

## **Travel Agency System Requirements Specification**

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## ***Table of Contents***

<b>Executive Summary</b>	<b>5</b>
<b>Project Overview</b>	<b>5</b>
<b>Product/Service Description</b>	<b>5</b>
<b>Product Context</b>	<b>5</b>
<b>User Characteristics</b>	<b>6</b>
Customers	6
Travel Agents	6
Security	6
Guardian	6
Field Agent	6
<b>Requirements</b>	<b>7</b>
Product Requirements	7
Functional Requirements	7
Non-Functional Requirements	12
User Hierarchy	15
Product Requirements	15
Usability Requirements	15
Performance Requirements	15
Availability	15
Security	16
Organizational Requirements	16
External Requirements	16
<b>Use Cases</b>	<b>17</b>
Registration and Login	17
Homepage	18
Prepayment Tour Activities	22
Postpayment Tour Activities	25
Post Tour Activities	28
Manager	29
Live Assistant Agent Activities	31
Travel Agent	32
Security Agent	34
All Staff Members	34
<b>Diagrams</b>	<b>37</b>
General Use Case Diagram	37
General ER Diagram	38

General Class Diagram	39
Activity Diagrams	40
Registration and Login	40
Homepage	42
Prepayment Tour Activities	49
Postpayment Tour Activities	54
Post Tour Activities	59
Manager	62
Live Assistant Agent Activities	64
Travel Agent Activities	67
Security Agent Activities	70
All Staff Members	71
State Diagrams	73
Registration and Login	73
Homepage	75
Prepayment Tour Activities	82
Postpayment Tour Activities	88
Post Tour Activities	92
Manager Activities	95
Live Assistant Agent Activities	97
Travel Agent Activities	101
Security Agent Activities	103
All Staff Members	104
Sequence Diagrams	107
Registration and Login	107
Homepage	109
Prepayment Tour Activities	115
Postpayment Tour Activities	121
Post Tour Activities	124
Manager Activities	128
Live Assistant Agent Activities	130
Travel Agent Activities	131
Security Agent Activities	133
All Staff Members	134
Collaboration Diagrams	137
Registration and Login	137
Homepage	138
Prepayment Tour Activities	141
Postpayment Tour Activities	144

## *Travel Agency System Requirements Specification*

Post Tour Activities	147
Manager Activities	151
Live Assistant Agent Activities	152
Travel Agent Activities	153
Security Agent Activities	154
All Staff Members	155
Design Patterns	157
Factory Method Pattern	157
Facade Design Pattern	159
Observer Design Pattern	160
Strategy Design Pattern	161

## **Executive Summary**

### **Project Overview**

Our project aims at all travel agency companies together with their clients. We want to create a safe and useful tool with an easy to use interface. It will contain all the necessary features to make a smooth travel experience and a great business asset. The details are explained below.

### **Product/Service Description**

We aim to create a simple and useful software that will be time efficient for both the customer and the travel agency. We need to create an online software system that will work 24 hours. The system must be accessible only to customers over 18 years old so for this there will be a passport or ID verification.

After verifying that the user is over 18 years old, they will be able to create an account. This account will keep track of the history with the agency and after reaching a certain amount of contracts they will receive a 10% discount for their future purchases.

The system will be organized as a step by step process. Firstly they will decide the preferred destination, then a means of transport and lastly a hotel or airbnb. The customer will have an optional feature where they can create their personalized tour guide. By only choosing 3 preferred types of activities and a budget limitation, three personalized tours will be organized for them. This tour will need only two components, the information put by the field agent into the servers and artificial intelligence. It will not only include the tourist spots and restaurants but also the way of going from one place to another starting from the hotel. After choosing the preferred one, the individual must directly book all the needed tickets.

If a customer has a question regarding something specific that is not included on the system, they can directly contact one of the agents in the message button and within a range of 5-10 minutes, one of the agents will reply.

Lastly, a feature that we are implementing on the system is the "track location" feature. This feature will allow one member of the family to be able to keep direct track of the traveler in real time. This will be done for security reasons and to keep parents unconcerned regarding their child's safety in case of school trips. The data will be deleted automatically one week after the individual is returned back home.

### **Product Context**

The Travel Agency Information System is a self-contained solution, but includes multiple external services, includes:

- **Third-party travel Application** (airlines, hotels, car rentals, tours, etc)
- **Payment gateways** (online transactions and invoicing).

- **Customer Relationship Management systems** (handling customer profiles and inquiries).
- **Marketing platforms** (promotions and personalized recommendations).

## User Characteristics

### Customers

- **Types:** Students, faculty, business professionals, and tourists
- **Experience:** Varies between experienced and non-experienced tourists
- **Technical Expertise:** Only basic internet and navigation skills needed
- **General Characteristics:**
  - ◆ Travel Enthusiastic
  - ◆ Organized

### Travel Agents

- **Types:** Customer service representatives, travel consultants, tour operators.
- **Experience:** Trained professionals familiar with travel regulations.
- **Technical Expertise:** Basic technical knowledge
- **General Characteristics:**
  - ◆ Great communication skills
  - ◆ Must have knowledge in all touristic guide assets

### Security

- **Types:** All members of the security staff
- **Experience:** Trained professionals that follow a certain protocol
- **Technical Expertise:** Basic technical knowledge
- **General Characteristics:**
  - ◆ Cold-blooded
  - ◆ Disciplined

### Guardian

- **Types:** Teacher, Parent, Guardian
- **Experience:** None needed
- **Technical Expertise:** Basic technical knowledge
- **General Characteristics:** Trusted

### Field Agent

- **Types:** Local, International
- **Experience:** Trained professionals familiar with the requirements an option needs to have
- **Technical Expertise:** Basic technical knowledge

→ General Characteristics:

- ◆ Knowledge in all touristic areas
- ◆ Disciplined

## Requirements

### Product Requirements

#### Functional Requirements

Process	Req#	Requirement	Comments	Priority	Date Rvrd
Registration and login	REQ-1:	Tourist_Register	The user shall be able to register their account by first inputting a valid email account, a secure enough password. Along with the credentials, the user will also need to accept our terms and agreements. Once the email is confirmed to be legitimate through a link sent to their inbox, the account details will be stored onto a long term database so they can log in in the future. If they wish, the user can also opt out of creating an account manually and sign up through Google, which automatically links the new account to their Google account. This facilitates signing up and logging in.	1	03/10/2025
	REQ-2:	Tourist_Login	The user can log in at any time because the system must store customer accounts and credentials. If their account is linked to their Google account, they have to log in through Google.	1	03/10/2025
Homepage	REQ-3:	Display_Past_Trips	Once logged in, the user is redirected to the homepage, where the following options shall be available. The system shall display all past trips reserved with the agency, tours the user has picked previously and the dates when they have done so. The system must be able to store the correct data regarding the	2	03/10/2025

*Travel Agency System Requirements Specification*

			previous tours and dates.		
	REQ-4:	Gift_Card	Users should be able to send each other gift cards, of different types and values, through the software.	3	03/10/2025
	REQ-5:	Calculate_Discount	The system shall offer the most loyal clients discounts according to the number of trips booked with the agency.	3	03/10/2025
	REQ-6:	Live_Assistance	There is a sidebar available on the side of the screen, which enables the user to communicate with an agent if they wish to. The operator will receive a notification every time a customer needs assistance so that they can communicate in real time about any questions or help that the customer may need.	3	3/17/2025
	REQ-7:	Start_New_Tour	This is a feature that will initiate the start of a new full tour. It will automatically take as a guardian the person selected in the security assistant, if one is chosen. The user must enter the destination, budget per person, date planned and number of people.	1	
	REQ-8:	Security_Assistance	Upon creating the account, the user has the option to permit the system to track their location during their ensued trip. Once they have agreed to having a guardian, they need to fill a form with the guardian's legal and contact information. This enables the specified client's guardian to track the client during their trip. The guardian has to have an account in order to track the client. They will get sent a private link which will redirect them to the live location of the client. The guardian must be able to contact a security agent if the tracker is turned off or in case of security risks with the client, for example if they cannot contact them or they see on the live map that the client is in a suspicious zone.	3	03/10/2025

## Travel Agency System Requirements Specification

Pre- payment tour activities	<b>REQ-9:</b>	Public_Transportation	The system shall determine the shortest route according to user input destinations (for example: from airport to hotel). After determining the route, it shall calculate costs and or the time needed according to the means of transportation. In order to implement this feature, the system shall use a Google Maps API.	1	03/10/2025
	<b>REQ-10:</b>	Car_Rental	If the customer does not want to travel using the public transportation options once they have arrived, they can choose to rent a car through the different rental companies we have enabled to work with us.	2	03/10/2025
	<b>REQ-11:</b>	Reserve_Accommodation	The system shall display the most suitable hotel according to customer needs. For example, the user can filter the hotels in the area they have booked the tour in according to distance, price, relevance, etc.	2	03/10/2025
	<b>REQ-12:</b>	Book_TourPackage	The system should display three personalized tours based on the input interests of the user and the user shall be able to book the chosen tour tickets in the system. The tour doesn't necessarily need to have attractions that need tickets making it possible for customers to get free personalized tours as well.	3	03/10/2025
	<b>REQ-13:</b>	OnlinePayment_And_EmailReceipt	The customer is able to pay online for everything they have chosen that has the ability to be prepaid. Afterward, the software is able to generate a receipt and send a confirmation email with it. To implement the online payment, the system shall use a payment gateway API, like PayPal or Stripe.	3	03/10/2025
	<b>REQ-14:</b>	Payment_Plans	There will be different payment plans so the users can pay in installments. The greater the installment, the less time it takes to pay it off, and the less interest that they have to pay in the end.	3	03/10/2025

## Travel Agency System Requirements Specification

Post payment tour activities	REQ-15:	Weather_Alert	Before and during the tour, users will be alerted in real-time for rough weather conditions through email and phone notifications.	3	03/10/2025
	REQ-16:	Cancellation_and_Refund	In case of cancellations on our side, everything will be refunded to the customer 100%.	3	03/10/2025
	REQ-17:	Map_Display	Once the trip has started, the map of the city will be shown where all tour's checkpoints are clearly visible.	2	03/10/2025
	REQ-18:	ToDo_List	After the tour is fully booked a to-do list will be displayed until the date of the trip.	2	03/10/2025
Post-Tour Activities	REQ-19:	Refer_a_Friend	After the trip, the user can send a link, generated from the software, to their friend, which grants them a 10% discount on the tour the user had just gone on.	3	03/10/2025
	REQ-20:	Review	After the trip, the user can leave a review under each of the options of the tour they chose (transport, accommodation, attractions/activities)	3	03/10/2025
	REQ-21:	Software_Feedback	After the trip, the user should give a small feedback for the app for the development team to know so that improvement is made when needed. For example, if the system was easy to use, responsive, quick or laggy etc.	3	03/10/2025
Manager Activities	REQ-22:	Manage_Employees	The manager is able to create and delete accounts for the employees. Because this software is customer-oriented, the staff accounts should be created by the manager and handed out accordingly. These accounts have a different interface and other features and permissions.	1	3/17/2025

## Travel Agency System Requirements Specification

	<b>REQ-23:</b>	Gather_Statistics	The manager can see the expenses and the profits in any specified time range. This data is recorded whenever a purchase from a customer is made, while also taking in account the recurring expenses for the APIs, salaries, payment processing, ads, etc.	1	3/17/2025
Live Assistant Agent Activities	<b>REQ-24:</b>	Cancel_And_Refund_Customer_Trip	The agent should be able to cancel the customer booking upon authorization from the client.	1	3/17/2025
	<b>REQ-25:</b>	Communicate_with_Customer	The agent shall be notified upon each customer request and should be able to assist him in real time.		
	<b>REQ-26:</b>	Modify_Customer_Trip	The agent should be able to modify the booking upon customer request. They can modify the tour only before the payment. They can only add more to the tour once it is paid for.	1	3/17/2025
	<b>REQ-27:</b>	Add_New_Option	The travel agent is the one that goes to try new transportation and accommodation facilities together with new tourist attractions that have expressed interest in working with the travel agency. If they pass all qualifications, the travel agent adds these into the software. They can also add tourist attractions that do not need any tickets. It is important to add these as separate and not only as a package in case the user wants to add something to the chosen package.	1	
Travel Agent Activities	<b>REQ-28:</b>	Create_Tour_Packages	The travel agent shall be able to create tour packages with various attractions that should differ from other packages in cost, destination, and interest.	1	
	<b>REQ-29:</b>	Guardian_Contact	Security shall be able to contact the guardian in real time in order to handle any security situations of the customer.	1	3/17/2025

## Travel Agency System Requirements Specification

All Staff	REQ-30:	View_Posted_Tour_Packages	Although the travel agent is the only one with access to modifying and adding new tour packages, all staff members must be able to view posted tours. This will help them assist customers better and update them with any changes and new entries in the company.	1	3/23/2025
	REQ-31:	View_Customer_Details	<p>This feature allows a staff member to manage and view the list of all tours that have been posted to the system. The staff member can see key tour details including tour name, destination, departure and return dates, price, available seats, transport method, accommodation details, and the assigned travel agent.</p> <p>The staff member can interact with the list using advanced options:</p> <ul style="list-style-type: none"> <li>- Filter tours by destination, date range, agent, or status.</li> <li>- Sort tours based on date, popularity, or profitability.</li> <li>- Search by keywords (e.g., tour title or destination).</li> <li>- View full details of a selected tour.</li> <li>- Export the list of tours to PDF or CSV.</li> <li>- Flag tours for review if data appears outdated or inconsistent.</li> <li>- Leave internal comments for the responsible travel agent.</li> </ul>	1	3/17/2025

### Non-Functional Requirements

Category	Req#	Requirement	Comments	Priority	Date Reviewed	SME Reviewed / Approved
Security	REQ-1:	Data_Encryption	The system should be secure and protect user data, including financial information.	1	10/03/2025	
	REQ-2:	Two-factor_Authentication	The system will require a double confirmation from the user to protect from data theft.	1	10/03/2025	

*Travel Agency System Requirements Specification*

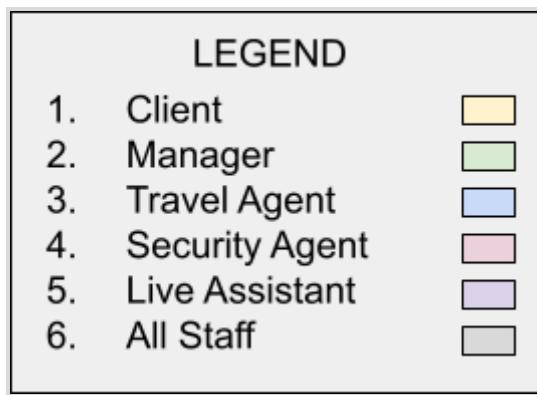
	<b>REQ-3:</b>	Fraud_Detection	The system must flag suspicious transactions to prevent fraud.	1	10/03/2025	
	<b>REQ-4:</b>	Safety_of_client	System client GPS tracking feature must be accessible at all times.	1	10/03/2025	
	<b>REQ-5:</b>	Payment_Security_Compliance	The system must process credit card payments through secured gateways.	1	10/03/2025	t
<b>Performance</b>	<b>REQ-6:</b>	Responsiveness	The system should respond and handle user requests quickly.	1	10/03/2025	
	<b>REQ-7:</b>	Completion_time	Form completion time(e.g., for booking) should be easy and quick.	1	10/03/2025	
	<b>REQ-8:</b>	Scalability	The system should handle high volume of users and transactions and accommodate future growth.	1	10/03/2025	
<b>Compliance and legal</b>	<b>REQ-9:</b>	Age_requirement	The system must validate that the individual that is trying to create an account in the system must be over 18 years old.	1	10/03/2025	
	<b>REQ-10:</b>	Data_deletion	Personal user data should be deleted after one year(except for financial transactions).	2	10/03/2025	
	<b>REQ-11:</b>	Tracker_consent	Guarded individuals and guardians must sign a consent contract before going on the trip.	1	10/03/2025	
	<b>REQ-12:</b>	Personal_privacy	The system deletes customer data related to trips one week after the	1	10/03/2025	

*Travel Agency System Requirements Specification*

			trip has finished in order to guarantee privacy.			
	<b>REQ-13:</b>	Design	The design has to be simple and intuitive, following a systematic aesthetic.	2	10/03/2025	
	<b>REQ-14:</b>	Accessibility	The system should be accessible to users with disabilities, including TTS and zooming options.	1	10/03/2025	
	<b>REQ-15:</b>	Maintainability	The system should be easy to maintain and modify.	1	10/03/2025	
	<b>REQ-16:</b>	Compatibility	The system should function on various operating systems and devices.	1	10/03/2025	
<b>Usability</b>	<b>REQ-17:</b>	Interface	The software should be easy to use, efficient and should provide a good user experience for employees and customers.	1	10/03/2025	
	<b>REQ-18:</b>	Navigation	Should be easy to navigate for both first-time and frequent users.	1	10/03/2025	
	<b>REQ-19:</b>	Keyboard-accessible	All buttons should be accessible from the keyboard.	2	10/03/2025	
	<b>REQ-20:</b>	Shortcut_keys	The system should support shortcut keys for frequent actions.	3	10/03/2025	
	<b>REQ-21:</b>	Autocorrection	The system should autocorrect and handle input mishaps(e.g.,case sensitivity)	2	10/03/2025	

	<b>REQ-22:</b>	Suggestions	The system should suggest correct values for input.	3	10/03/2025	
	<b>REQ-23:</b>	Internet_site	The system shall be linked to the internet		17/03/2025	
	<b>REQ-24:</b>	Online Payment Methods	Visa Card, Paypal, Apple Pay	1	10/03/2025	

## User Hierarchy



We have color-coded the functional requirement with the user hierarchy in the table above.

## Product Requirements

### Usability Requirements

- Simple navigation: Booking a trip will be a simple step by step process.
- Forms that are easy to use: Information entry forms for reservations and travel should be straightforward.
- Accessibility: The system must be easy to use and offer accessibility features (such as color filters for users who are colorblind) for people with impairments.

### Performance Requirements

- Response time: The system ought to be quick to process transactions and provide search results.
- Scalability: The system must be able to effectively manage a large number of users and transactions. It ought to be built to handle future increases in usage.

### Availability

- General availability requirements related to uptime

- Disaster recovery: Daily backup
- Monitoring and alerts
- Scalability

## **Security**

- Data security: All user data, including financial data, must be safeguarded by the system. Credit card numbers and passwords are encrypted as part of this.
- User authentication: To avoid unwanted access, secure login procedures have to be put in place.
- System authorization: Access controls ought to be enforced by the system according to user roles and permissions.

