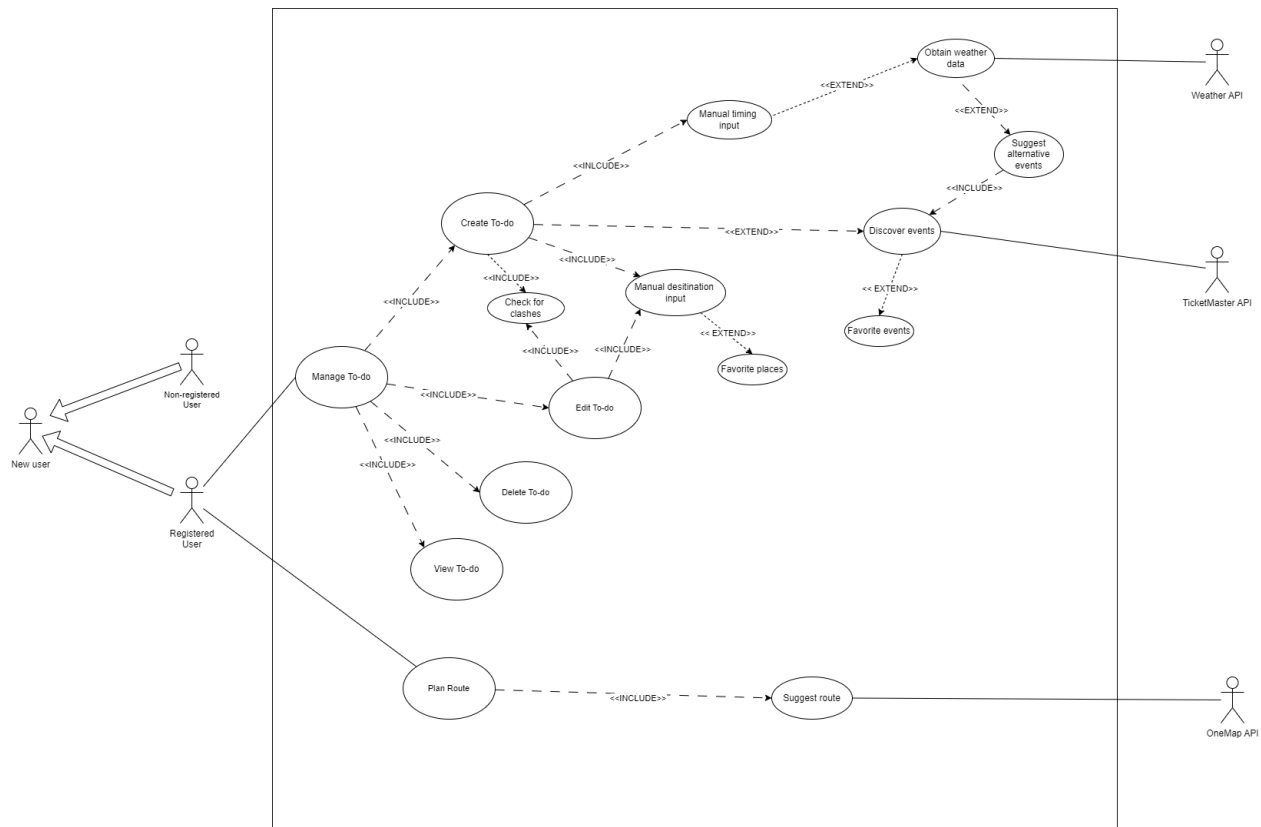


Use Case Diagram



Use Case Description

Manage Todo

Flow of Events

1. The system presents the user with options to Create, Edit, Delete, or View Todos.
2. If the user selects Create Todo, they are guided through the process outlined in the "Create Todo" use case.
3. If the user selects Edit Todo, they first choose a Todo from their list to edit, then are guided through the editing process, where they can change any detail of the selected Todo.
4. If the user selects Delete Todo, they choose a Todo to delete from their list and confirm deletion in the process described in the "Delete Todo" use case.
5. If the user selects View Todo, they are presented with a list of their Todos and can select one to view its detailed information, as described in the "View Todo" use case.

Exceptions

If there are no Todos available when the user chooses to Edit or View, the system informs the user and offers to redirect them to the Create Todo option.

