Yetuga – Webapp

Yetuga – Urban Mobility & Resource Locator
A web application that helps city residents find optimal transport routes and urban services in real-time.

Background:

Urban mobility in Ethiopia, particularly in cities like Addis Ababa and Adama, is becoming more challenging due to rapid population growth, inconsistent taxi routes, and unclear fare systems. Many residents — even those who have lived in the city for years — struggle to identify the shortest, safest, and most affordable transport options.

Newcomers, such as students or people from rural areas, face even bigger challenges: getting lost, being overcharged, or ending up in unfamiliar areas. Additionally, there's a lack of accessible platforms for citizens to report transport-related issues or for officials to respond efficiently.

Project Objective:

The goal of this project is to develop **Yetuga**, a web application that:

- Helps users find the most efficient and cost-effective routes using public transport (minibuses, public buses, and light rail).
- Allows citizens to report roadblocks, fare disputes, and other issues.
- Enables transport officers to manage routes, monitor reports, and update fare details.
- Optionally, supports business owners to list food spots, cafés, game zones and other urban services so that users find resourses or informations on where to eat , rest , play on their route

System Functionalities:

users

- Register / Login
- Search for taxi/bus/train routes from point A to B
- View fare estimates, route type, and travel time
- Submit complaints on drivers or reports (roadblock, fare dispute)
- View nearby businesses (optional)
- Resource Discovery - Search for nearby coffee shops, parks, ATMs along the route.
- Posts and views reviews on post businesses

2. Transport Officer

- Login
- Add/Edit/Delete transport routes
- Update fare information or route status (e.g., active, blocked)
- View and respond to citizen reports
- Assign traffic polices to the busy routs
- Assign more public buses and taxi drivers to the route with many usears
- **Emergency updates**: Close routes for events/accidents (changes reflect in real-time for users).

3. Merchant (Optional)

- Register/Login
- Add a business listing (type, location, description)
- Profile Management
- Register business (coffee shop, mall, etc.) → Admin approves.
- Post promotions ("Happy Hour 4-6 PM!").
- User Engagement
- Respond to reviews/complaints

Why Yetuga Matters

- **Saves Time & Money**: No more guessing routes or fares.
- **Empowers Authorities**: Officers gain data-driven control over transport.
- **Boosts Local Economy**: Merchants connect with commuters.