## **Organizational Requirements**

- Data Protection & Privacy
  - ◆ Compliance with Data Protection Laws
  - ◆ Right to Access and Erasure
  - ◆ Secure Payment Processing
- Business Licensing
  - ◆ Validation of Business License
- Consumer Rights
  - ◆ Terms and Conditions
  - ◆ Refund and Cancellation
- Employee Regulations
  - ◆ Employee Records and Contracts
- Accessibility Laws
  - ◆ Website Accessibility
  - ◆ Non-Discriminatory Booking

## **External Requirements**

- Legal and Regulatory Requirements
- Ethical Requirements

## Use Cases

### Registration and Login

UC-1

UC name	<i>UC-1: User_Register</i>
Summary	<i>The user shall be able to register their account by first inputting a valid email account, a secure enough password. Along with the credentials, the user will also need to accept our terms and agreements. Once the email is confirmed to be legitimate through a link sent to their inbox, the account details will be stored onto a long term database so they can log in in the future. If they wish, the user can also opt out of creating an account manually and sign up through Google, which automatically links the new account to their Google account. This facilitates signing up and logging in.</i>
Dependency	<i>The user needs to have an email account.</i>
Actors	<i>User; System</i>
Preconditions	<i>The user clicks the “Signup” button.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The user enters registration credentials or signs up through social media.</i></li> <li>2. <i>The system verifies input data.</i></li> <li>3. <i>The system stores user data in the database.</i></li> <li>4. <i>The account was successfully created.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The user enters registration credentials.</i></li> <li>2. <i>The system verifies input data.</i></li> <li>3. <i>The system detects invalid data.</i></li> <li>4. <i>The system displays an error message and requests corrections.</i></li> </ol>
Non-functional Requirements	<i>Data_Encryption, Keyboard_Accessibility, Personal_Privacy, Interface, Navigation, Shortcut_Keys, Internet_Site; Age_Requirement</i>
Postconditions	<i>The user account is created successfully.</i>

UC-2

UC name	<i>UC-2: User_Login</i>
Summary	<i>The user can log in at any time because the system must store customer accounts and credentials. If their account is linked to their Google account, they have to log in through Google.</i>
Dependency	<i>The user must have an existing account.</i>
Actors	<i>User; System; Social Media Provider</i>

## Travel Agency System Requirements Specification

Preconditions	<i>The user has an existing account.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The user enters credentials or selects social login.</i></li> <li>2. <i>The system validates credentials or redirects the user to a social media provider.</i></li> <li>3. <i>If social login, the provider authenticates the user and redirects back.</i></li> <li>4. <i>The system grants access to the user.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The user enters incorrect credentials or denies social authentication.</i></li> <li>2. <i>The system displays an error message.</i></li> </ol>
Non-functional Requirements	<i>Two-factor Authentication; Data Encryption, Keyboard Accessibility, Personal Privacy, Interface, Navigation, Shortcut Keys, Internet Site</i>
Postconditions	<i>The user is logged in successfully.</i>

### **Homepage**

UC-3

UC Name	<i>UC-3: Display Past Trips</i>
Summary	<i>Once logged in, the user is redirected to the homepage, where the following options shall be available. The system shall display all past trips reserved with the agency, tours the user has picked previously and the dates when they have done so. The system must be able to store the correct data regarding the previous tours and dates.</i>
Dependency	<i>The user is logged in.</i>
Actors	<i>User; System</i>
Preconditions	<i>The user clicks the option that displays past trips on the homepage.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The system retrieves past trips' details from the database.</i></li> <li>2. <i>The system displays all past trips with all details recorded.</i></li> <li>3. <i>The user can leave a review if they click on a trip.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The system retrieves past trips' details from the database.</i></li> <li>2. <i>If no trips are found, the system displays "No trips found."</i></li> <li>3. <i>The user goes back to the homepage.</i></li> </ol>
Non functional requirements	<i>Responsiveness; Availability; Scalability; Internet Site; Navigation; Interface</i>
Postconditions	<i>The user has viewed their past trips.</i>

UC-4

UC Name	<i>UC-4: Gift Card</i>
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## Travel Agency System Requirements Specification

Summary	<i>Users should be able to send each other gift cards, of different types and values, through the software.</i>
Dependency	<i>The user is logged in and the user has an online payment method available.</i>
Actors	<i>User; System, Recipient</i>
Preconditions	<i>The user clicks the gift card option.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The user enters recipient details.</li> <li>2. The user selects the gift card type and amount.</li> <li>3. The user goes through the payment process.</li> <li>4. The system sends the gift card to the recipient.</li> <li>5. The system sends a confirmation email to both parties.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The user enters recipient details.</li> <li>2. The user selects the gift card type and amount.</li> <li>3. The user goes through the payment process.</li> <li>4. If payment fails, the system shows an error message, a cancel button, and a retry button.</li> </ol>
Non functional requirements	<i>Responsiveness; Availability; Scalability; Internet_Site; Navigation; Interface; Data_Encryption; Online_Payment</i>
Postconditions	<i>The user has sent their friend a gift card.</i>

UC-5

UC Name	<i>UC-5: Apply Loyalty Discount</i>
Summary	<i>The system shall offer the most loyal clients discounts according to the number of trips booked with the agency.</i>
Dependency	<i>The user is logged in and has booked trips before.</i>
Actors	<i>User; System</i>
Preconditions	<i>The user clicks the discount calculating option on the homepage.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The system checks the database for past bookings.             <ol style="list-style-type: none"> <li>1.1. If the user has booked five trips before, a 10% discount is calculated.</li> <li>1.2. If the user has booked fifteen trips before, a 20% discount is calculated.</li> </ol> </li> <li>2. The system generates a discount coupon and sends it to the user.</li> <li>3. The user activates the coupon and it gets applied to their next booking.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The system checks the database for past bookings.</li> <li>2. The system calculates a discount percentage.</li> <li>3. If the user doesn't qualify, the system displays "No discount available yet."</li> </ol>
Non functional requirements	<i>Responsiveness; Availability; Scalability; Internet_Site; Navigation; Interface; Data_Encryption;</i>

## Travel Agency System Requirements Specification

Postconditions	<i>A discount is applied to the user's next trip.</i>
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UC-6

UC Name	<b>UC-6: Live Chat with Agent</b>
Summary	<i>There is a sidebar available on the side of the screen, which enables the user to communicate with an agent if they wish to. The operator will receive a notification every time a customer needs assistance so that they can communicate in real time about any questions or help that the customer may need.</i>
Dependency	<i>The user is logged in.</i>
Actors	<i>User; System, Live Assistant</i>
Preconditions	<i>The user clicks the sidebar of the live assistance chat.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The system notifies all agents in the company.</i></li> <li>2. <i>The system connects the agent and the client.</i></li> <li>3. <i>The user asks a question.</i></li> <li>4. <i>The agent responds in real time.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The system notifies all agents in the company.</i></li> <li>2. <i>If it's not in the agents' work shifts, the system displays "An agent will reach out during "shift_hours".</i></li> <li>3. <i>The user closes the chat.</i></li> </ol>
Non functional requirements	<i>Responsiveness; Availability; Scalability; Internet_Site; Navigation; Interface; Data_Encryption;</i>
Postconditions	<i>The user has gotten the help they needed from the agent.</i>

UC-7

UC Name	<b>UC-7: Start New Tour</b>
Summary	<i>This is a feature that will initiate the start of a new full tour. It will automatically take as a guardian the person selected in the security assistant, if one is chosen. The user must enter the destination, budget per person, date planned and number of people.</i>
Dependency	<i>The user has an account.</i>
Actors	<i>User; System</i>
Preconditions	<i>The user selects the option to start a new tour.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The system prompts the user to enter the required details:</i> <ul style="list-style-type: none"> <li>- Destination</li> <li>- Budget per person</li> <li>- Planned date</li> <li>- Number of people</li> </ul> </li> <li>2. <i>The system verifies the input (if it's within a sound budget) and confirms the details.</i></li> </ol>

## Travel Agency System Requirements Specification

	<p>3. If a guardian was selected upon signup, they are automatically assigned.</p> <p>4. The system saves the tour details and notifies the user.</p>
Description of the Alternative Sequence	<p>1. The system prompts the user to enter the required details:</p> <ul style="list-style-type: none"> <li>- Destination</li> <li>- Budget per person</li> <li>- Planned date</li> <li>- Number of people</li> </ul> <p>2. If a required field is empty, the system cannot proceed so it asks the user again.</p> <p>3. If the user cancels it, nothing is saved.</p>
Non functional requirements	Usability; Interface; Navigation; Performance; reliability.
Postconditions	A new tour is successfully created.

### UC-8

UC Name	UC-8: Guardian Tracking and Security Assistance
Summary	Upon creating the account, the user has the option to permit the system to track their location during their ensued trip. Once they have agreed to having a guardian, they need to fill a form with the guardian's legal and contact information. This enables the specified client's guardian to track the client during their trip. The guardian does not have to have an account in order to track the client. They will get sent a private link which will redirect them to the live location of the client. The guardian must be able to contact a security agent if the tracker is turned off or in case of security risks with the client, for example if they cannot contact them or they see on the live map that the client is in a suspicious zone..
Dependency	The user is logged in and has agreed to their location being tracked, the guardian has an existing account.
Actors	User; System, Guardian, Security Agent
Preconditions	The user clicks the tracking option on the homepage.
Description of the Main Sequence	<p>1. The user clicks the tracking option on the homepage.</p> <p>2. The system checks if the user has agreed to having their location tracked.</p> <p>3. The user inputs guardian details.</p> <p>4. The system saves guardian details in the database and generates a tracking link.</p> <p>5. The system sends the link to the guardian.</p> <p>6. The guardian receives the live location of the user during the trip.</p> <p>7. The guardian monitors the client during their trip.</p> <p>8. If the tracker is working, the guardian continues monitoring.</p> <p>9. The guardian exits the app.</p>
Description of the Alternative Sequence	<p>1. The user clicks the tracking option on the homepage.</p> <p>2. The system checks if the user has agreed to having their location tracked.</p> <p>3. If the user hasn't allowed tracking, the user is asked to do so.</p> <p>4. The user inputs guardian details.</p> <p>5. If the guardian does not have an account, they are redirected to a registration page.</p>

	<p>6. If the tracker isn't working or the client is in a suspicious location, the guardian can choose to contact the security agent.</p> <p>7. The system notifies a security agent.</p> <p>8. The security agent reviews the case and takes appropriate action.</p>
Non functional requirements	<i>Usability; Interface; Navigation; Performance; Reliability; Tracker_Consent</i>
Postconditions	<i>The guardian can monitor the client's live location and take action if necessary.</i>

### **Prepayment Tour Activities**

UC-9

UC Name	<i>UC-9: Public Transportation</i>
Summary	<i>The system shall determine the shortest route. After determining the route, it shall calculate costs and or the time needed according to the means of transportation. This is a service that the user does not have to pay the company for, it is simply there to make their tour more enjoyable. In order to implement this feature, the system shall use a Google Maps API.</i>
Dependency	<i>The user is logged in.</i>
Actors	<i>Customer; System; Google Maps API</i>
Preconditions	<i>The user has inputted the budget, date, number of people, and destination.</i>
Description of the Main Sequence	<p>1. Display transport home-airport/port.</p> <p>2. If selected, lower budget. Display plane/ship companies available for the date &amp; destination.</p> <p>3. Lower budget according to chosen ticket. Display options from airport/port to destination's city center (bus, metro, taxi).</p> <p>4. If any option is selected, lower budget. Continue with the accommodation step. Else, continue with the rent a car step.</p>
Description of the Alternative Sequence	<p>1. if the destination is within country, display options of transport (taxi, bus, van)</p> <p>2. If any are chosen, lower budget. Else, continue with the rent a car step.</p>
Non functional requirements	<i>Safety_Of_Client; Responsiveness; Completion_Time; Interface; Navigation; Internet_Site</i>
Postconditions	<i>The user is familiar with its options regarding all kinds of public transportation.</i>

UC-10

UC Name	<i>UC-10: Car_Rental</i>
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## Travel Agency System Requirements Specification

Summary	<i>The system shall present the user with the option of different car rental options in the destination city.</i>
Dependency	<i>The user is logged in and has declined the public transportation option.</i>
Actors	<i>Customer, rental companies working with the travel agency</i>
Preconditions	<i>The user has inputted the budget, date, number of people, and destination.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>Display rental car options that vary in cost</i></li> <li>2. <i>If selected, lower budget.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>Display options of transport (taxi, van)</i></li> <li>2. <i>If every option is declined, automatically continue with the accommodation step assuming that the customer has private transport facilities.</i></li> </ol>
Non functional requirements	<i>Safety_Of_Client; Responsiveness; Completion_Time; Interface; Navigation; Internet_Site</i>
Postconditions	<i>The user is familiar with all ways of transportation.</i>

### UC-11

UC Name	<b>UC-11: Reserve_Accommodation</b>
Summary	<i>The system shall display the most suitable hotel according to customer needs. For example, the user can filter the hotels in the area they have booked the tour in according to distance, price, relevance, etc.</i>
Dependency	<i>The user is logged in.</i>
Actors	<i>Customer, hotels &amp; airbnb-s working with the travel agency , system</i>
Preconditions	<i>A reasonable budget must be left for the software to provide at least one option to the user. The user will be required to add more money to the budget or change the transport chosen.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>Display accommodation options.</i></li> <li>2. <i>User filters according to distance from city center/ price</i></li> <li>3. <i>Lower budget according to chosen option</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>Display accommodation options.</i></li> <li>2. <i>All options are declined by the user.</i></li> <li>2. <i>Automatically continue with the tour step assuming that the customer has private accommodation facilities.</i></li> </ol>
Non functional requirements	<i>Safety_Of_Client; Responsiveness; Completion_Time; Interface; Navigation; Internet_Site</i>
Postconditions	<i>The user has chosen their preferred accommodation.</i>

### UC-12

## Travel Agency System Requirements Specification

UC Name	<i>UC-12: Book_Tour_Package</i>
Summary	<i>The system should display three personalized tours based on the input interests of the user and the user shall be able to book the chosen tour tickets in the system. The tour doesn't necessarily need to have attractions that need tickets making it possible for customers to get free personalized tours as well.</i>
Dependency	<i>The user is logged in and has picked three interest Input Choices</i>
Actors	<i>Customer; System; tourist attraction representatives working with the travel agency</i>
Preconditions	<i>The customer must have selected his transport and accommodation before coming to this step.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. User inputs three interests</li> <li>2. Three personalized tours are displayed</li> <li>3. User selects one tour</li> <li>4. User has the opportunity to add additional destinations</li> <li>5. User confirms his choices</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The user inputs three interests.</li> <li>2. Three personalized tours are displayed.</li> <li>3. None is chosen, contact a live assistant.</li> </ol>
Non functional requirements	<i>Safety_Of_Client; Responsiveness; Completion_Time; Interface; Navigation; Internet_Site</i>
Postconditions	<i>The user is provided with a tour that fulfills his preferences and assistance if needed.</i>

### UC-13

UC Name	<i>UC-13: Online_Payment_And_Email_Receipt</i>
Summary	<i>The customer is able to pay online for everything they have chosen that has the ability to be prepaid. Afterward, the software is able to generate a receipt and send a confirmation email with it. To implement the online payment, the system shall use a payment gateway API, like PayPal or Stripe.</i>
Dependency	<i>The user is logged in, and their plan is complete.</i>
Actors	<i>Customer; System;</i>
Preconditions	<i>The customer should have chosen a transportation, accommodation and tour package.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. Review chosen options</li> <li>2. Confirm options</li> <li>3. Choose payment method</li> <li>4. Enter credentials</li> <li>5. Choose "pay all in once"</li> <li>6. Press send receipt to email</li> </ol>

## Travel Agency System Requirements Specification

Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. Review chosen options</li> <li>2. Options not confirmed</li> <li>3. Contact live assistant</li> </ol>
Non functional requirements	<i>Safety_Of_Client; Responsiveness; Completion_Time; Interface; Navigation; Internet_Site; Data_Encryption; Online_Payment_Methods; Two_Factor_Authentication</i>
Postconditions	<i>The user has paid all parts of the selected tour that can be prepaid online.</i>

UC-14

UC Name	<i>UC-14: Payment_Plans</i>
Summary	<i>There will be different payment plans so the users can pay in installments. The greater the installment, the less time it takes to pay it off, and the less interest that they have to pay in the end.</i>
Dependency	<i>The user is logged in, and their plan is complete.</i>
Actors	<i>Customer; System</i>
Preconditions	<i>The customer should have chosen a transportation, accommodation and tour package. Furthermore, the customer must have an online payment method available.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. Select payment plan option</li> <li>2. Choose one of the plans</li> <li>3. Press start plan</li> <li>4. Receive receipt in email</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. Select payment plan option</li> <li>2. Choose one of the plans</li> <li>3. Plans declined</li> <li>4. Contact live agent</li> </ol>
Non functional requirements	<i>Safety_Of_Client; Responsiveness; Completion_Time; Interface; Navigation; Internet_Site; Data_Encryption; Online_Payment_Methods; Two_Factor_Authentication</i>
Postconditions	<i>The user is given the opportunity to pay the plan in small amounts without any interest.</i>

### **Postpayment Tour Activities**

UC-15

UC Name	<i>UC-15: Weather Alert</i>
Summary	<i>Before and during the tour, users will be alerted in real-time for rough weather conditions through email and phone notifications.</i>
Dependency	<i>REQ-2: User_Login, REQ-10: Book_Tours</i>

## Travel Agency System Requirements Specification

<b>Actors</b>	<i>User; System</i>
<b>Preconditions</b>	<i>The user is logged in and has booked a tour. The customer has an active booking, the tour is ongoing.</i>
<b>Description of the Main Sequence</b>	<ol style="list-style-type: none"> <li>1. The system monitors weather conditions in the tour area.</li> <li>2. If rough weather is detected, the system generates an alert.</li> <li>3. The system sends a real-time notification via email and phone.</li> <li>4. The customer receives the alert and takes fitting actions.</li> </ol>
<b>Description of the Alternative Sequence</b>	<ol style="list-style-type: none"> <li>1. The system monitors weather conditions in the tour area.</li> <li>2. If rough weather is detected, the system generates an alert.</li> <li>3. If no rough weather is not detected, no changes in the system.</li> </ol>
<b>Non functional requirements</b>	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time</i>
<b>Postconditions</b>	<i>The customer receives real-time weather updates and can adjust their plans accordingly.</i>

### UC-16

<b>UC Name</b>	<i>UC-16: Cancel And Refund Customer Trip</i>
<b>Summary</b>	<i>This use case allows a customer to cancel a previously booked trip and receive a refund if applicable.</i>
<b>Dependency</b>	<i>REQ-2: User_Login, REQ-10: Book_Tours, REQ-27:View_Customer_Details,</i>
<b>Actors</b>	<i>Customer; Agent; System</i>
<b>Preconditions</b>	<i>The customer has already booked a trip. The user is logged in, has booked a tour and has an online payment method.</i>
<b>Description of the Main Sequence</b>	<ol style="list-style-type: none"> <li>1. The customer requests a cancellation.</li> <li>2. The agent checks if the booking is refundable.</li> <li>3. The agent notifies the customer about refund eligibility.</li> <li>4. If the customer does not proceed, the booking remains active.</li> <li>5. If the customer agrees, the agent confirms the cancellation.</li> <li>6. The agent finalizes the cancellation, updates the system, and informs the customer.</li> </ol>
<b>Description of the Alternative Sequence</b>	<ol style="list-style-type: none"> <li>1. The customer requests a cancellation.</li> <li>2. The agent checks if the booking is refundable.</li> <li>3. If the booking is non-refundable, the agent informs the customer.</li> </ol>
<b>Non functional requirements</b>	<i>Internet_Site; Responsiveness; Completion_Time; Usability; Performance; Online Payment Methods</i>
<b>Postconditions</b>	<i>The trip is successfully canceled, and the customer receives the refund (if applicable).</i>

## UC-17

UC Name	<i>UC-17: Map Display</i>
Summary	<i>Once the trip has started, the map of the city will be shown where all tour's checkpoints are visible.</i>
Dependency	<i>REQ-2: User_Login, REQ-10: Book_Tours</i>
Actors	<i>User; System; Google Maps API</i>
Preconditions	<i>The user is logged in and has booked a tour. The system has access to mapping services.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The system retrieves the tour route.</li> <li>2. The system fetches map data and overlays tour checkpoints.</li> <li>3. The customer views the live map during the trip.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The system retrieves the tour route.</li> <li>2. If the map service is unavailable, the system provides a static map as a backup.</li> <li>3. If GPS tracking fails, the system prompts the user to refresh the connection.</li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance;</i>
Postconditions	<i>The user successfully views the map with tour checkpoints.</i>

## UC-18

UC Name	<i>UC-18: To-Do List</i>
Summary	<i>After booking the tour, the system displays a personalized to-do list to help the customer prepare for their trip.</i>
Dependency	<i>REQ-2: User_Login, REQ-10: Book_Tours,</i>
Actors	<i>User; System</i>
Preconditions	<i>The user is logged in. The customer has successfully booked a tour.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The system confirms the customer's booking.</li> <li>2. The system generates a to-do list based on the tour details.</li> <li>3. The user views the list through their account dashboard.</li> <li>4. The customer checks off completed tasks.</li> <li>5. The system saves and updates progress in the list.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The system confirms the customer's booking.</li> <li>2. The system generates a to-do list based on the tour details.</li> <li>3. If a customer cancels the tour, the system removes the to-do list from their dashboard.</li> </ol>

Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance;</i>
Postconditions	<i>The customer successfully accesses and interacts with their to-do list to prepare for the trip.</i>

### **Post Tour Activities**

UC-19

UC Name	<i>UC-19: Refer A Friend</i>
Summary	<i>The user can send a link to their friend, which grants them a 10% discount.</i>
Dependency	<i>The user must have an account and should have completed a tour.</i>
Actors	<i>Client; System; Referred friend</i>
Preconditions	<i>The client has a past history with the company and clicks the appropriate button.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The system generates a link for referring a friend.</li> <li>2. The friend opens the link and gains a 10% discount.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The system generates a link for referring a friend.</li> <li>2. If the friend does not have an account, they are redirected to a signup page, then they can proceed to using the discount.</li> </ol>
Non functional requirements	<i>Interface; Internet_Site; Navigation; Responsiveness; Completion_Time; Usability; Performance;</i>
Postconditions	<i>The client has successfully sent their friend a tour recommendation.</i>

UC-20

UC Name	<i>UC-20: Review</i>
Summary	<i>After the trip, the user can leave a review under each of the options of the tour they chose (transport, accommodation, attractions/activities)</i>
Dependency	<i>The user is logged in and has just finished a tour.</i>
Actors	<i>Client; System</i>
Preconditions	<i>The user accepts to leave a review.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. Client chooses to rate the tour.</li> <li>2. The client leaves their review under each option of the tour in the small text box.</li> <li>3. The client submits his review.</li> </ol>

## Travel Agency System Requirements Specification

Description of the Alternative Sequence	<i>1. The client does not rate the tour.</i>
Non functional requirements	<i>Interface; Internet_Site; Navigation; Responsiveness; Completion_Time; Usability; Performance</i>
Postconditions	<i>Client has successfully rated and reviewed the tour they chose.</i>

UC-21

UC Name	<i>UC-21: Software_Feedback</i>
Summary	<i>After the trip , the user should give a small feedback for the app for the development team to know so that improvement is made when needed .</i>
Dependency	<i>The user is logged in and has just finished a tour.</i>
Actors	<i>Client; System</i>
Preconditions	<i>The user accepts to write feedback for the software.</i>
Description of the Main Sequence	<i>1. Client chooses to rate the software. 2. Client answers several system-related questions. 3. System records feedback, which gets sent to the development team.</i>
Description of the Alternative Sequence	<i>1. The client does not choose to rate the software.</i>
Non functional requirements	<i>Interface; Internet_Site; Navigation; Responsiveness; Completion_Time; Usability; Performance</i>
Postconditions	<i>Client leaves a review on the system software.</i>