Create Todo

Flow of Events

1. The user selects the option to create a new Todo.
2. The system prompts the user for the Todo details: title, task, datetime, duration, destination, indoor/outdoor status.
3. The user inputs the required details and may use the included use case "manual destination input" to input the address of the activity, "manual timing input" to input the activity time..
4. The system include use case "check for clashes" to identify if there's any overlap between activities. If there is, system will warn the user and ask user to change datetime.
5. The system saves the Todo with the provided details as non-volatile data in the database.
6. The system confirms the creation of the Todo to the user.

Exceptions

If the database is unavailable, the system displays an error message and asks the user to try again later.

View Todo

Flow of Events

1. The user selects the option to view Todos.
2. The system retrieves Todos from the database and displays them to the user.
3. The user can select a Todo activity to view its detailed information.

Exceptions

If there are no Todos to display, the system informs the user that no Todos are available.

Delete Todo

Flow of Events

1. The user selects the option to delete a Todo.
2. The system displays a list of existing Todos.
3. The user selects the Todo to be deleted.
4. The system confirms the deletion request.
5. Upon confirmation, the system deletes the selected Todo from the database and confirms the deletion to the user.

Manual Destination Input

Flow of Events

1. When prompted for Todo details, the user selects the option to manually input the destination.
2. The user enters the address of the activity.
3. The system validates the address and saves it as part of the Todo's destination.

Exceptions

If the address is invalid, the system alerts the user and requests a valid address.

Suggest Route

Flow of Events

1. Based on a selected Todo's destination or during the creation of a Todo, the user requests route suggestions.
2. The system uses the OneMap API to suggest an optimal path from the user's current location to the destination, considering traffic and public transportation options.
3. The system displays the suggested routes and show the estimated time taken of each route to the user.

Manual Timing Input

Flow of Events

1. When prompted for Todo details, the user selects the option to manually input the activity time.
2. The user inputs the date and time of the activity.
3. The system validates and saves the input as part of the Todo's datetime.

Obtain Weather Data

Flow of Events

1. The system uses the Weather API to obtain real-time weather data for the user's current location or a specified Todo destination.
2. The system displays the weather information to the user or uses the information to suggest alternative events or provide alerts.

Discover Events

Flow of Events

1. The user selects the option to discover events.
2. The system uses the TicketMaster API to present the user with events happening nearby, based on preferences and current location.
3. The user can view more information about an event or add it as a Todo.

Check for Clashes

Flow of Events

1. During Todo creation or editing, the system checks for time overlaps with existing Todos.
2. If an overlap is found, the system alerts the user and provides details of the clash.

Alternative Flows

The user can choose to adjust the Todo details to resolve the clash or proceed despite the overlap.

Suggest Alternative Events

Flow of Events

1. If weather conditions impact an outdoor Todo, the system suggests alternative indoor events or sheltered transportation modes, utilizing Weather and Event Discovery APIs.
2. The user can review the suggested alternatives and choose to accept an alternative event.
3. If accepted, the system updates the Todo with the new event details.

Alternative Flows

If the user does not accept any alternative events, the system may suggest adjusting the Todo to a different time or provide sheltered transportation options.

Favorite Places

Flow of Events

1. When the user is manually inputting a destination for a Todo, the system offers an option to choose from favorite places.
2. The system retrieves and displays a list of places the user frequently visits
3. The user selects one of the favorite places as the destination of the Todo.
4. The user continues with the rest of the Todo creation process.

Alternative Flows

The user can decline all the options offered by the system.

Favorite Events

Flow of Events

1. When the user is using the "Discover Events" feature to find new events, the system also offers an option to view favorite events.
2. The system retrieves and displays a list of events the user has marked as favorites in the past, potentially including events the user has attended or shown interest in.
3. The user selects one of the favorite events to view more details or to add it directly as a Todo.

Alternative Flows

The user can decline all the options offered by the system.

Plan Route

Flow of Events

1. The user selects the option to plan a route.
2. The system displays a list of the user's created Todos, and the user selects the Todo for which they want to plan a route.
3. Upon selection, the system uses the included "Suggest Route" use case to plan the route.
4. The system retrieves the destination of the selected Todo and the specified start location.
5. The system uses "Suggest route" to suggest an optimal path from the start location to the Todo's destination
6. The system displays the suggested route(s) to the user, including details such as estimated travel time and possible modes of transportation.
7. The user reviews the suggested routes and selects the one that best fits their needs.