Use Cases

1. **User Registration / Login:**
   - **Use Case**: Users can register and log in to access personalized features.
   - **Actors**: User
   - **Precondition**: The user is on the login page.
   - **Main Flow**:
     1. The user enters their credentials (username/password).
     2. The system verifies the credentials.
     3. The user is granted access or denied.
   - **Postcondition**: The user is either logged in or remains on the login page.
2. **Search for Routes:**
   - **Use Case**: Users can search for transport routes from point A to point B.
   - **Actors**: User
   - **Precondition**: The user is logged in.
   - **Main Flow**:
     1. The user enters the starting point and destination.
     2. The system calculates available routes based on transport types (bus, taxi, etc.).
     3. The system displays the optimal routes, including fares, travel time, and distance.
   - **Postcondition**: The user is shown the best routes.
3. **Submit Complaint or Report:**
   - **Use Case**: Users can report issues with the transport system, such as roadblocks or disputes with drivers.
   - **Actors**: User
   - **Precondition**: The user is logged in.
   - **Main Flow**:
     1. The user selects the type of complaint (e.g., fare dispute, roadblock).
     2. The user enters the details of the complaint.
     3. The system records the complaint and notifies the transport officer.
   - **Postcondition**: The complaint is logged for review by the transport officer.
4. **Manage Routes (Transport Officer):**
   - **Use Case**: Transport officers can add, edit, or delete transport routes.
   - **Actors**: Transport Officer
   - **Precondition**: The officer is logged in with appropriate privileges.
   - **Main Flow**:
     1. The officer accesses the route management page.
     2. The officer adds, edits, or deletes routes as necessary.
     3. The system updates the database and notifies users of route changes.
   - **Postcondition**: Routes are updated in the system.
5. **Business Listing (Merchant):**
   - **Use Case**: Merchants can register and list their businesses.
   - **Actors**: Merchant, Admin
   - **Precondition**: The merchant is registered and logged in.
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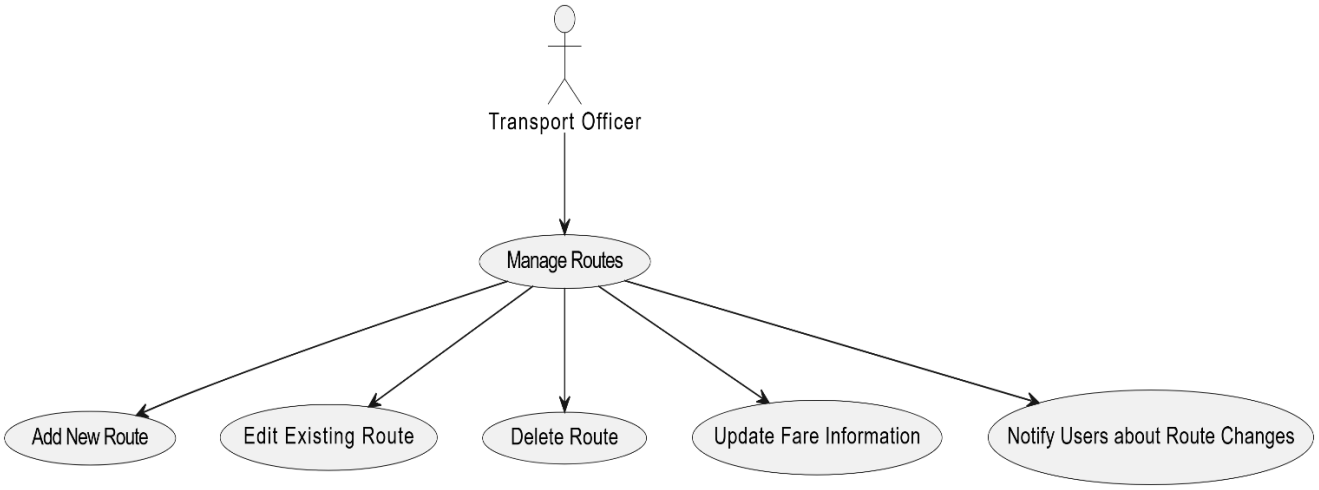
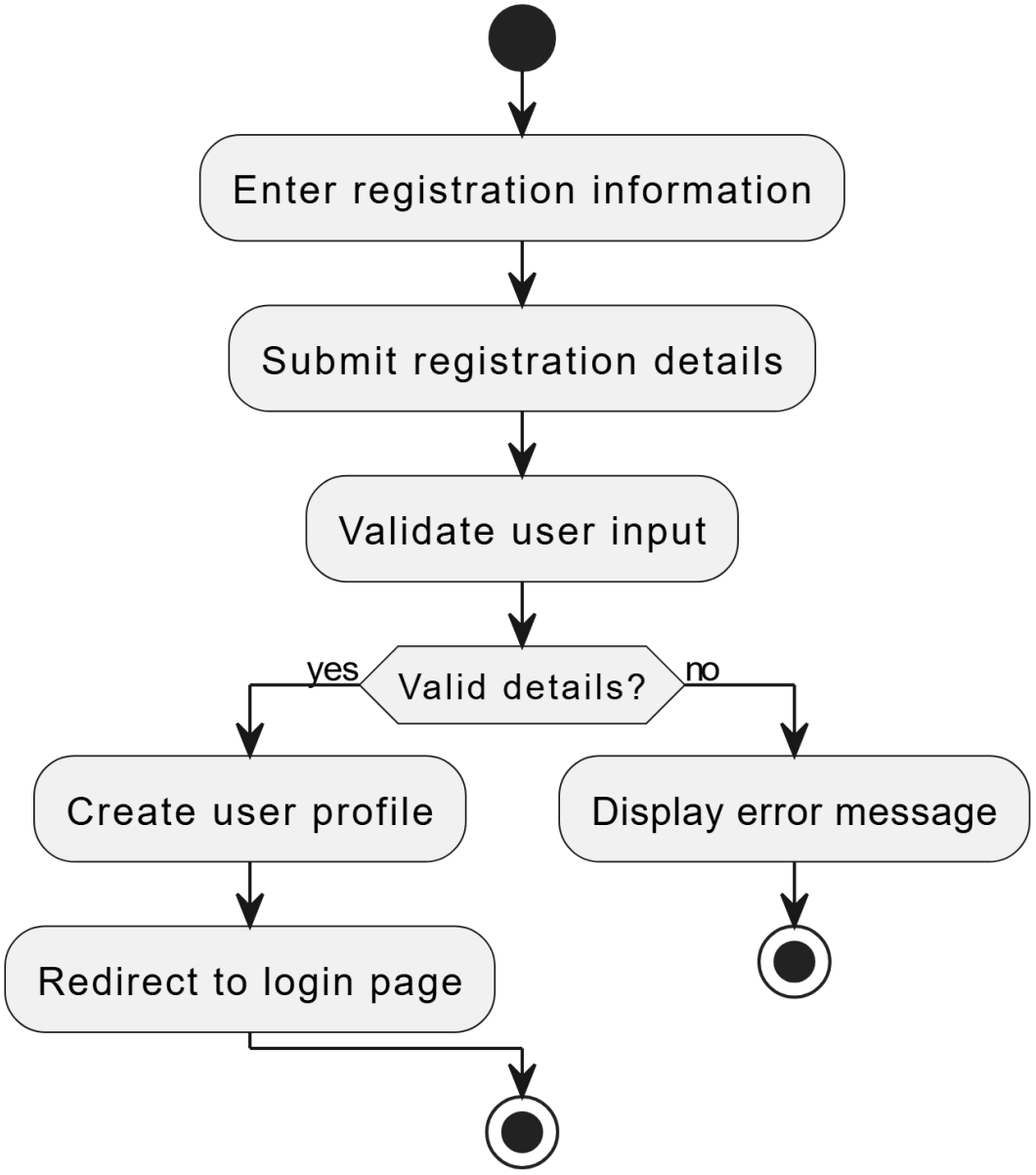
   - **Main Flow**:
     1. The merchant accesses the "Add Business" page.
     2. The merchant submits business details (name, type, location, description).
     3. The admin reviews and approves the listing.
     4. The listing becomes visible to users.
   - **Postcondition**: The business is listed on the platform.