## Manager

UC-22

UC Name	<i>UC-22: Manage Employees</i>
Summary	<i>The manager is able to create and delete accounts for the employees. Because this software is customer-oriented, the staff accounts should be created by the manager and handed out accordingly. These accounts have a different interface and other features and permissions.</i>

## Travel Agency System Requirements Specification

Dependency	<i>The manager has an account.</i>
Actors	<i>Manager; System; Employees</i>
Preconditions	<i>The manager clicks the employee records in order to edit anything.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. Manager logs into the system.</li> <li>2. The manager selects an employee.</li> <li>3. The manager can edit or delete that employee from the records.</li> <li>4. A confirmation message is then popped if it was successful.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. Manager logs into the system.</li> <li>2. The manager presses the “Add” button.</li> <li>3. They complete all needed data.</li> <li>4. They save it into the system.</li> </ol>
Non functional requirements	<i>Data Encryption; Two Factor Authentication; Responsiveness</i>
Postconditions	<i>The manager has updated the employee records successfully.</i>

### UC-23

UC Name	<b>UC-23: Gather Statistics</b>
Summary	<i>The manager can see the expenses and the profits in any specified time range. This data is recorded whenever a purchase from a customer is made, while also taking in account the recurring expenses for the APIs, salaries, payment processing, ads, etc.</i>
Dependency	<i>The manager is logged in and the system must keep records of the customers' purchases.</i>
Actors	<i>Manager; System</i>
Preconditions	<i>The manager clicks the “Statistics” tab.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The manager can choose a specific time range for the requested report.</li> <li>2. The system displays all the records according to the specific time range requested by the manager.</li> <li>3. The system then calculates the official financial report based on net profit, expenses and revenue.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. The manager can choose a specific time range for the requested report.</li> <li>2. No record was found so an empty table with a “not enough records found” is displayed</li> </ol>

Non functional requirements	<i>Data Encryption; Two-Factor Authentication; Responsiveness; Interface; Internet_Site; Navigation</i>
Postconditions	<i>The manager has gotten the financial report they need.</i>

### **Live Assistant Agent Activities**

UC-24

UC Name	<i>UC-24: Cancellation and Refund</i>
Summary	<i>The agent should be able to cancel the customer booking upon authorization from the client.</i>
Dependency	<i>The user is logged in, has booked a tour, and has an online payment method.</i>
Actors	<i>User; System</i>
Preconditions	<i>The customer has an active booking that the agency cancels the tour.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The agency initiates a cancellation request.</li> <li>2. The system processes the cancellation.</li> <li>3. The system calculates the refund(100% of the amount paid).</li> <li>4. The system sends the refund to the user via the payment method they paid with.</li> <li>5. The customer receives a confirmation email about the refund.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>4. The agency initiates a cancellation request.</li> <li>2. The system processes the cancellation.</li> <li>3. The system calculates the refund(100% of the amount paid).</li> <li>4. If the customer's payment method is invalid, the system prompts them to update payment details.</li> <li>5. If the refund process fails, the customer is notified, and manual processing starts.</li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance;</i>
Postconditions	<i>The agent cancels a trip and the customer successfully receives a full refund.</i>

UC-25

UC Name	<i>UC-25: Communicate with Tourist</i>
Summary	<i>The agent shall be notified upon each customer request and should be able to assist him in real time.</i>
Dependency	<i>The agent should be logged in. The agent should have received a notification from the customer.</i>

## Travel Agency System Requirements Specification

Actors	<i>Customer; Agent; System</i>
Preconditions	<i>The customer has submitted a request.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The agent receives notification.</i></li> <li>2. <i>The agent reviews the request.</i></li> <li>3. <i>If the agent can assist immediately, proceed to real-time assistance..</i></li> <li>4. <i>The agent closes the chat box when the whole conversation is over.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The agent receives notification.</i></li> <li>2. <i>The agent reviews the request.</i></li> <li>3. <i>If the agent can assist immediately, proceed to real-time assistance..</i></li> <li>4. <i>Conversation is not fully over so the agent saves the chat in priority.</i></li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance;</i>
Postconditions	<i>The agent has successfully handled the clients' requests for live support.</i>

### UC-26

UC Name	<i>UC-26: Modify Customer Trip</i>
Summary	<i>The agent should be able to modify the booking upon customer request. This will occur while the customer is trying to create a tour. Only in case they want to add something, the agent will modify it even after the tour is paid for.</i>
Dependency	<i>The agent is logged in and talking with a customer who is in the process of booking a trip.</i>
Actors	<i>Agent; Customer; System</i>
Preconditions	<i>Customer requests a modification.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>Agent searches for the current tour that is being reserved under the customer's name</i></li> <li>2. <i>The agent makes the needed modifications.</i></li> <li>3. <i>Agent confirms changes.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>Agent searches for the paid tour under the customer's name</i></li> <li>2. <i>The agent adds the new activities.</i></li> <li>3. <i>Agent confirms changes.</i></li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance</i>
Postconditions	<i>The agent has successfully modified the customer trip based on their preferences.</i>

### Travel Agent

### UC-27

## Travel Agency System Requirements Specification

UC Name	<i>UC-27: Add new option</i>
Summary	<i>The travel agent is the one that goes to try new transportation and accommodation facilities together with new tourist attractions that have expressed interest in working with the travel agency. If they pass all qualifications, the travel agent adds these into the software. They can also add tourist attractions that do not need any tickets. It is important to add these as separate and not only as a package in case the user wants to add something to the chosen package.</i>
Dependency	<i>The agent should be logged in. The new option should have passed all qualifications.</i>
Actors	<i>Agent; System</i>
Preconditions	<i>The agent clicks the “Add option” button.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. Agent adds all data for the new option (type, cost per person, exact location, representative contact and info)</li> <li>2. The system automatically adds a profit to the cost.</li> <li>3. The agent saves changes.</li> <li>4. Option is displayed in the system.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. Agent adds all data for the new option (type, cost per person, exact location, representative contact and info)</li> <li>2. The system automatically adds a profit to the cost.</li> <li>3. The agent saves changes.</li> <li>4. The system displays input error if any data is left incomplete.</li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance</i>
Postconditions	<i>The agent has successfully added travel options to the system.</i>

### UC-28

UC Name	<i>UC-28: Create Tour Packages</i>
Summary	<i>The travel agent shall be able to create tour packages with various attractions that should differ from other packages in cost, destination, and interest.</i>
Dependency	<i>Each component of the package must be registered as an individual option in the software.</i>
Actors	<i>Agent; System</i>
Preconditions	<i>The agent clicks the “Create tour packages” option.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. The agent selects attractions.</li> <li>2. The agent combines transportation, accommodation, and attractions into a package.</li> <li>3. The agent ensures the package differs from existing ones.</li> </ol>

	<ol style="list-style-type: none"> <li>4. <i>The agent sets pricing and package details.</i></li> <li>5. <i>The agent saves the new package in the travel agency's software.</i></li> <li>6. <i>The agent confirms the package is ready for booking.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The agent selects attractions.</i></li> <li>2. <i>The agent combines transportation, accommodation, and attractions into a package.</i></li> <li>3. <i>If the agent has already created that package, the system shows an error.</i></li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Usability; Performance</i>
Postconditions	<i>A unique tour package is successfully created and saved in the system.</i>

### **Security Agent**

UC-29

UC Name	<i>UC-29:Guardian Contact</i>
Summary	<i>Security shall be able to contact the guardian in real time in order to handle any security situations of the customer.</i>
Dependency	<i>REQ-2: User_Login, REQ-7: Security_Assistance, REQ-29: Access_All_Customer_Data</i>
Actors	<i>Security Agent; Guardian, System</i>
Preconditions	<i>The customer must have a guardian. The security agent must have received an alert from the guardian or seen unusual activities from the customer.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. <i>The guardian sends a request to contact the security agent.</i></li> <li>2. <i>The system connects the security agent with the guardian.</i></li> <li>3. <i>The security agent communicates with the guardian regarding the security situation.</i></li> <li>4. <i>Security agent takes necessary action.</i></li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. <i>The guardian sends a request to contact the security agent.</i></li> <li>2. <i>The security agent is unavailable.</i></li> <li>3. <i>The system records the issue and logs for security agents to see when available.</i></li> </ol>
Non functional requirements	<i>Interface; Navigation; Internet_Site; Responsiveness; Completion_Time; Safety_Of_Client; Data_Encryption</i>
Postconditions	<i>The agent has taken appropriate action for the security of the customer.</i>

### **All Staff Members**

UC-30

## Travel Agency System Requirements Specification

UC Name	<i>UC-30: Access All Tourist Data</i>
Summary	<i>All staff members must be able to see the live location of the customer, all booking information of that trip, contact of hotel, contact of local police</i>
Dependency	<i>The customer must have an account in our system.</i>
Actors	<i>All staff members; System; Customer; Guardian</i>
Preconditions	<i>Staff members search for a customer's name.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. A page with the customer's data is shown (personal information, past trips, current trip with detailed data of each step of the tour, live location in map, contact of the hotel and the local police, linked guardian (if exists))</li> <li>2. Staff members can directly call the local police/guardian through the app.</li> <li>3. Once they have gotten the needed information, they can close the tab.</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. A page with the customer's data is shown (personal information, past trips)</li> <li>2. Once they have had a full view of the information, they can close the page.</li> </ol>
Non functional requirements	<i>Safety_Of_Client; Data_Encryption; Interface; Navigation; Internet_Site; Responsiveness; Usability;</i>
Postconditions	<i>Staff members have had a clear view of the customers history with the agency and are able to assist in case of security alerts.</i>

### UC-31

UC Name	<i>UC 31: View posted tour packages</i>
Summary	<i>The manager can view the posted tour package so they can further assist the customers with a better experience.</i>
Dependency	<i>The agent must be logged in.</i>
Actors	<i>Agent; System</i>
Preconditions	<i>Tour packages must already be existent in the system to view tour packages.</i>
Description of the Main Sequence	<ol style="list-style-type: none"> <li>1. Agent access the 'posted tours' tabs</li> <li>2. The systems displays the posted tours currently recorded</li> <li>3. Agent can filter, sort, search, and export tours</li> </ol>
Description of the Alternative Sequence	<ol style="list-style-type: none"> <li>1. Agent access the 'posted tours' tabs</li> <li>2. There are no posted tours, so the system displays an error message.</li> </ol>

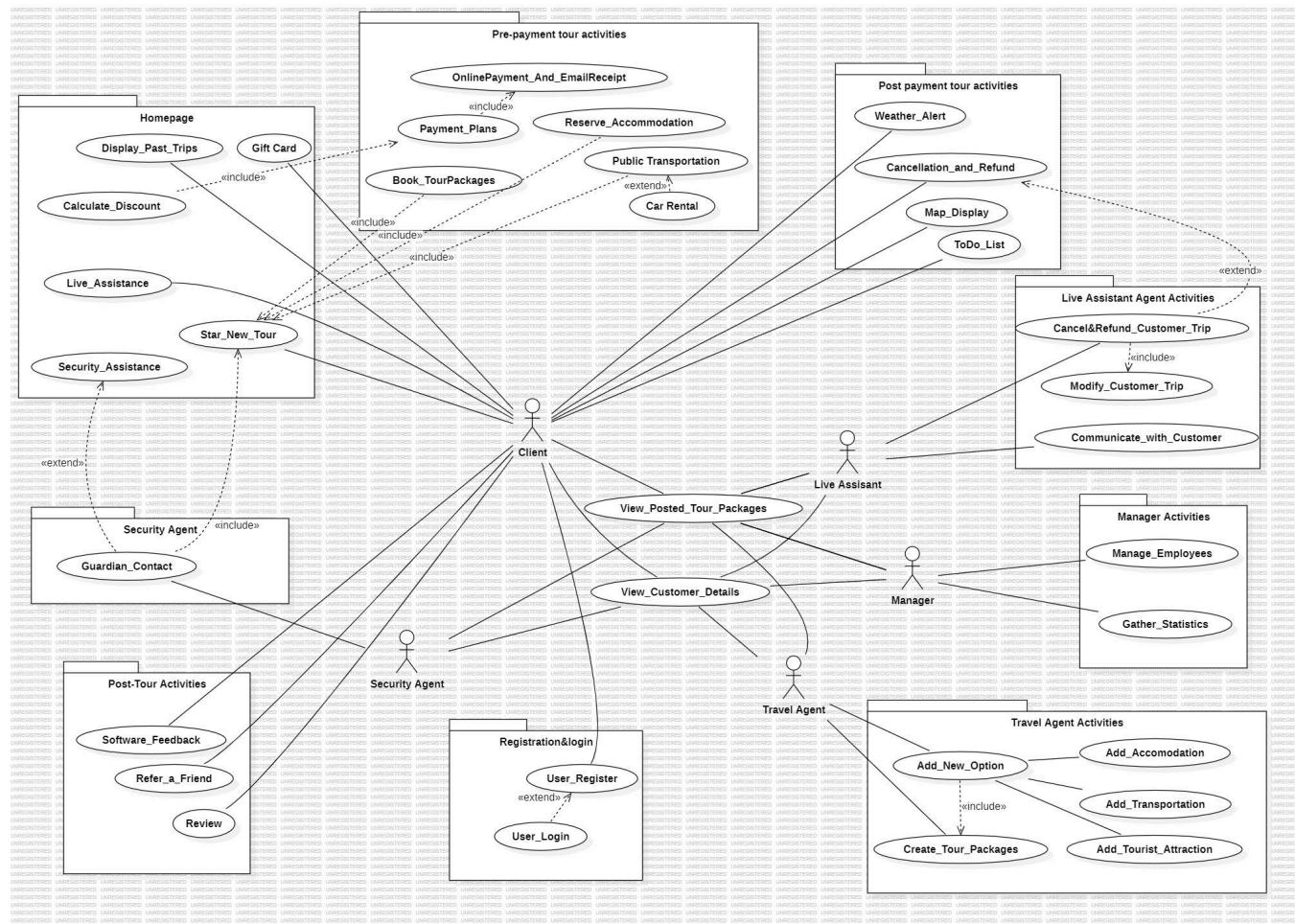
## *Travel Agency System Requirements Specification*

Non functional requirements	<i>Safety_Of_Client; Data_Encryption; Interface; Navigation; Internet_Site; Responsiveness; Usability;</i>
Postconditions	<i>The agent has successfully viewed all the posted tours and their details.</i>

