and checks if the Trip ID exists in database.4. If the trip is found, the user is added to the trip and the TripsDatabase is updated to include the user in its participants field. The UsersDatabase will be updated too to include the Trip ID in the user's trips field.5. The user is notified that they have successfully joined the trip.
Alternative Flows:	AF-S4: If Trip ID is invalid or trip does not exist <ol style="list-style-type: none">1. The system displays message "Trip Not Found!"2. The system returns to step 3.
Exceptions:	If trip cannot be joined, user is notified and user does not join trip.
Includes:	<ol style="list-style-type: none">1. LogExpense
Special Requirements:	<ol style="list-style-type: none">1. Unique Trip ID and user info must be encrypted.2. Database must be updated securely.
Assumptions:	The user has entered the correct Trip ID.
Notes and Issues:	None

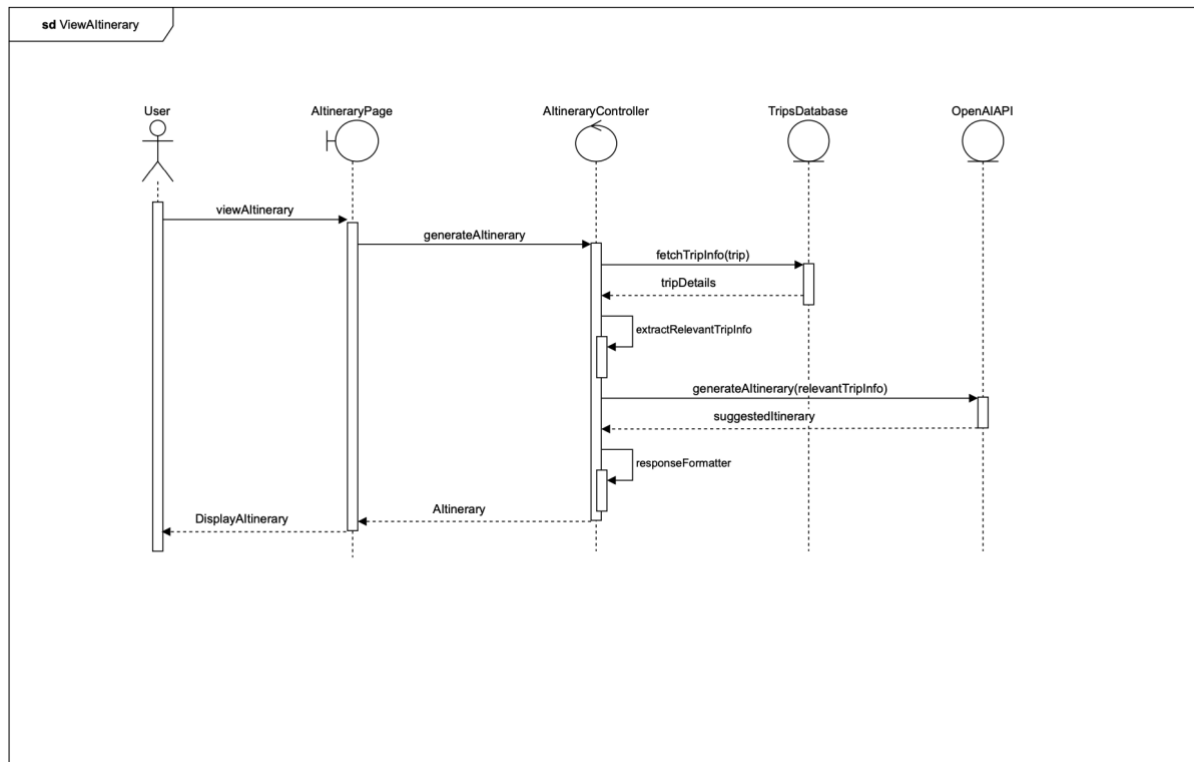


View Altinerary

Use Case ID:	UC-09-1		
Use Case Name:	ViewAltinerary		
Created By:	Goh Jun Keat	Last Updated By:	Goh Jun Keat
Date Created:	10/2/2025	Date Last Updated:	18/2/2025

Actor:	User, OpenAI API
Description:	Allows users to view a recommended trip itinerary generated by AI.
Preconditions:	<ol style="list-style-type: none"> 1. The user must be logged in. 2. The trip used to generate the itinerary must exist. 3. The system has access to external OpenAI API service.
Postconditions:	<ol style="list-style-type: none"> 1. A complete or partial itinerary is generated and displayed to the user.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. The user enters the AltineraryPage. 2. The system retrieves trip data from database. 3. The system extracts relevant trip info such as trip budget, location, duration and number of participants. 4. The system calls the OpenAI API to generate a recommended trip itinerary based on the data. 5. The AI-generated itinerary is formatted and displayed to the user.
Alternative Flows:	<p>AF-S3: If no matching trip data is found</p> <ol style="list-style-type: none"> 1. The system displays message "Trip details could not be retrieved!" 2. The system returns to step 1. <p>AF-S5: If itinerary generation fails</p> <ol style="list-style-type: none"> 1. The system displays message "Itinerary cannot be generated at this time." 2. The system returns to step 1.
Exceptions:	<ol style="list-style-type: none"> 1. If trip data cannot be retrieved, user is notified and no itinerary is generated. 2. If OpenAI API service fails, user is notified and no itinerary is generated.

Includes:	None
Special Requirements:	<ol style="list-style-type: none"> 1. All communication with database and OpenAI API should be encrypted. 2. The generated itinerary should be generated in a short time.
Assumptions:	OpenAI API service is available and functioning correctly.
Notes and Issues:	None



Initial Dialogue Map