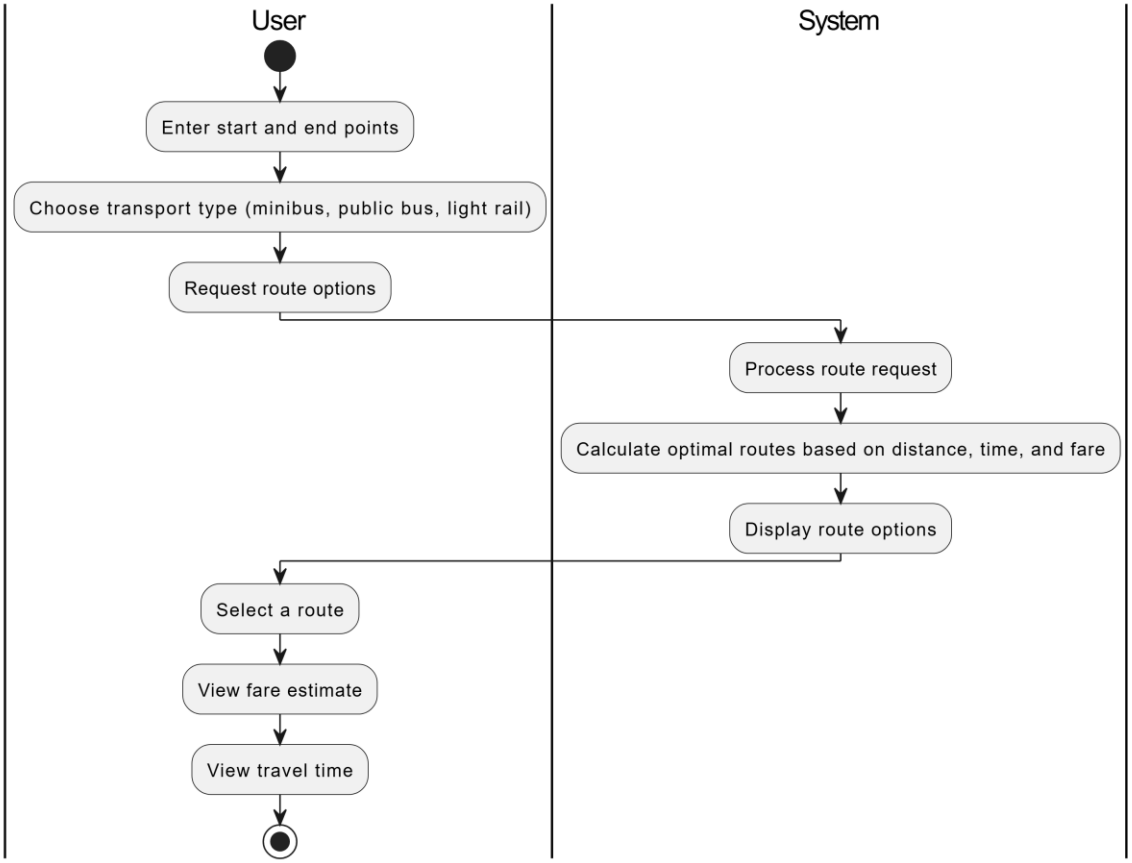


Activities

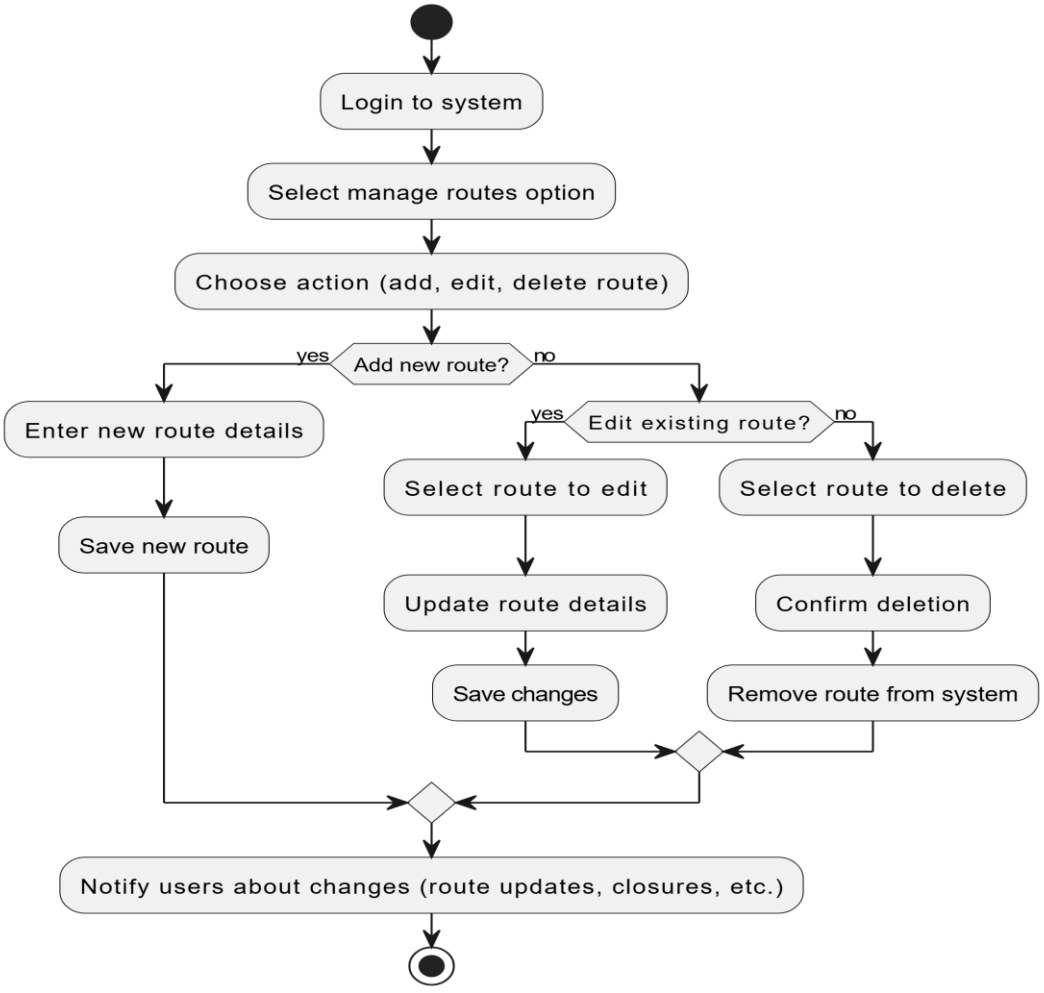
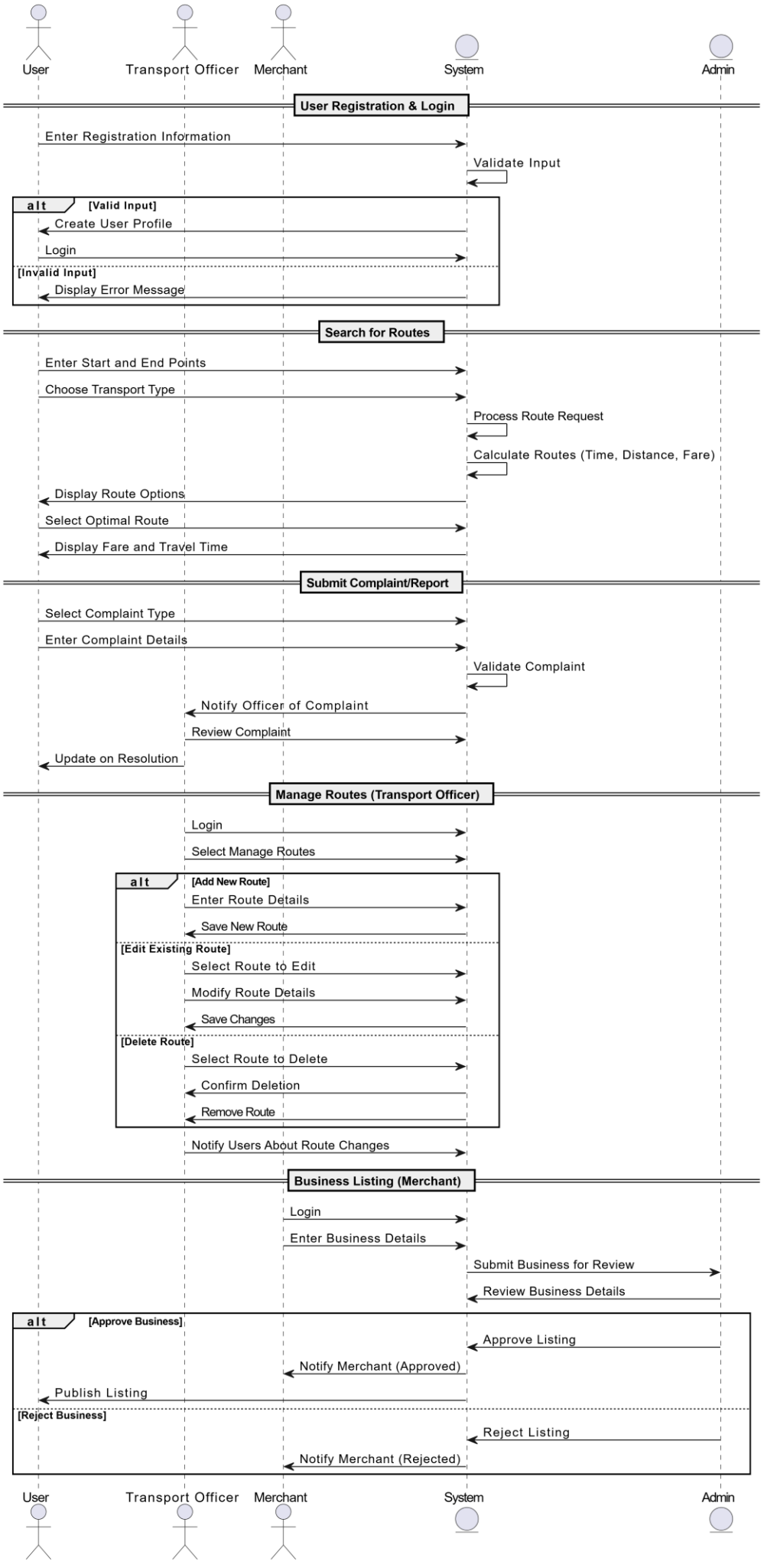
1. **User Registration / Login Activity Diagram**



2. **Search for Routes Activity Diagram**



4. **Manage Routes (Transport Officer)**



Sequence diagram