# Travel Agency System Requirements Specification

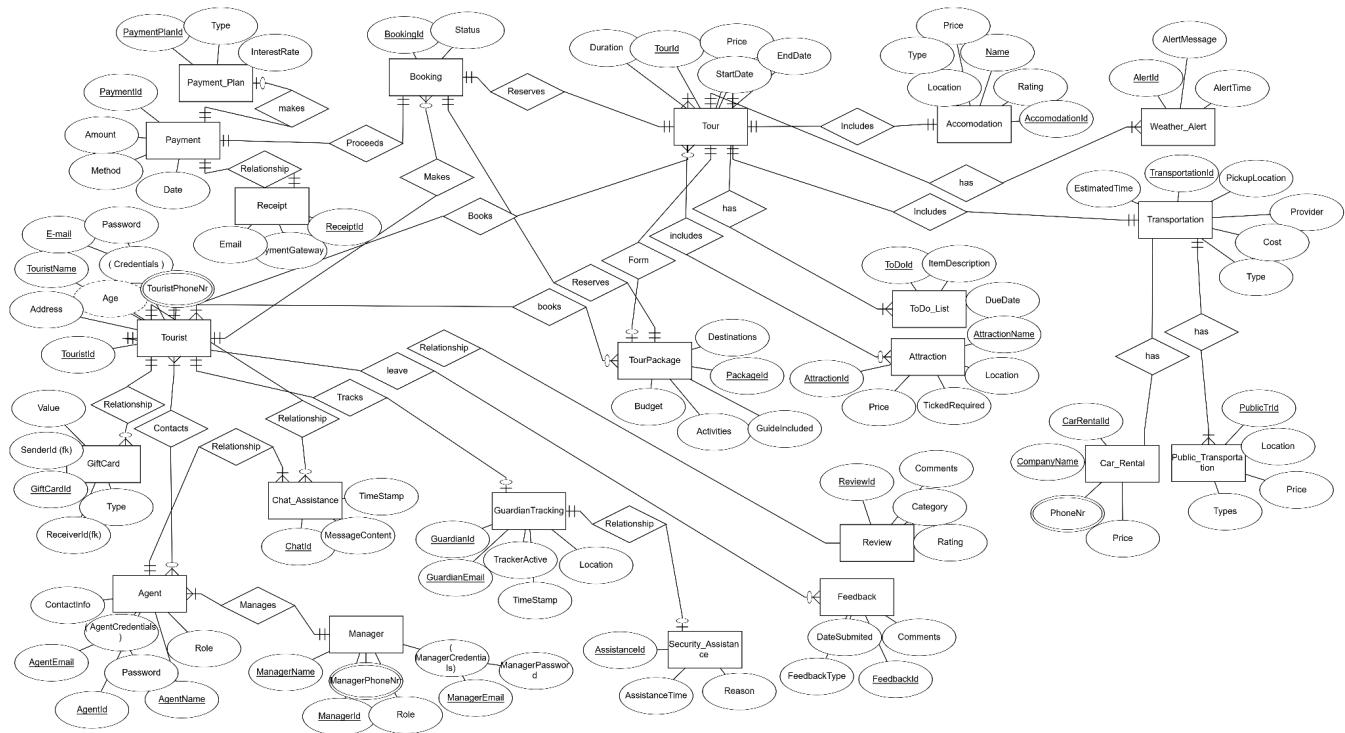
## Diagrams

### General Use Case Diagram



# *Travel Agency System Requirements Specification*

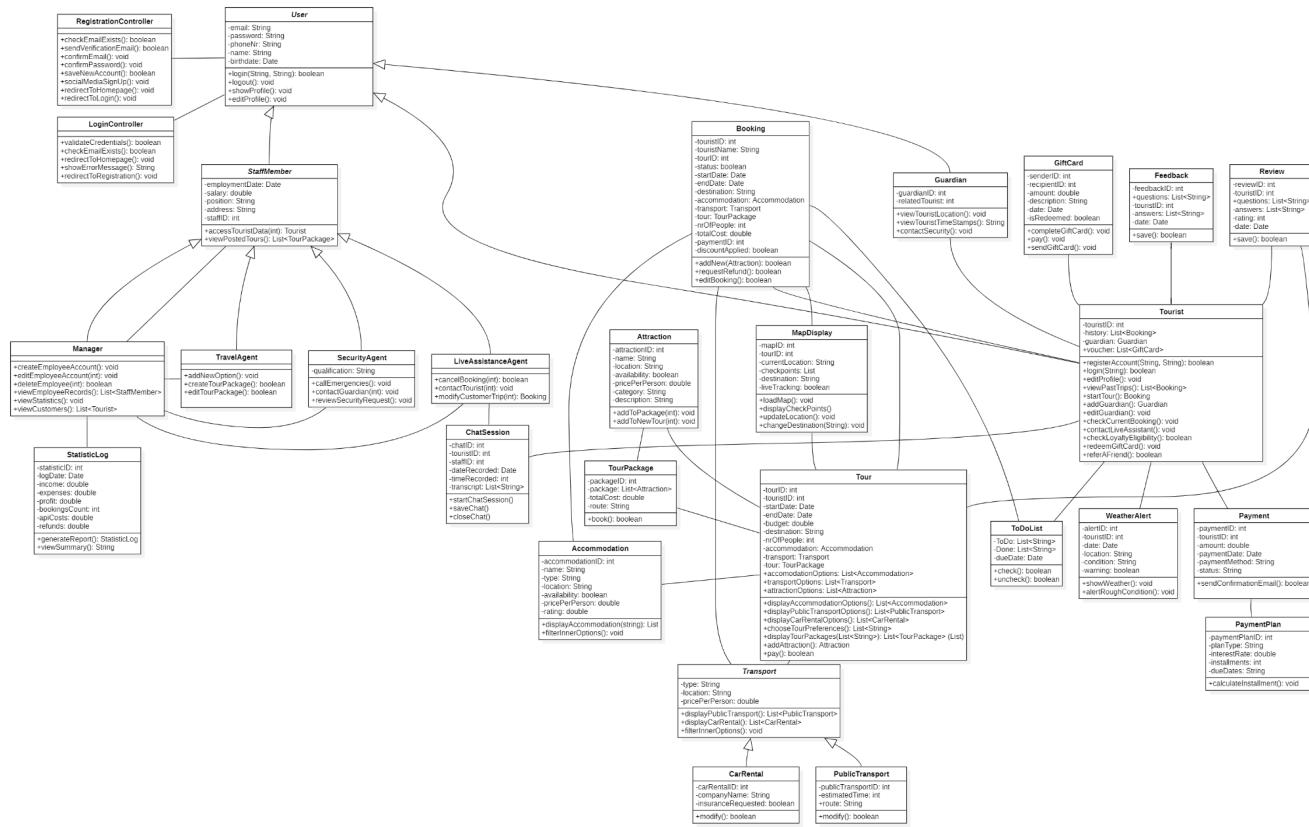
## General ER Diagram



# Travel Agency System Requirements Specification

## General Class Diagram

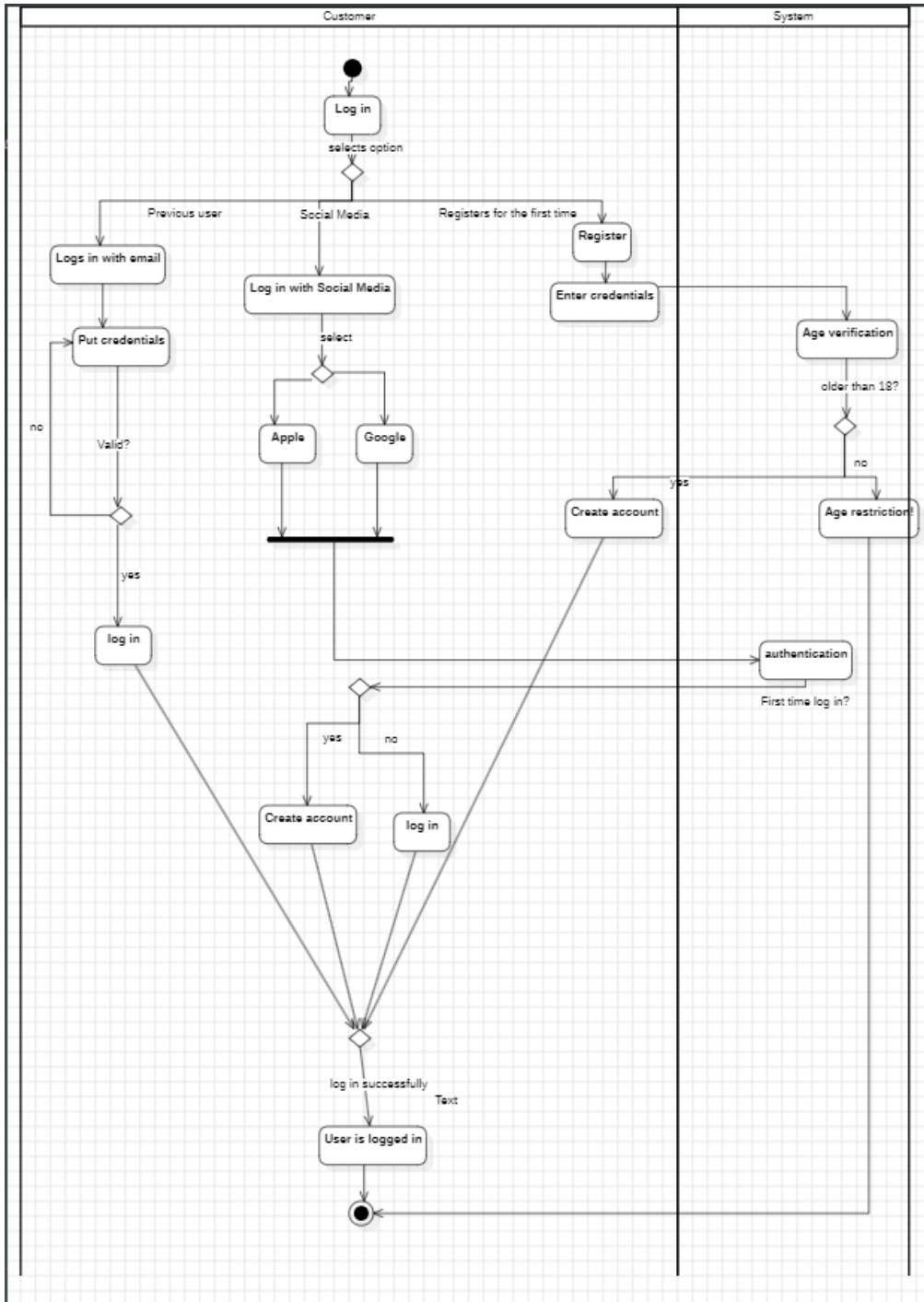
Link for better access: [click here](#)



## Activity Diagrams

### Registration and Login

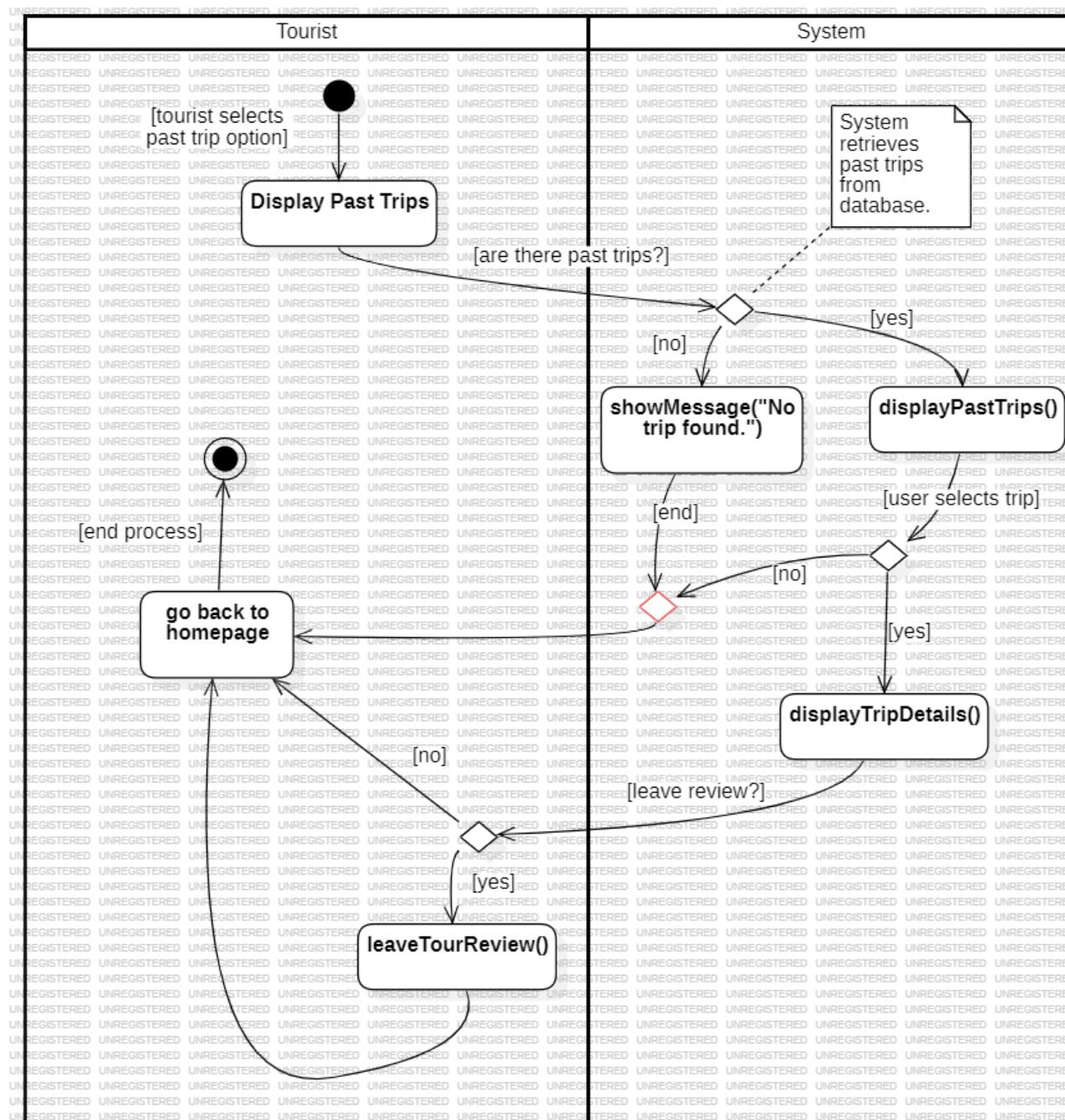
AC-01: User\_Register && AC-02 User\_login



*Travel Agency System Requirements Specification*

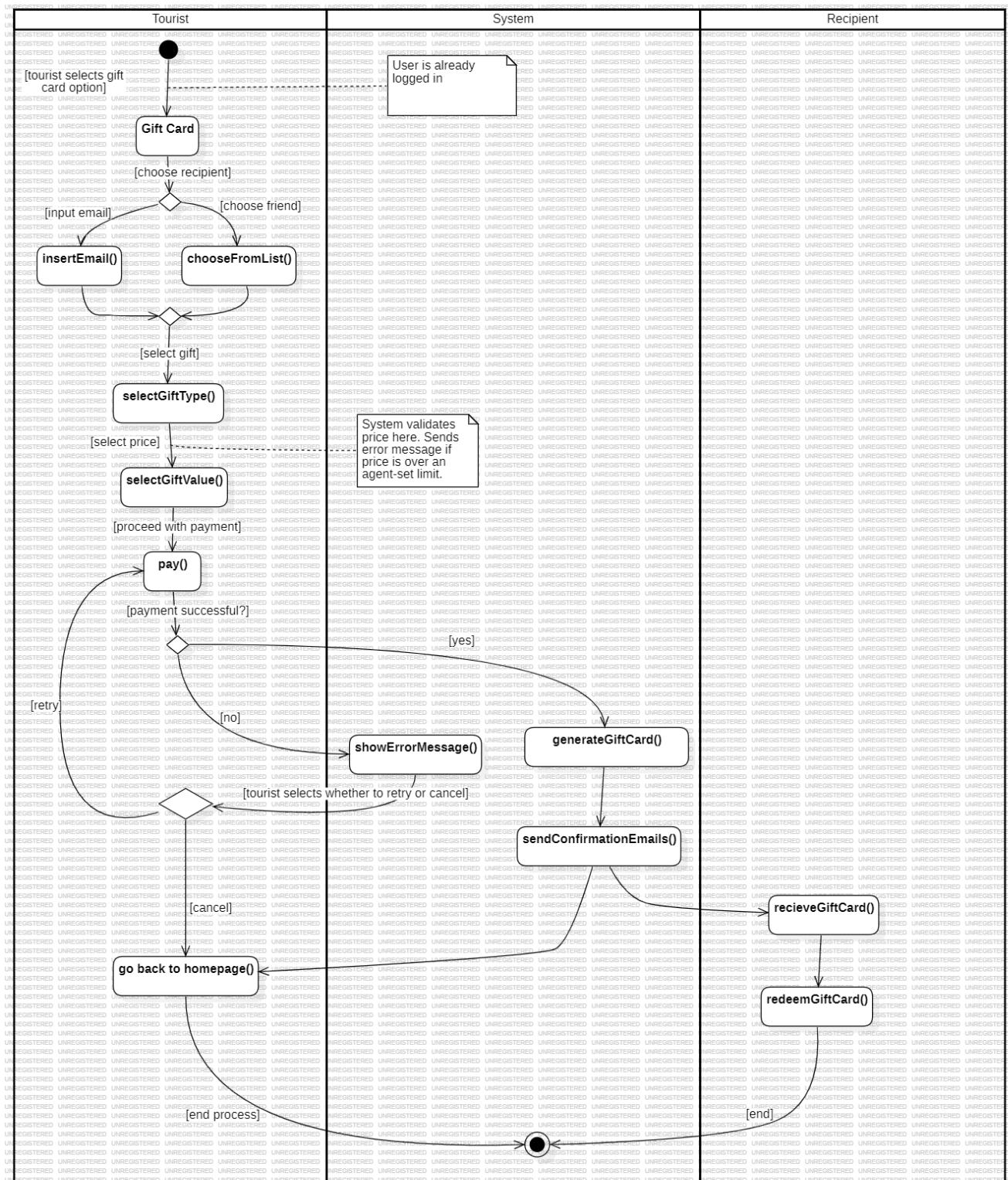
## Homepage

### AC-03: Display Past Trips

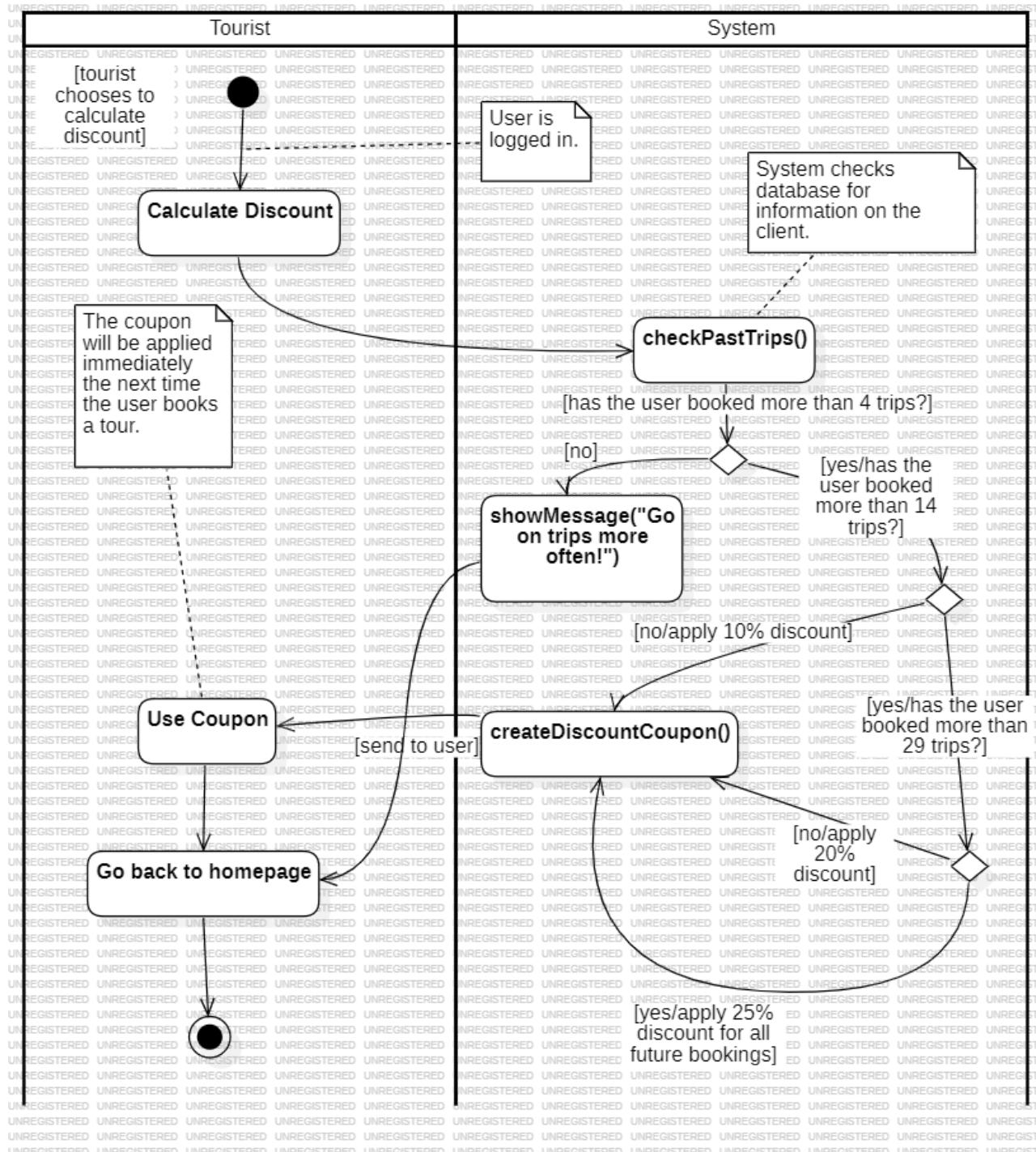


## Travel Agency System Requirements Specification

### AC-04: Gift Card



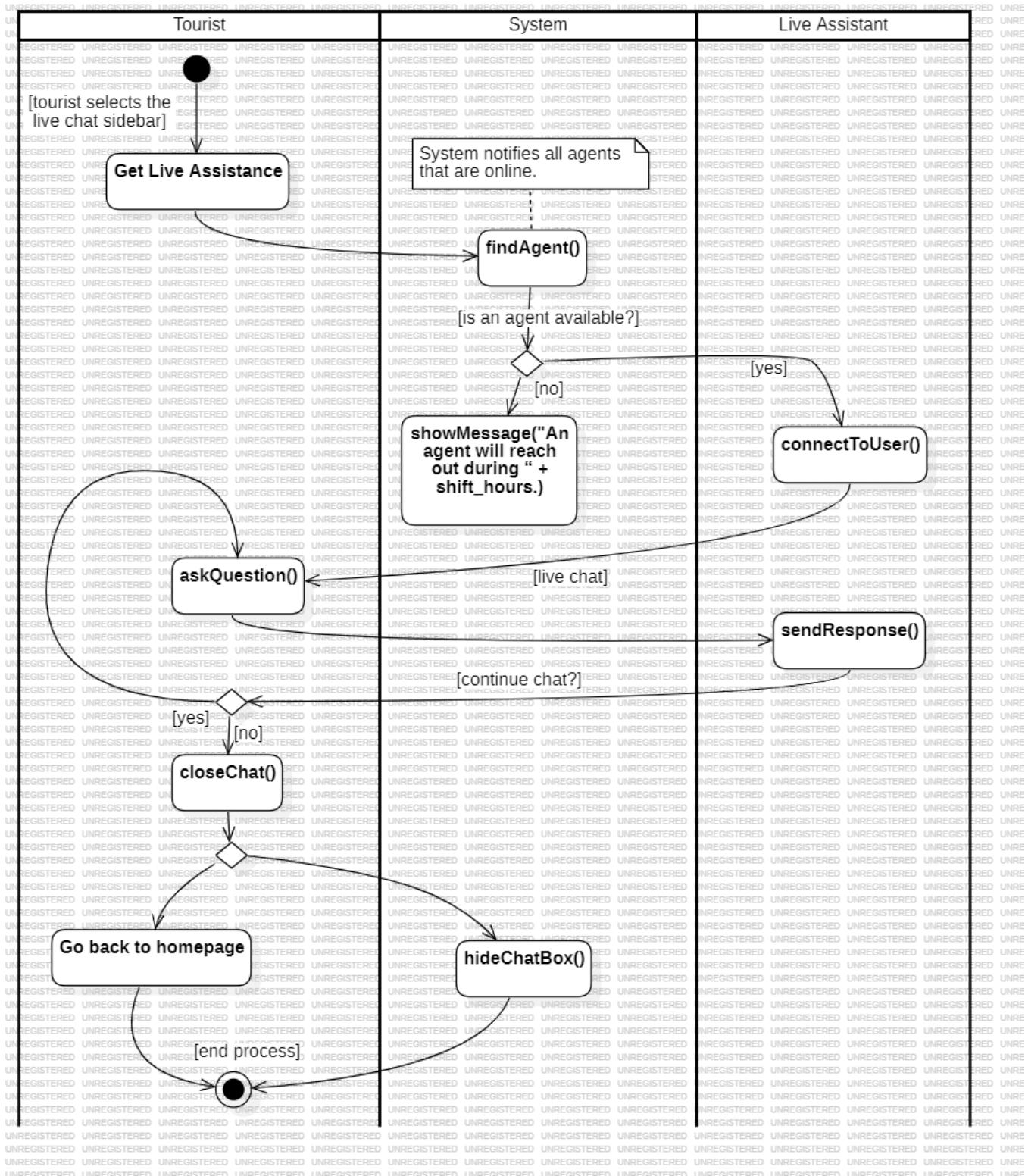
### AC-05: Apply Loyalty Discount



*Travel Agency System Requirements Specification*

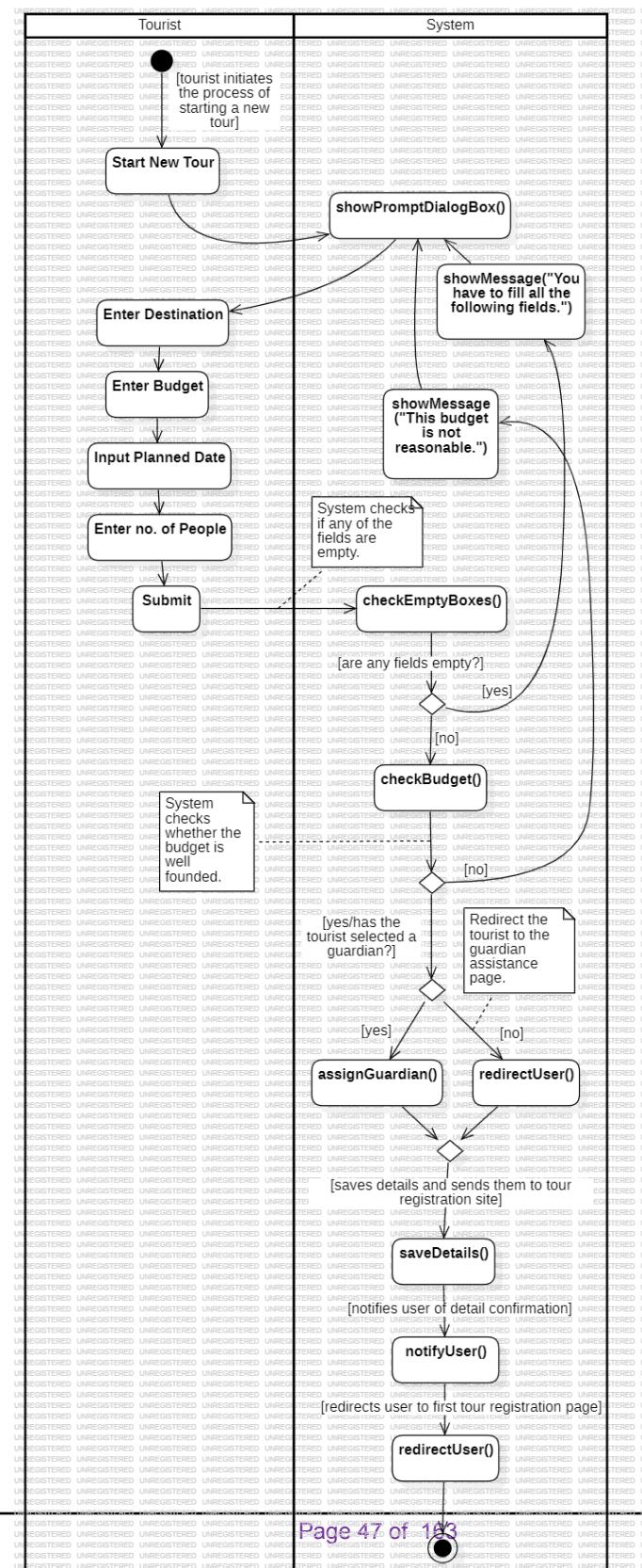
AC-06: Live Chat with Agent

## Travel Agency System Requirements Specification



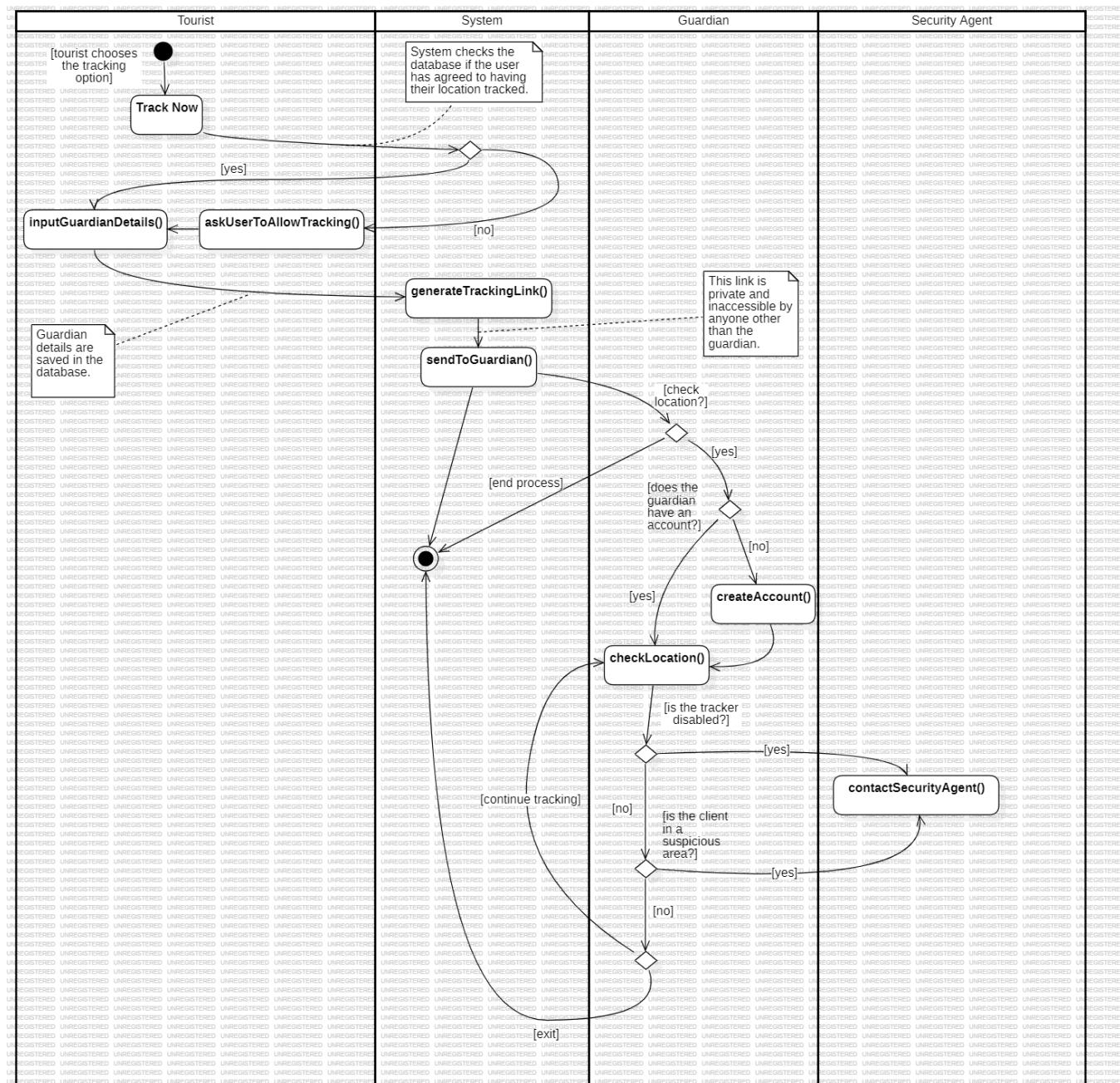
## Travel Agency System Requirements Specification

### AC-07: Start New Tour



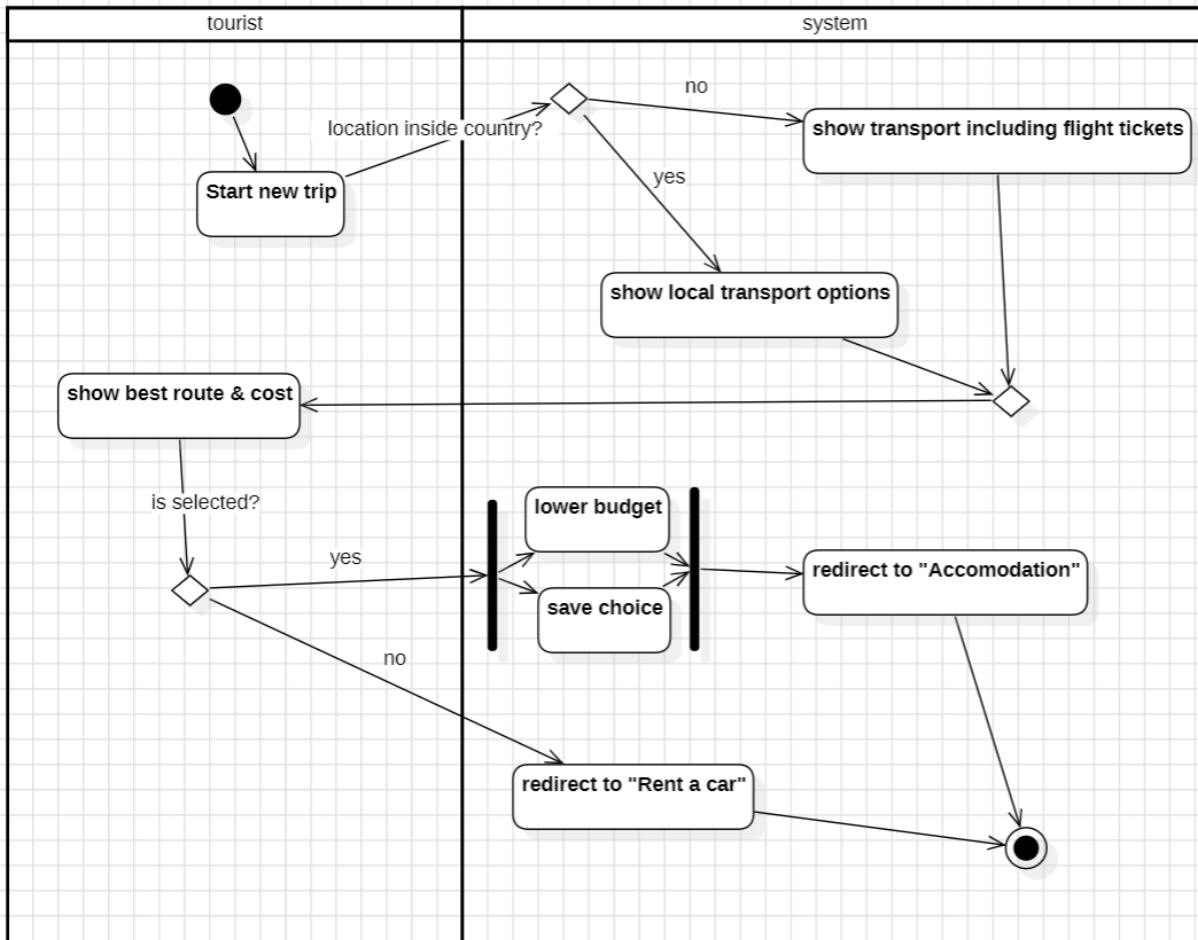
## Travel Agency System Requirements Specification

### AC-08: Guardian Tracking and Security Assistance

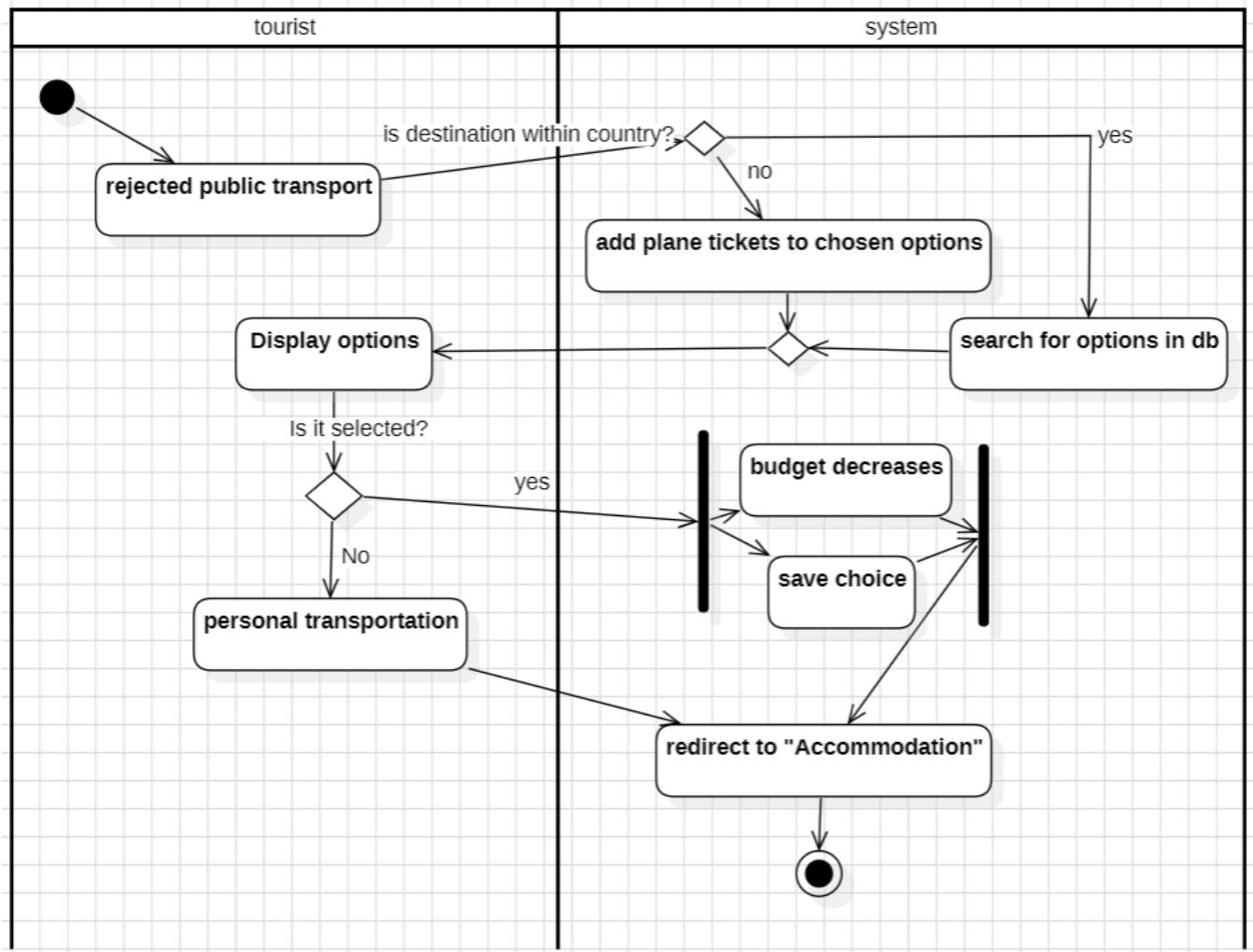


## **Prepayment Tour Activities**

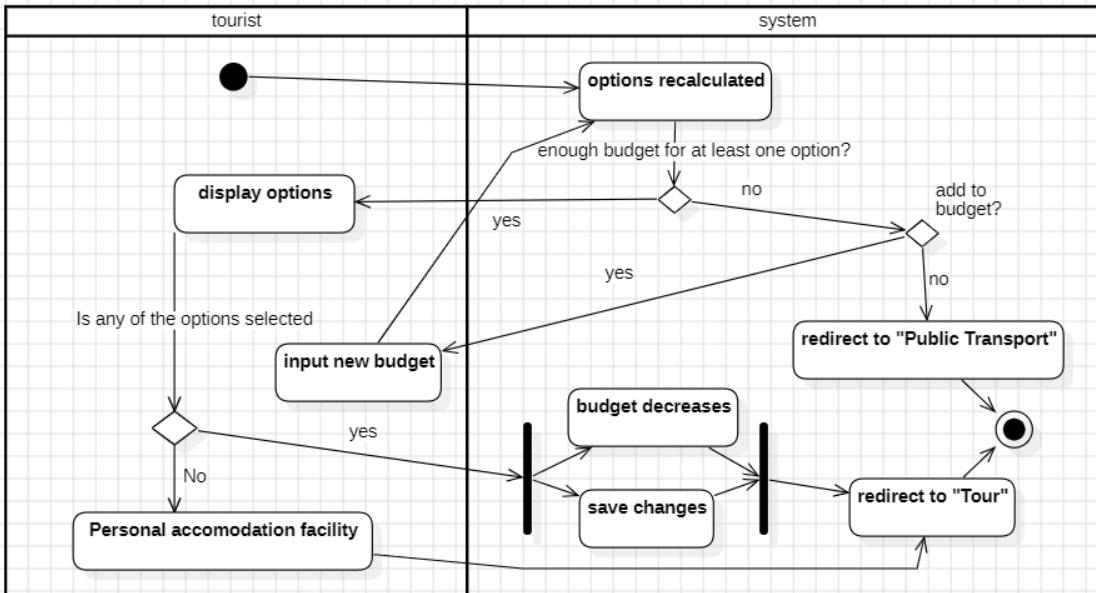
AC-9: Public Transportation



AC-10: Car\_Rental

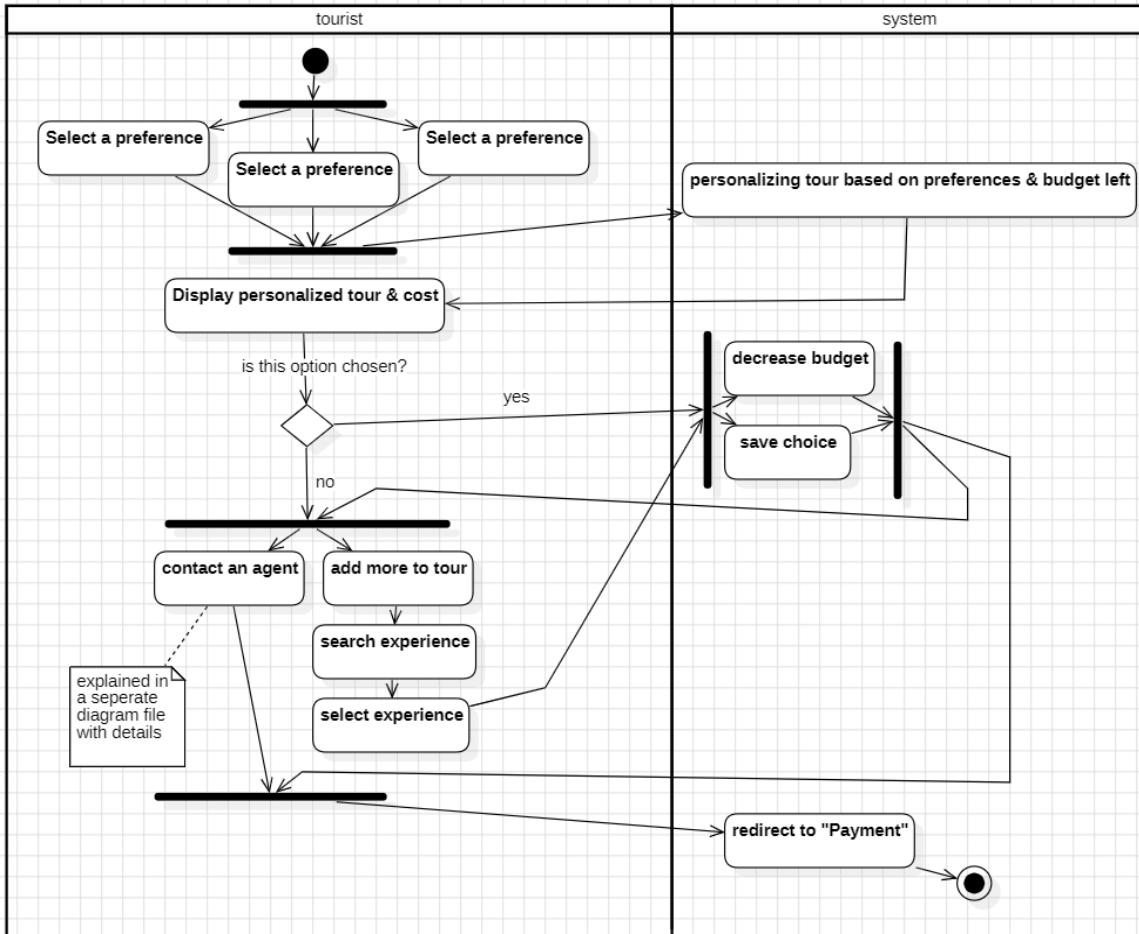


AC-11: Reserve\_Accommodation

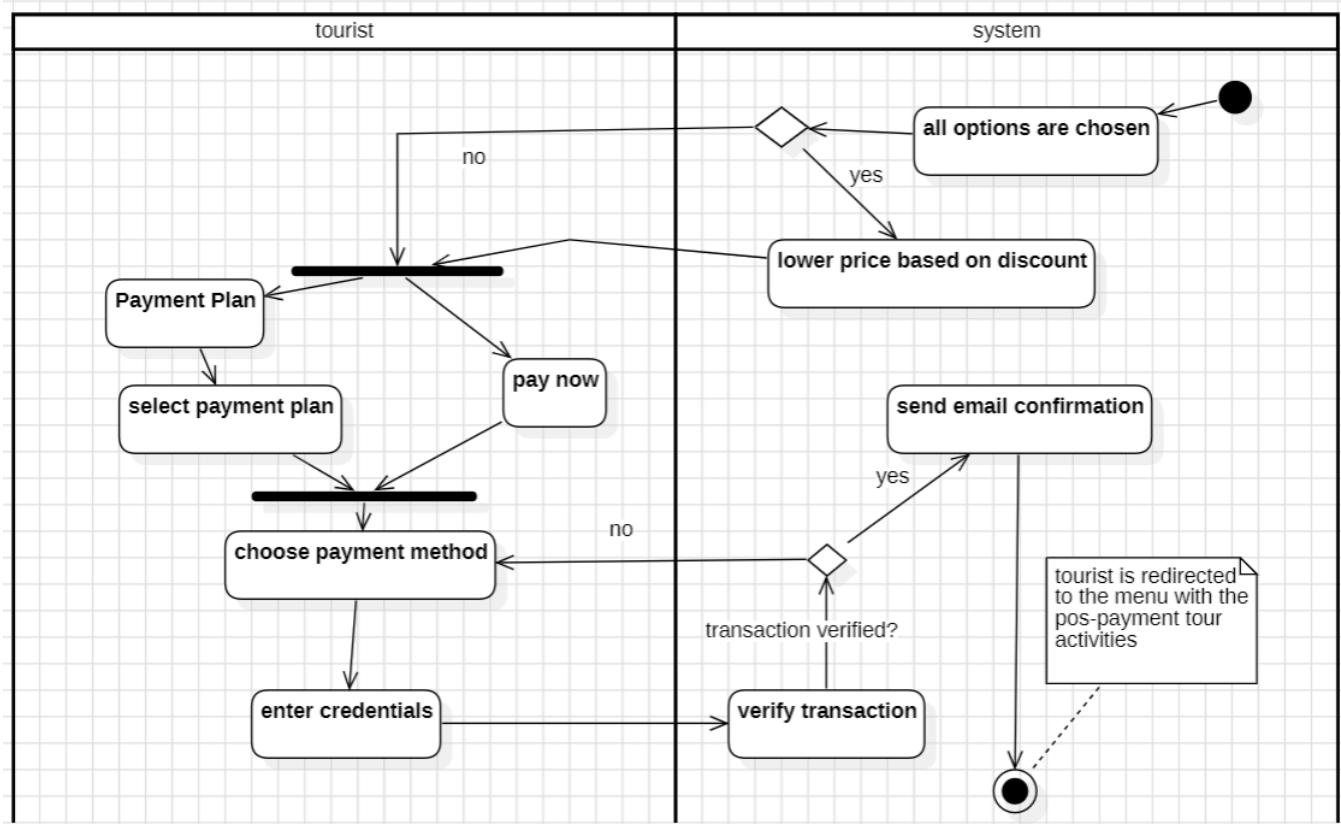


AC-12: Book\_Tour\_Package

## Travel Agency System Requirements Specification

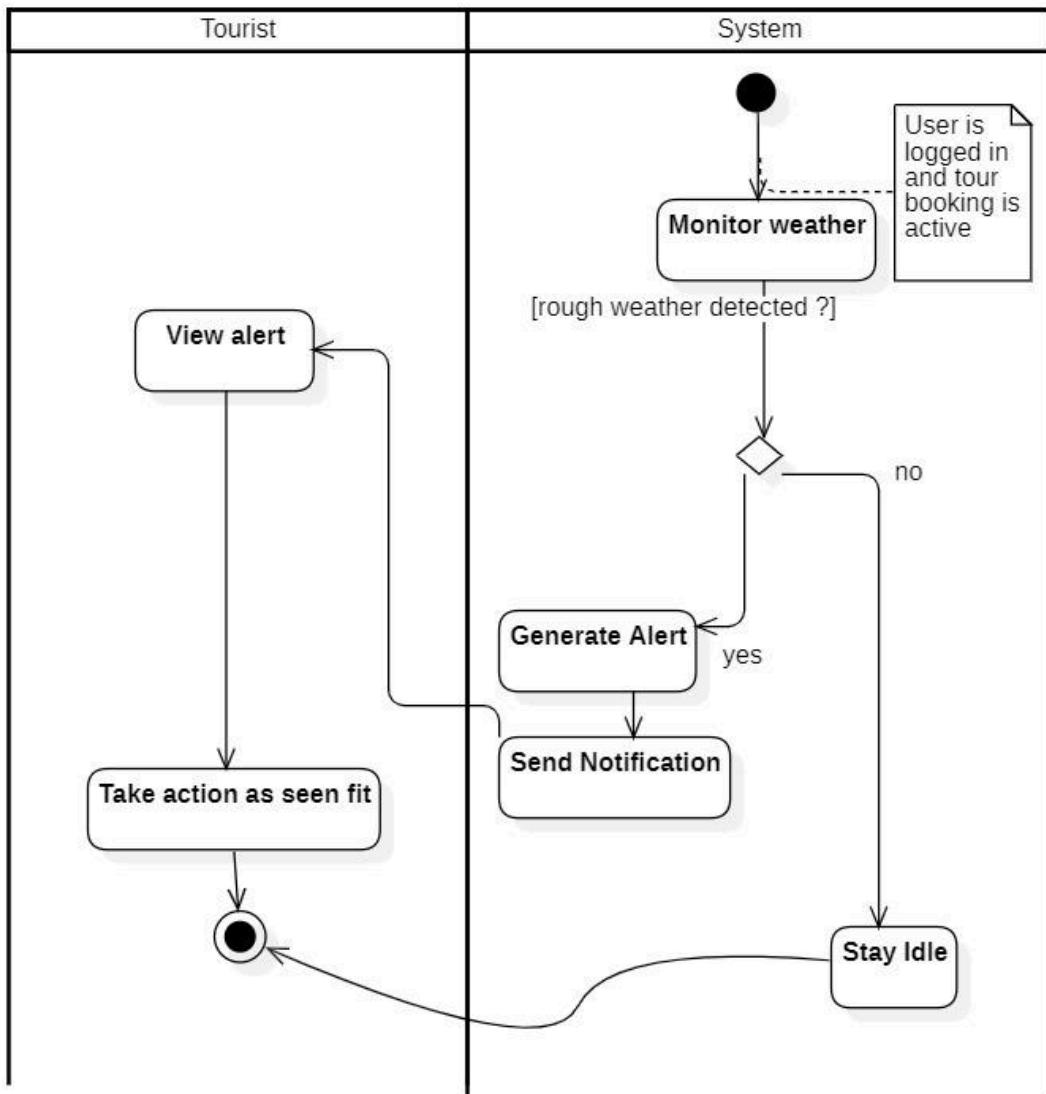


AC-13: Online\_Payment\_and\_Email Receipt && AC-14: Payment\_Plans

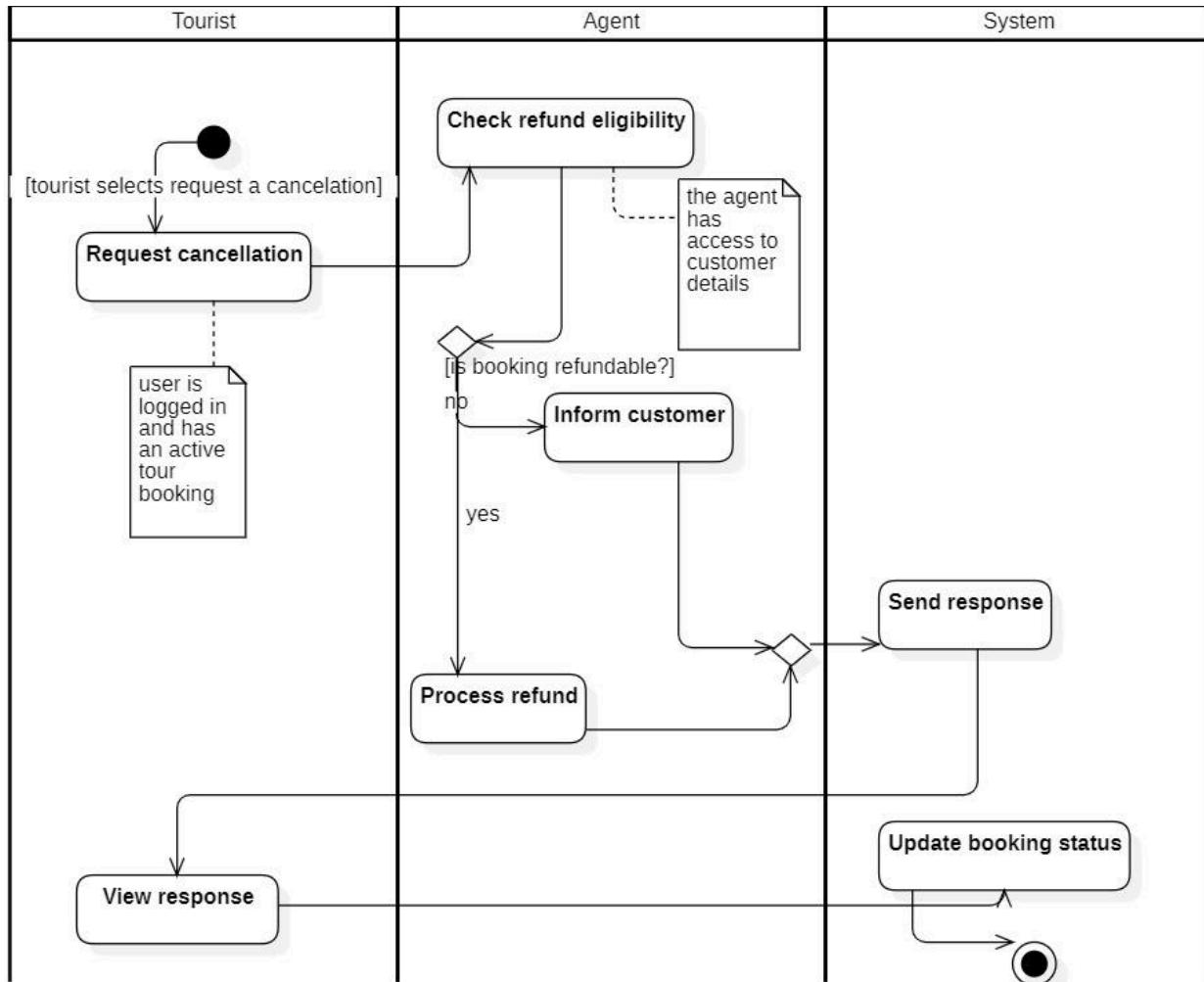


## **Postpayment Tour Activities**

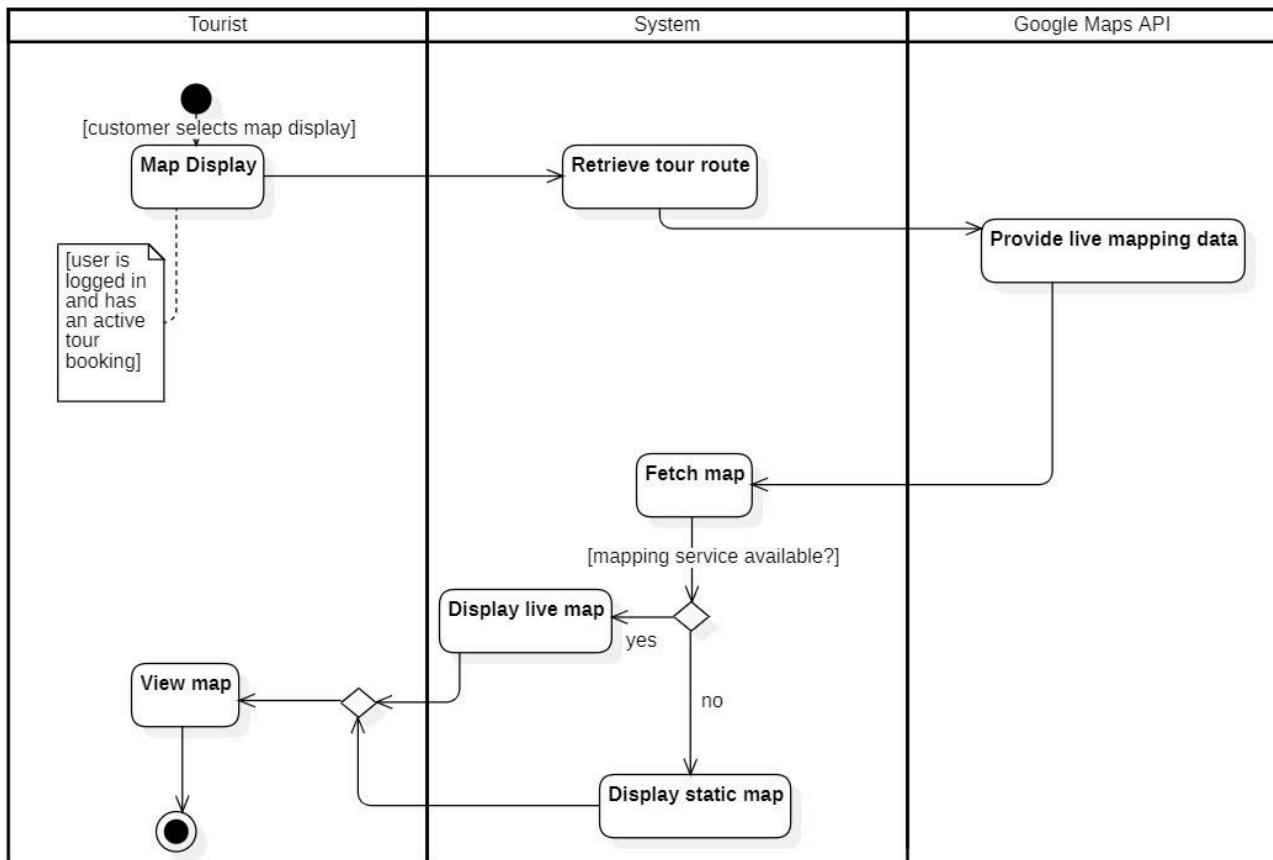
AC-15: Weather\_Alert



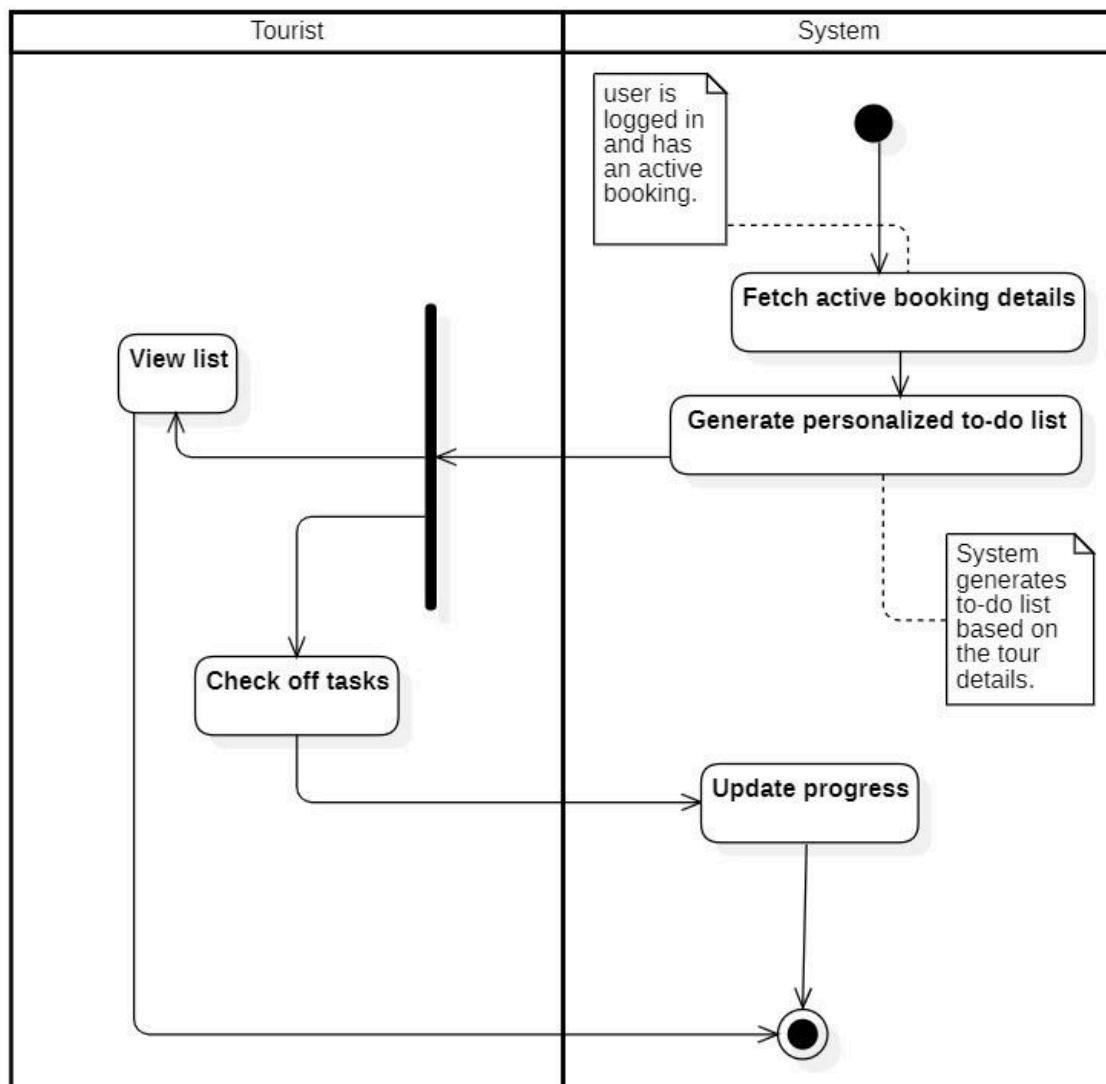
AC-16: Cancel\_And\_Refund\_Customer\_Trip



AC-17: Map\_Display



AC-18: To-Do\_List

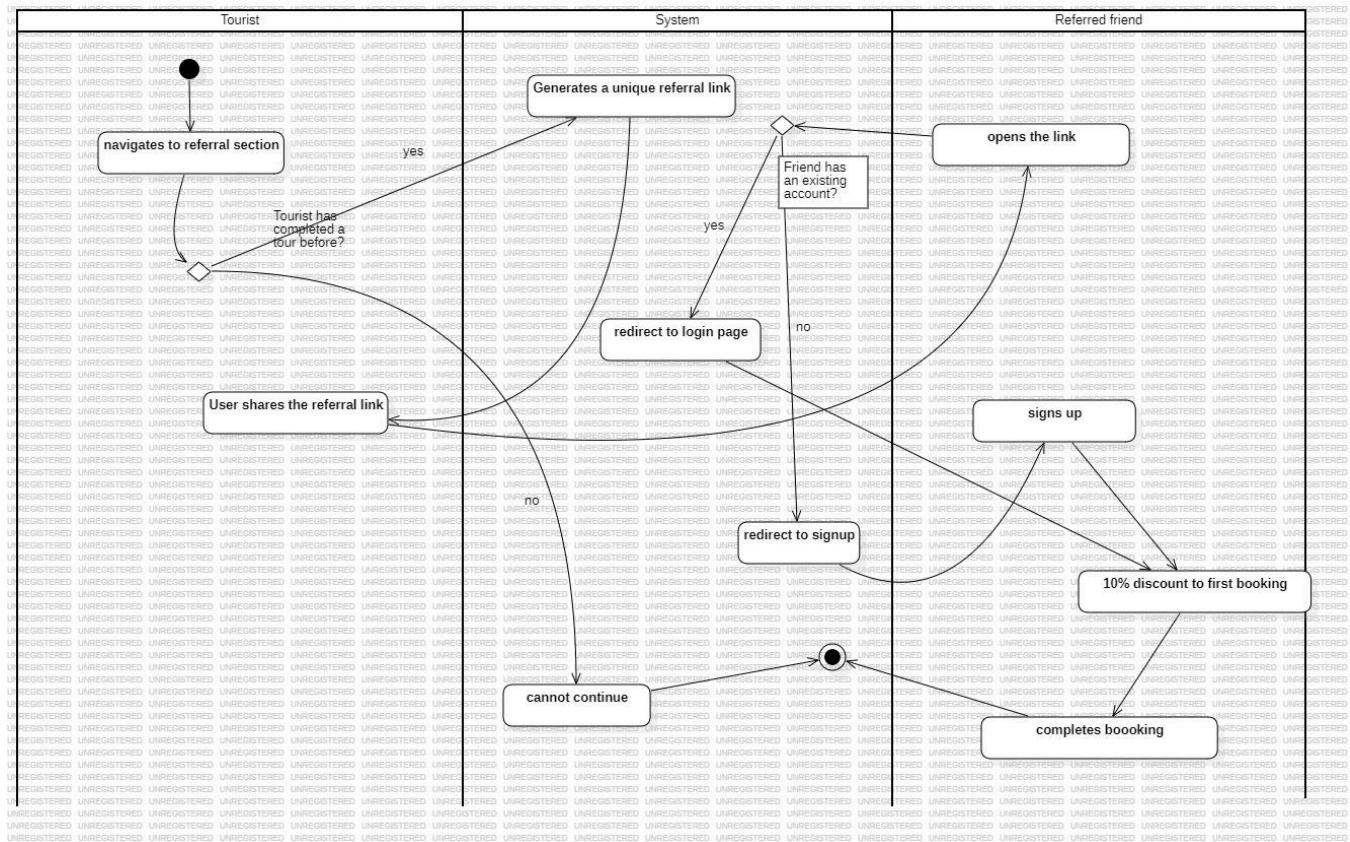


*Travel Agency System Requirements Specification*

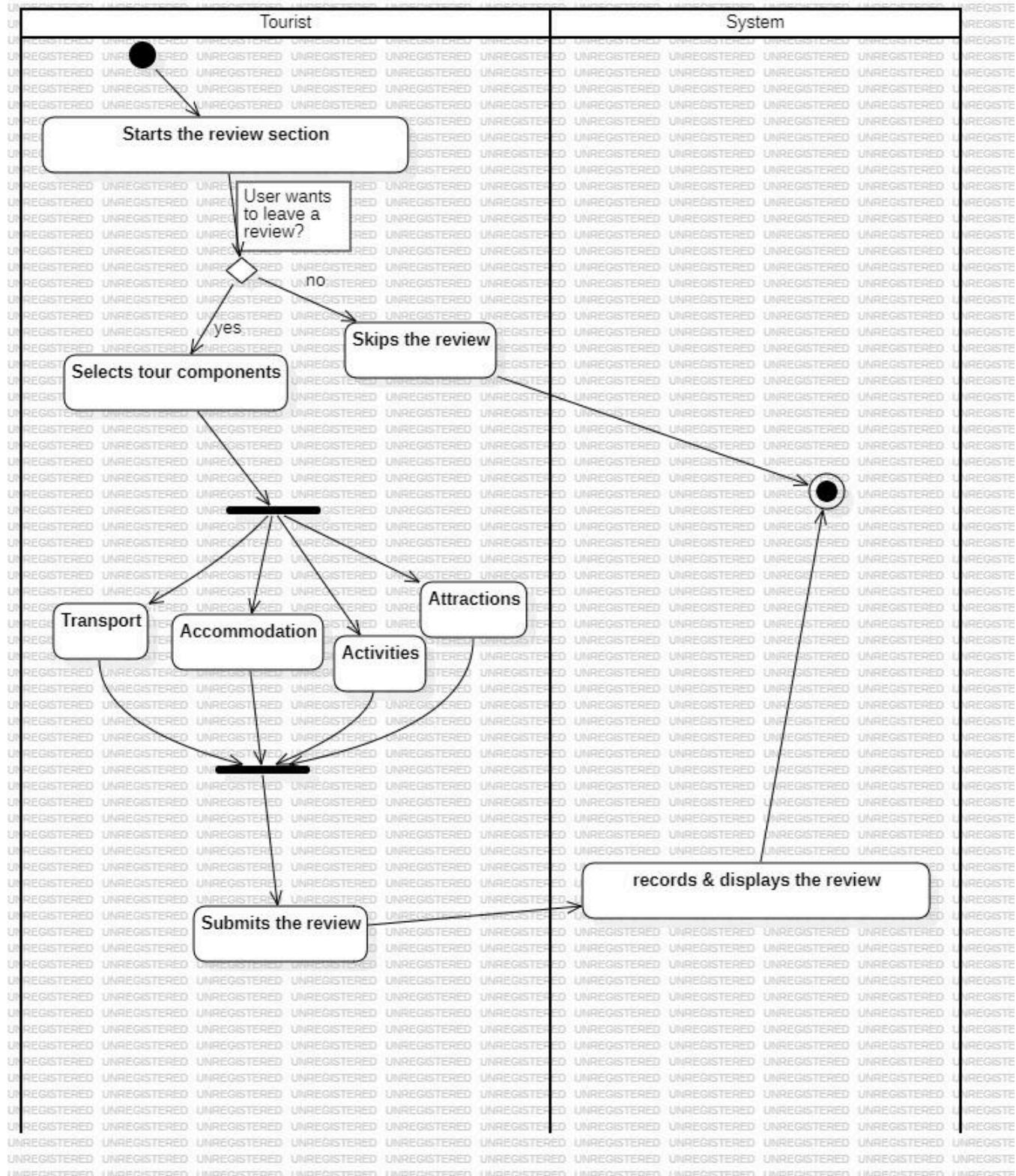
## Travel Agency System Requirements Specification

### Post Tour Activities

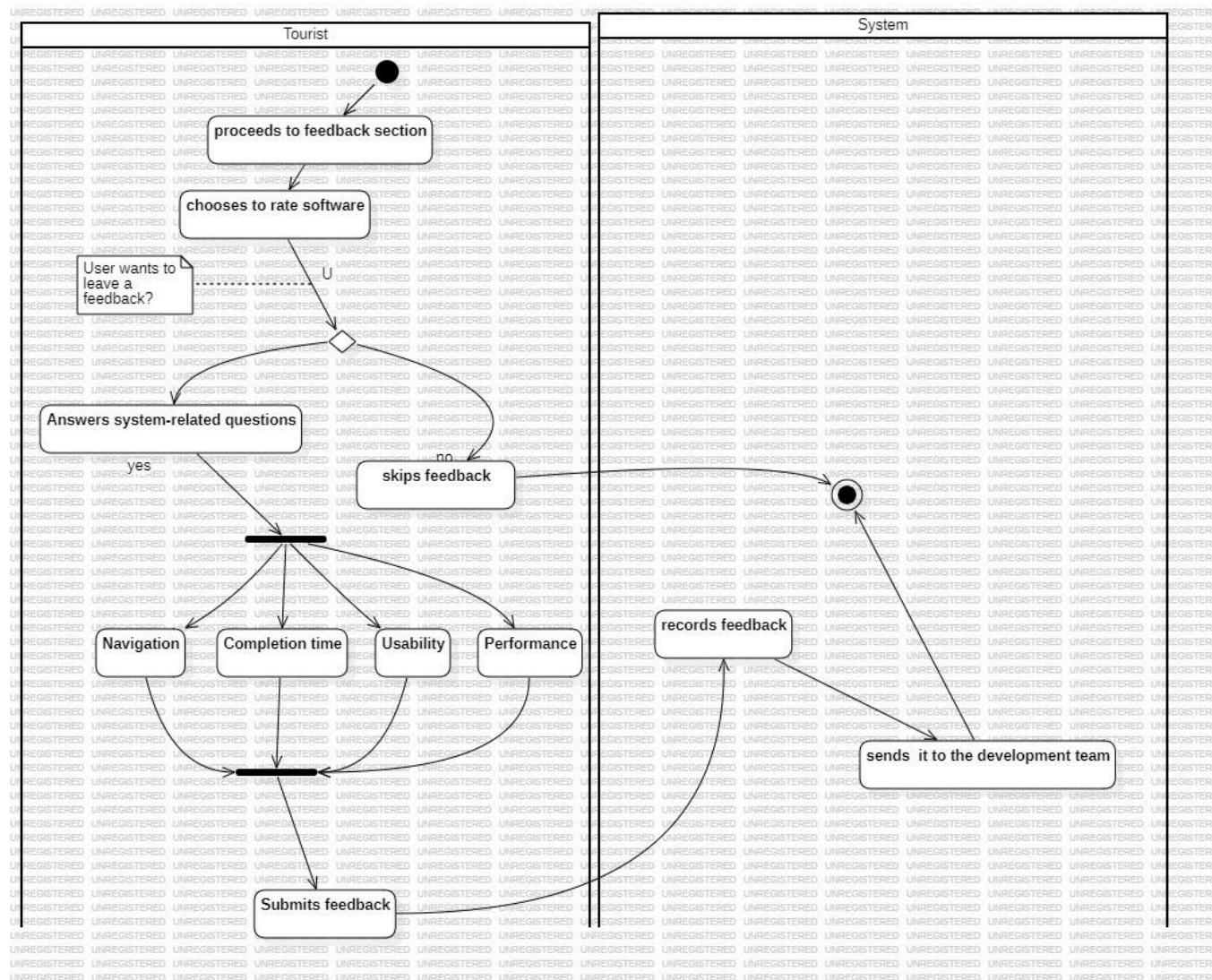
#### AC-19- Refer a friend



AC-20: Review



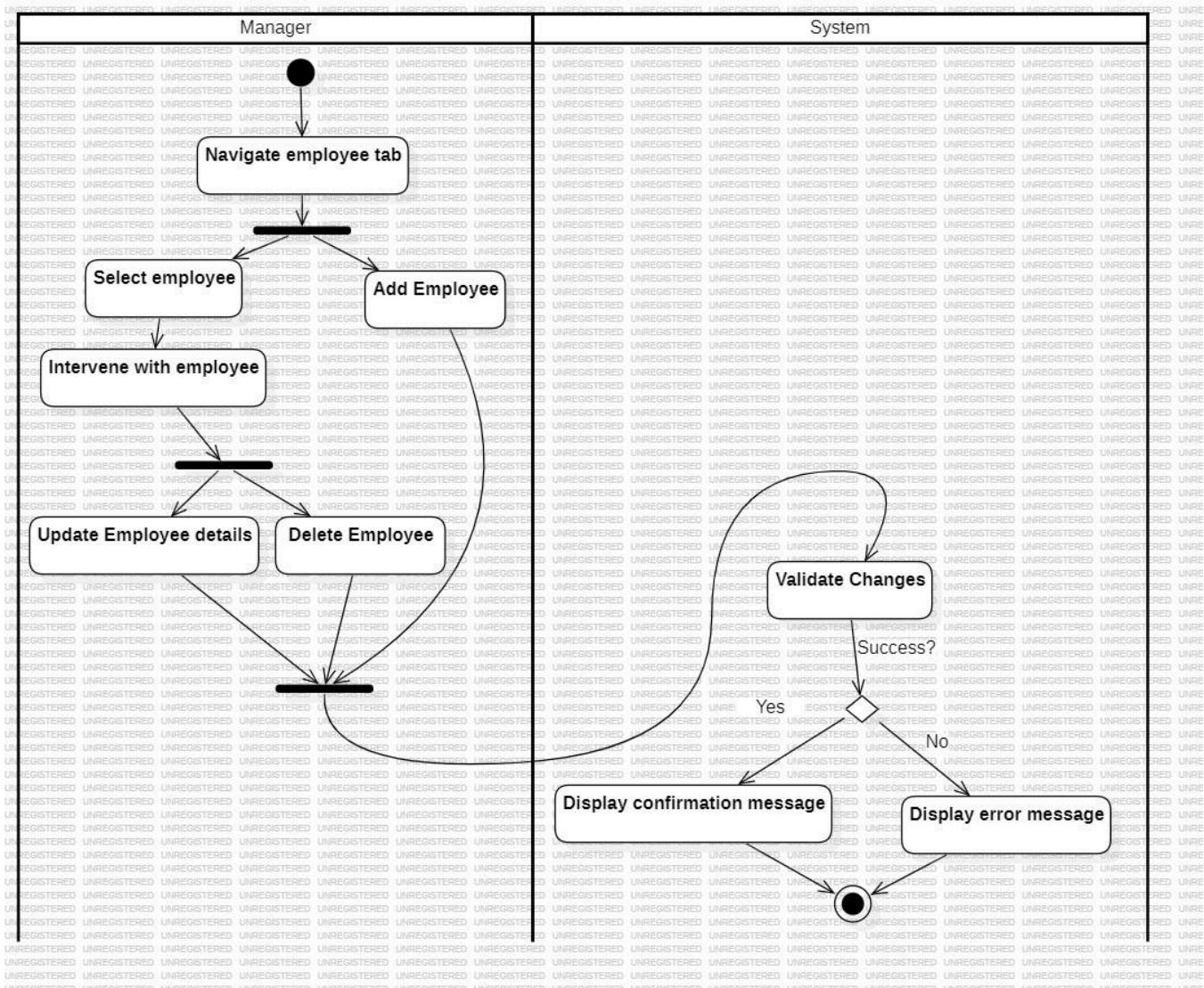
### AC-21: Software Feedback



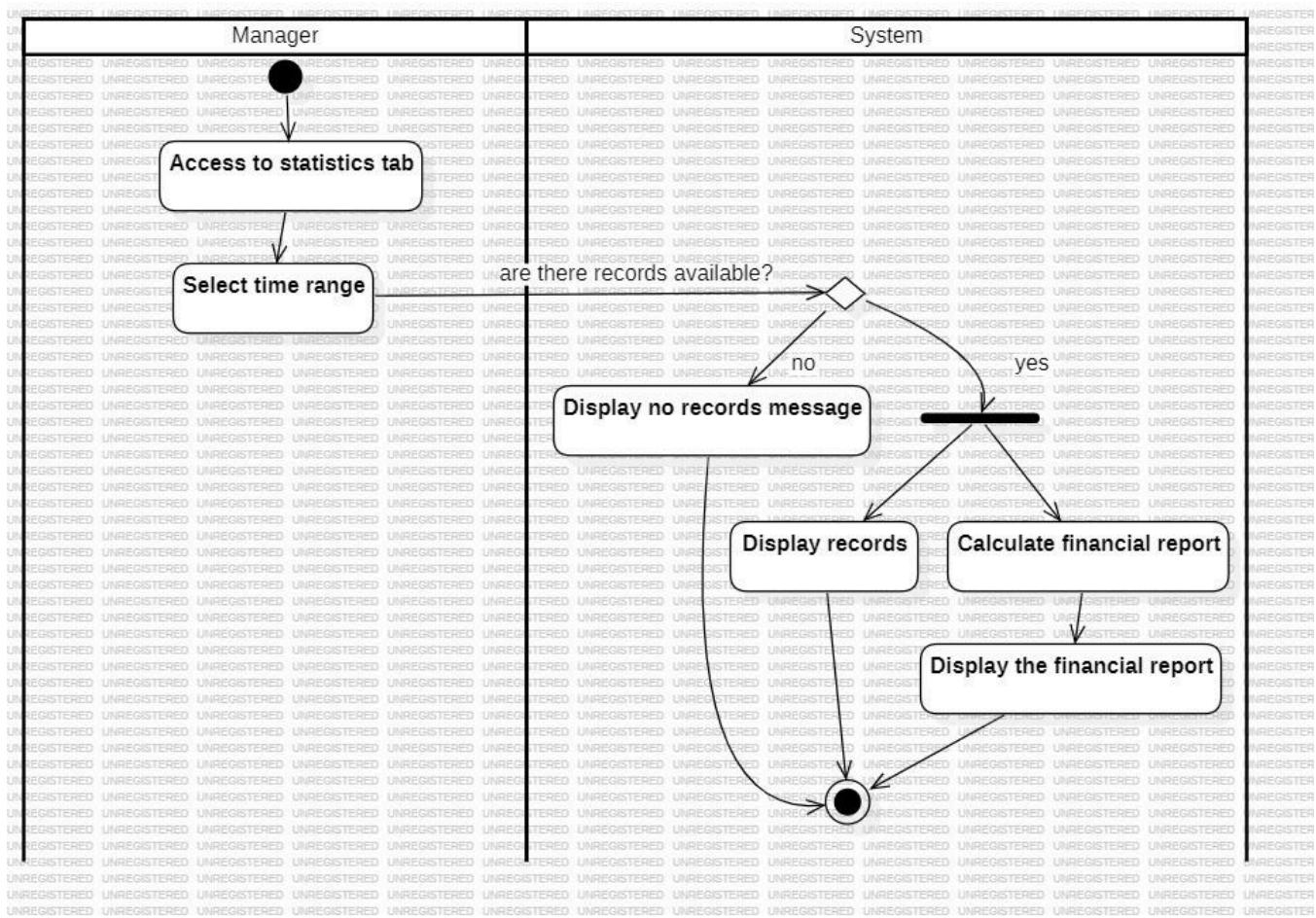
## Travel Agency System Requirements Specification

### Manager

#### AC-22: Manage Employees

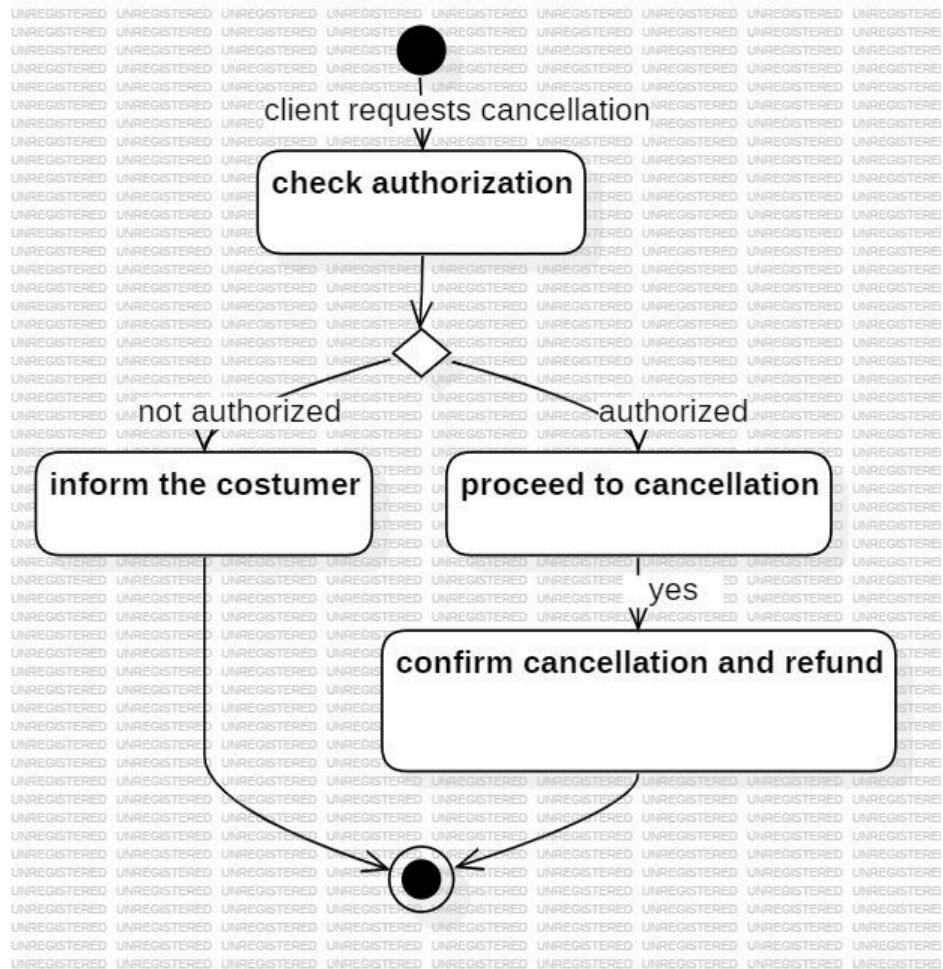


### AC-23: Gather Statistics



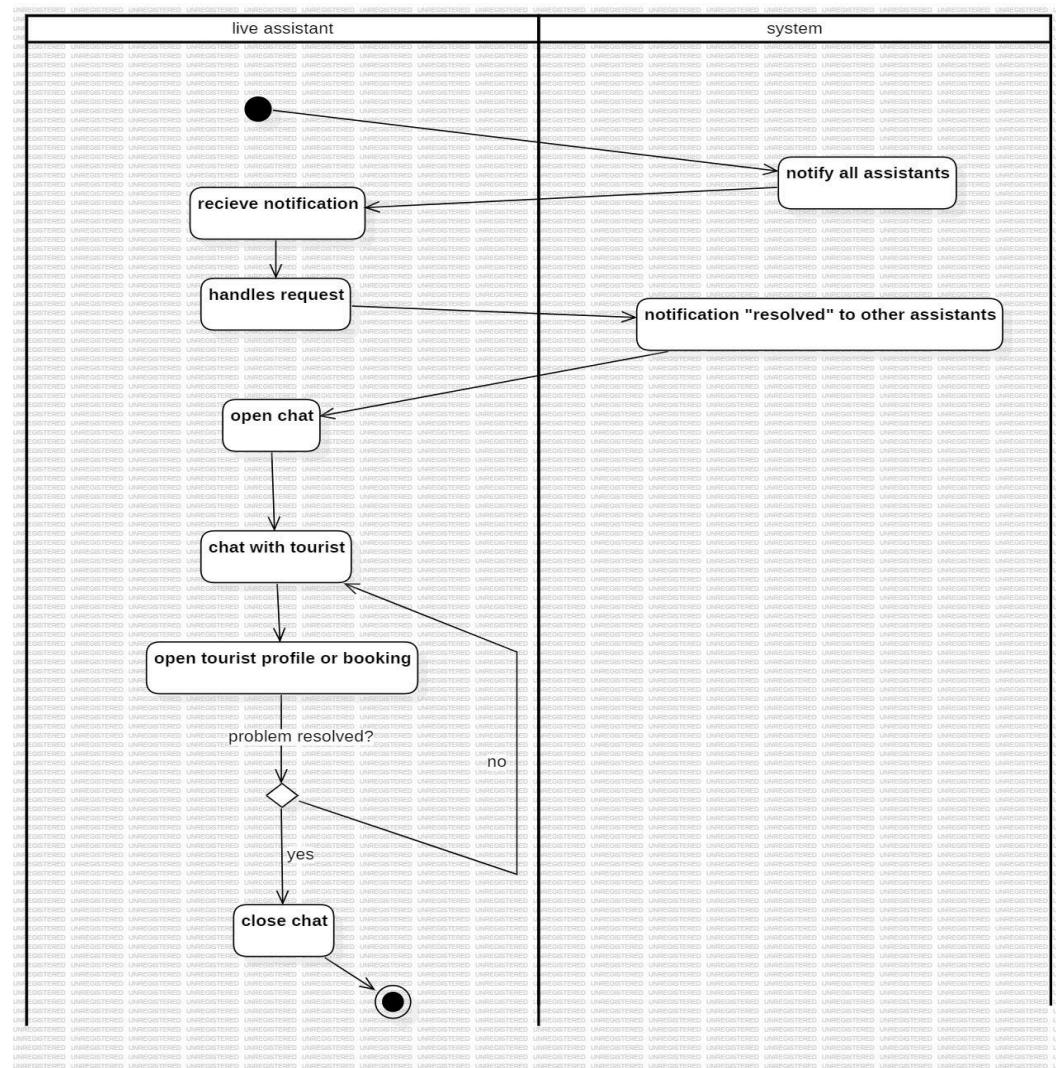
## **Live Assistant Agent Activities**

### AC-24: Cancel And Refund Customer Trip

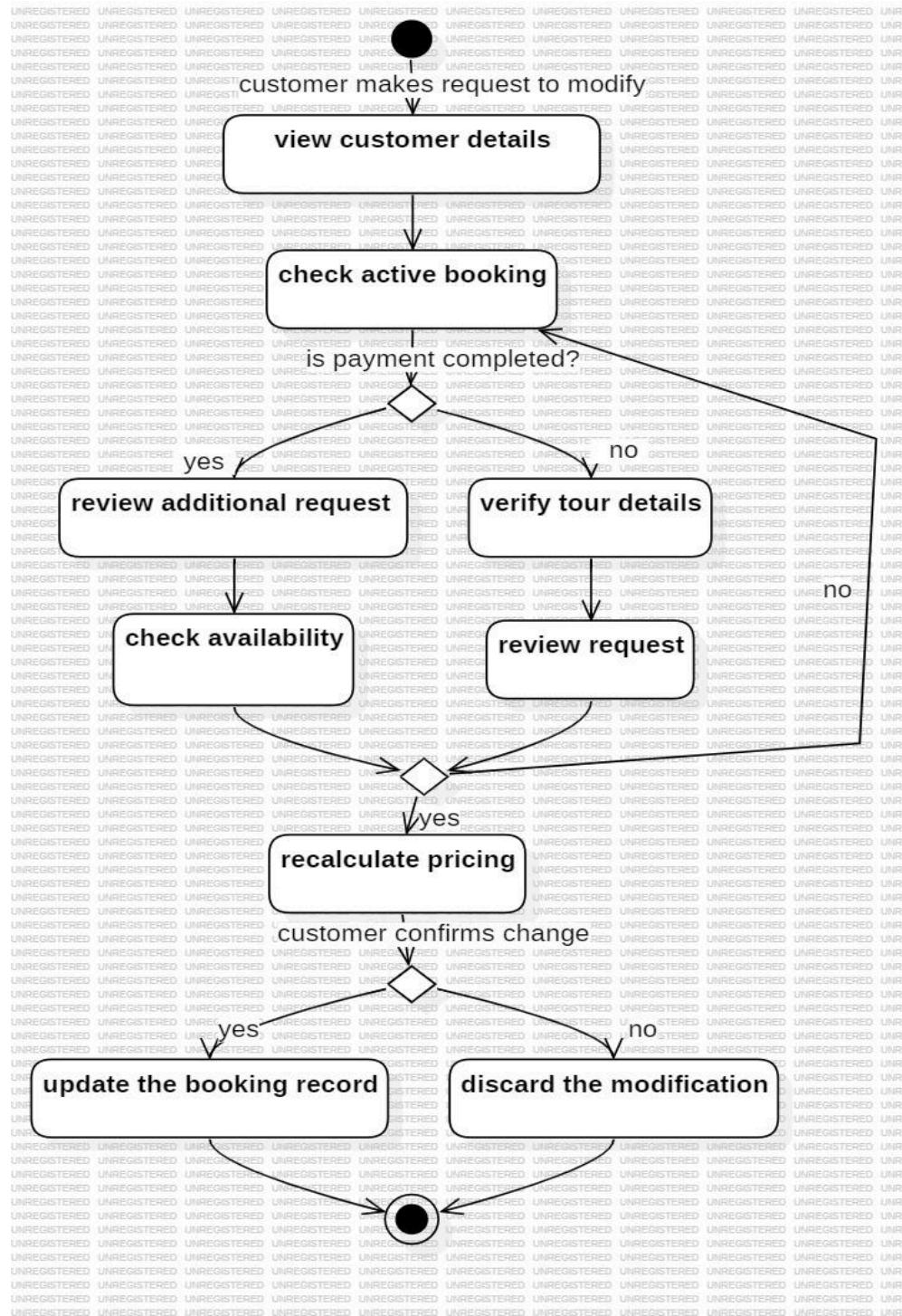


## Travel Agency System Requirements Specification

### AC-25: Communicate with Customer



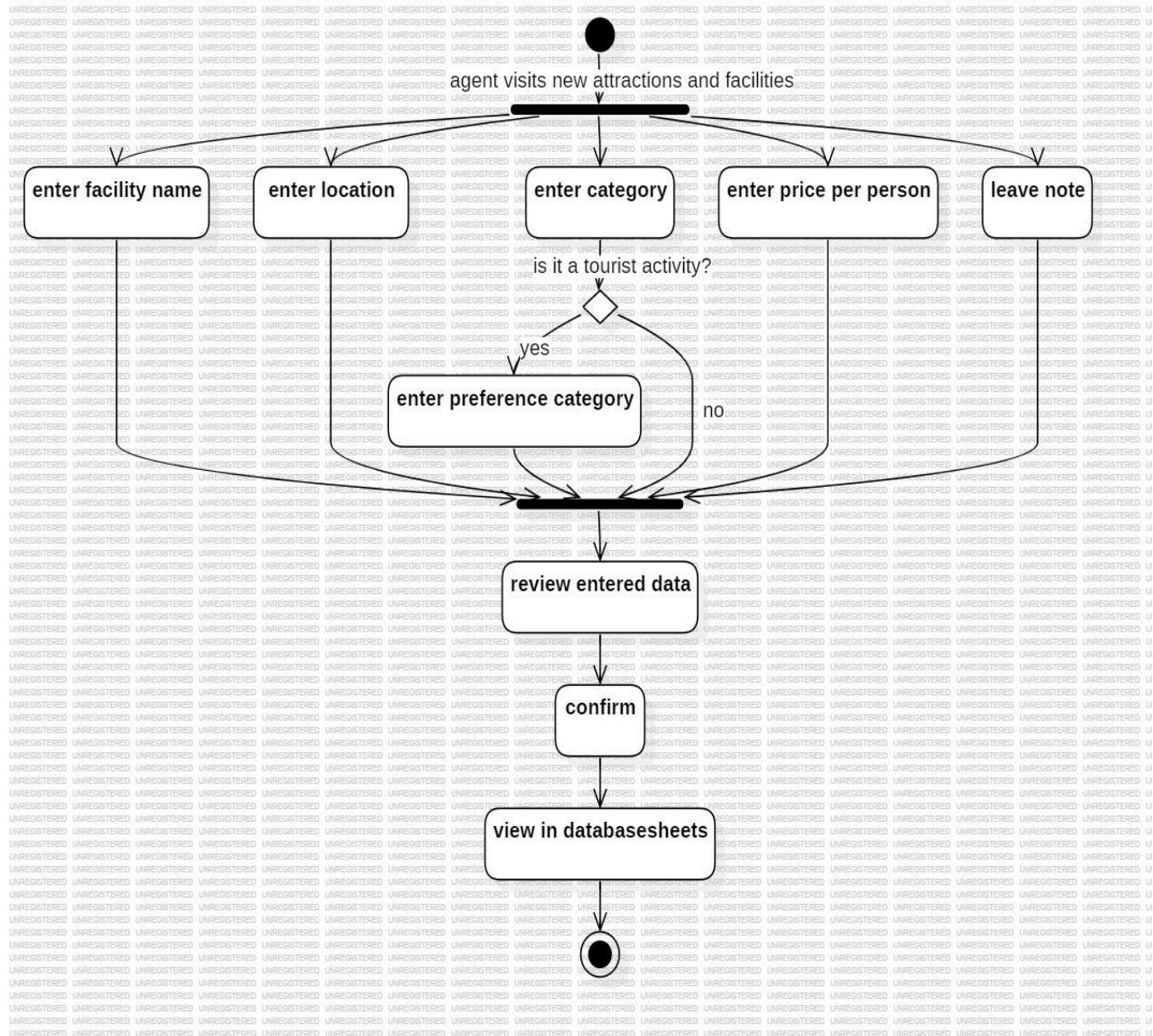
AC-26: Modify Customer Trip



## Travel Agency System Requirements Specification

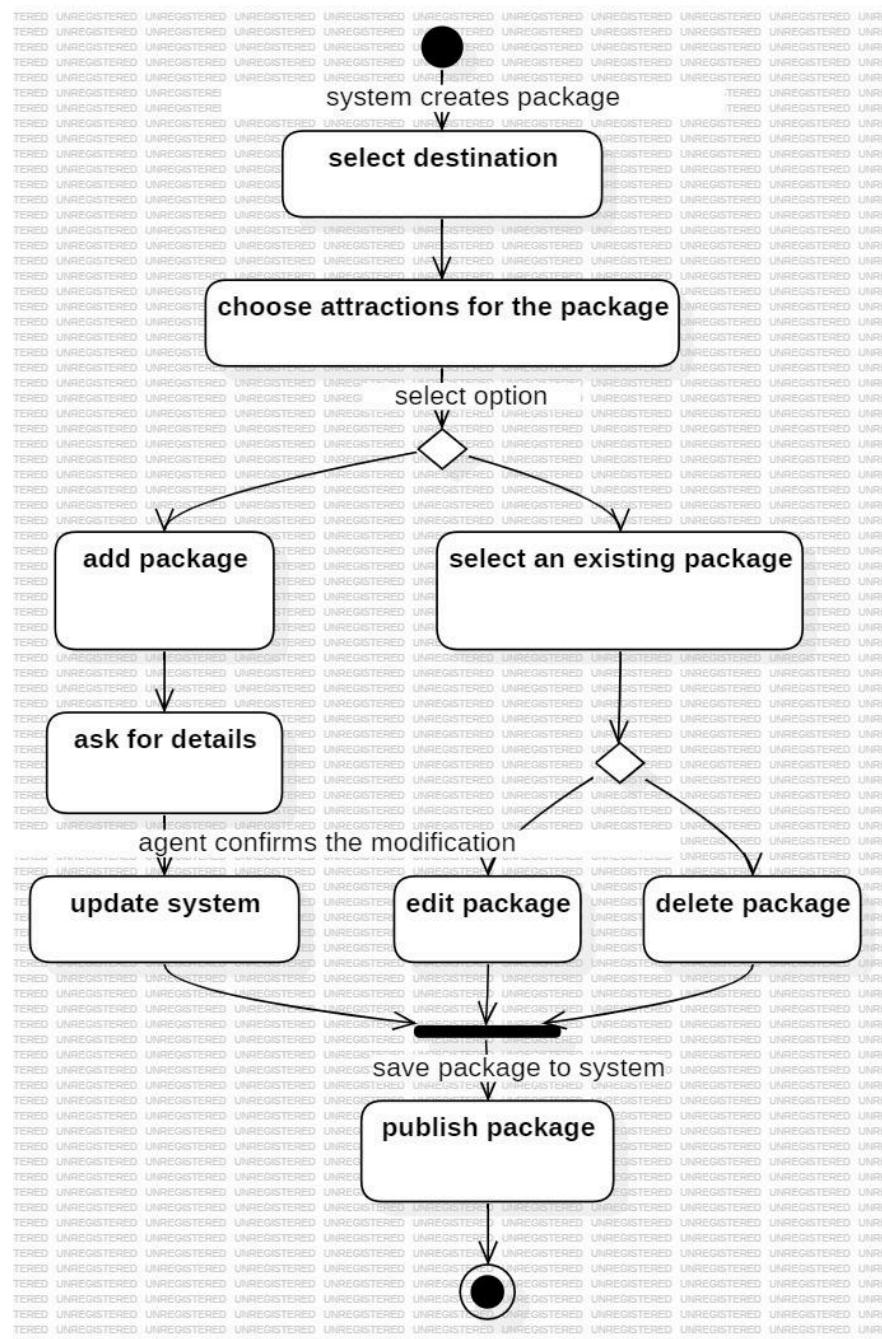
### **Travel Agent Activities**

#### AC-27: Add New Option



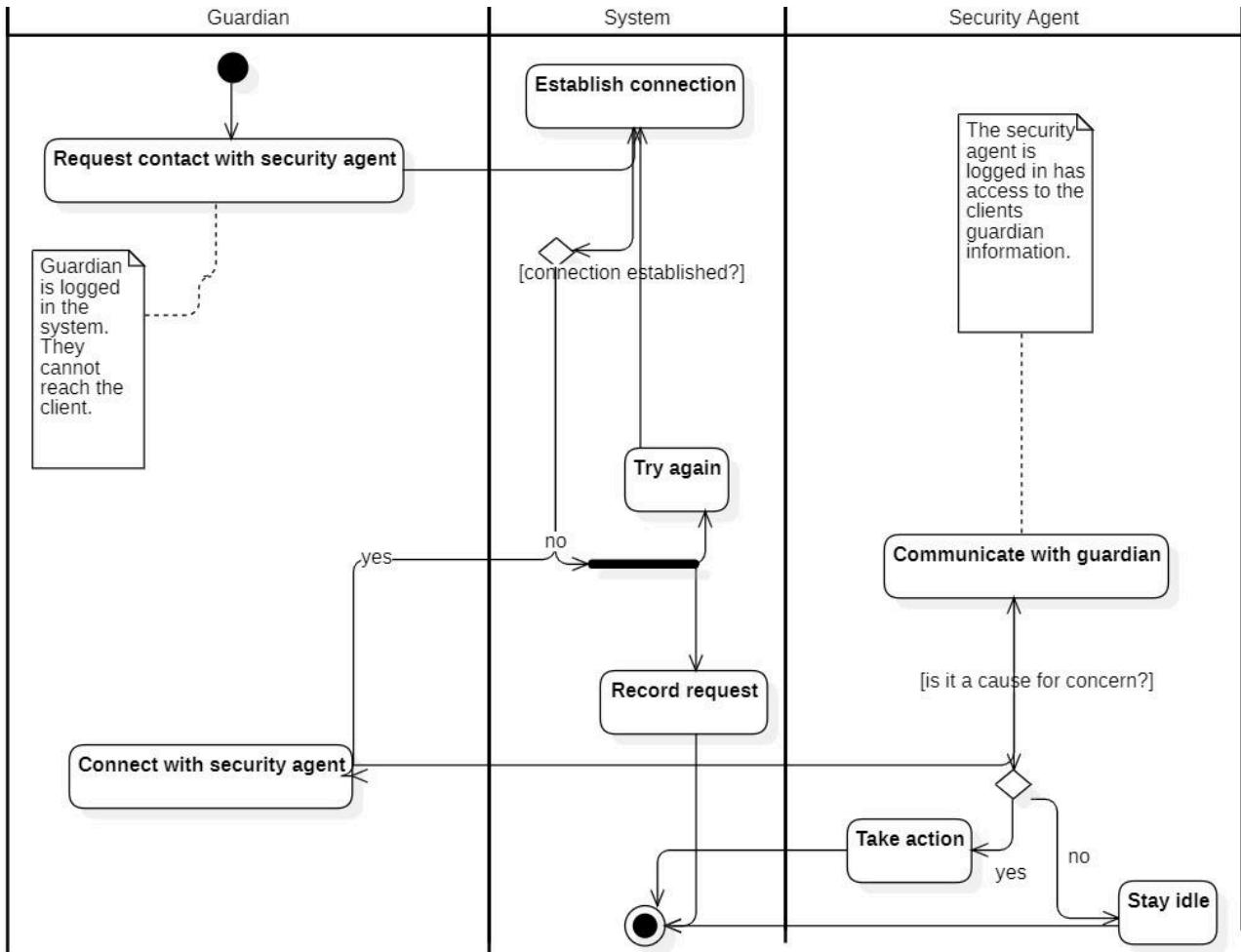
*Travel Agency System Requirements Specification*

AC-28: Create Tour Packages



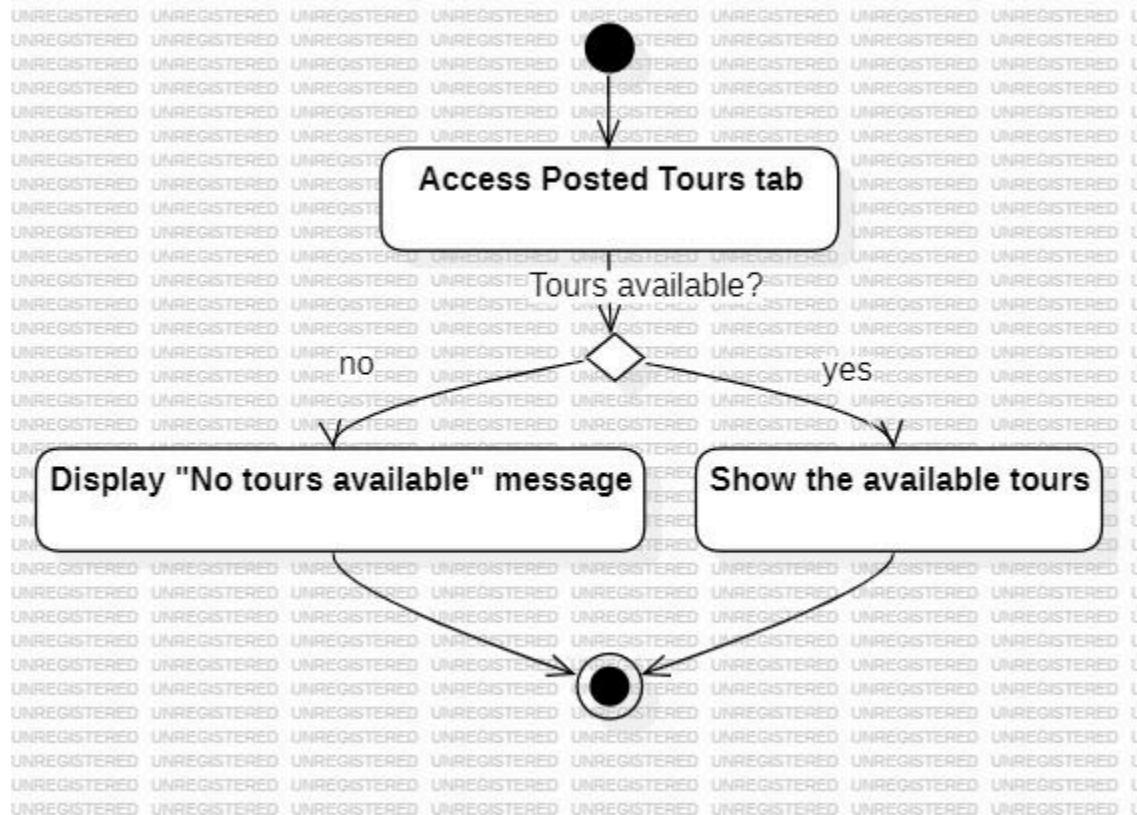
## **Security Agent Activities**

AC-29: Guardian Contact

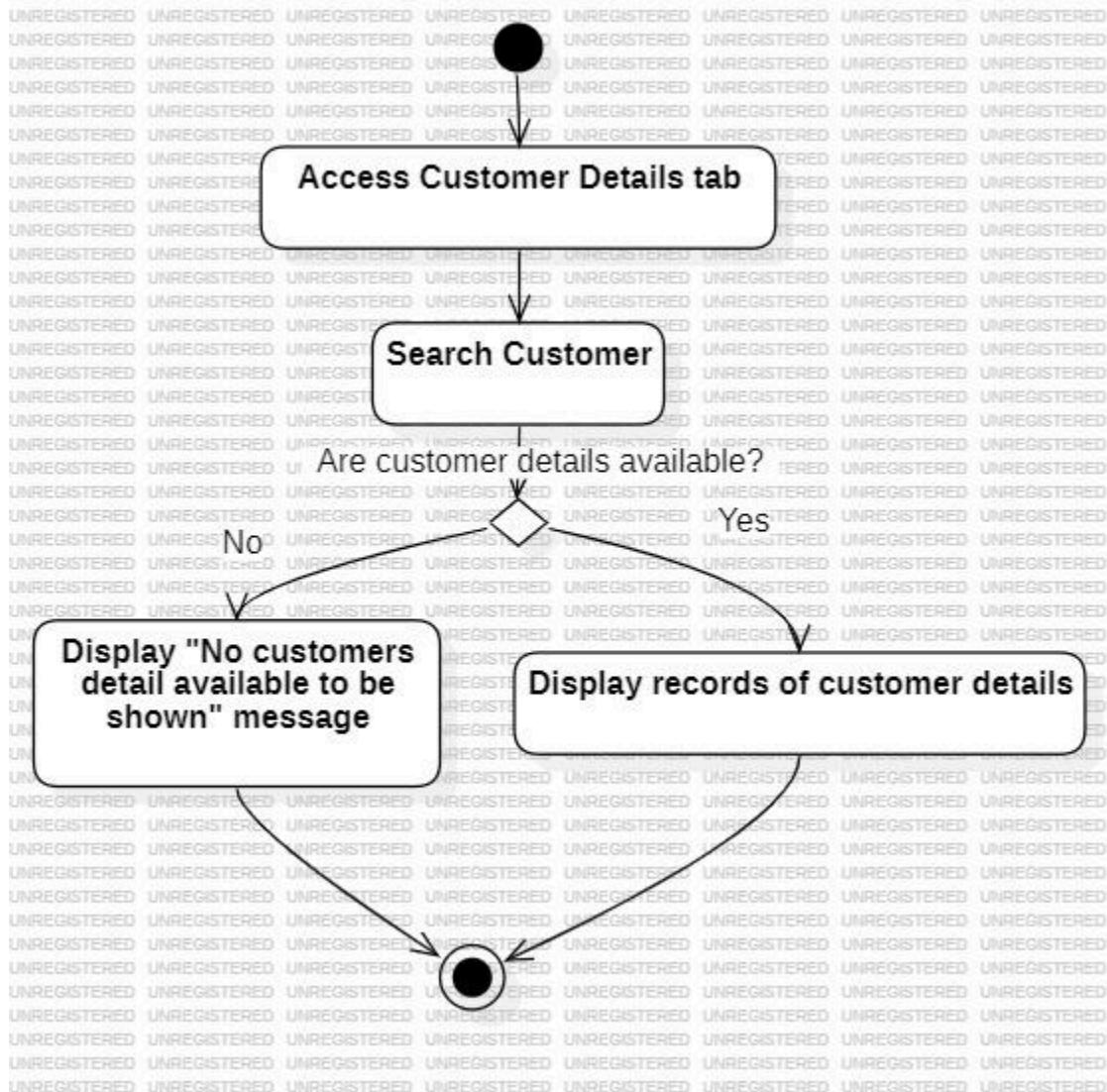


## **All Staff Members**

AC-30: View Posted Tour Packages



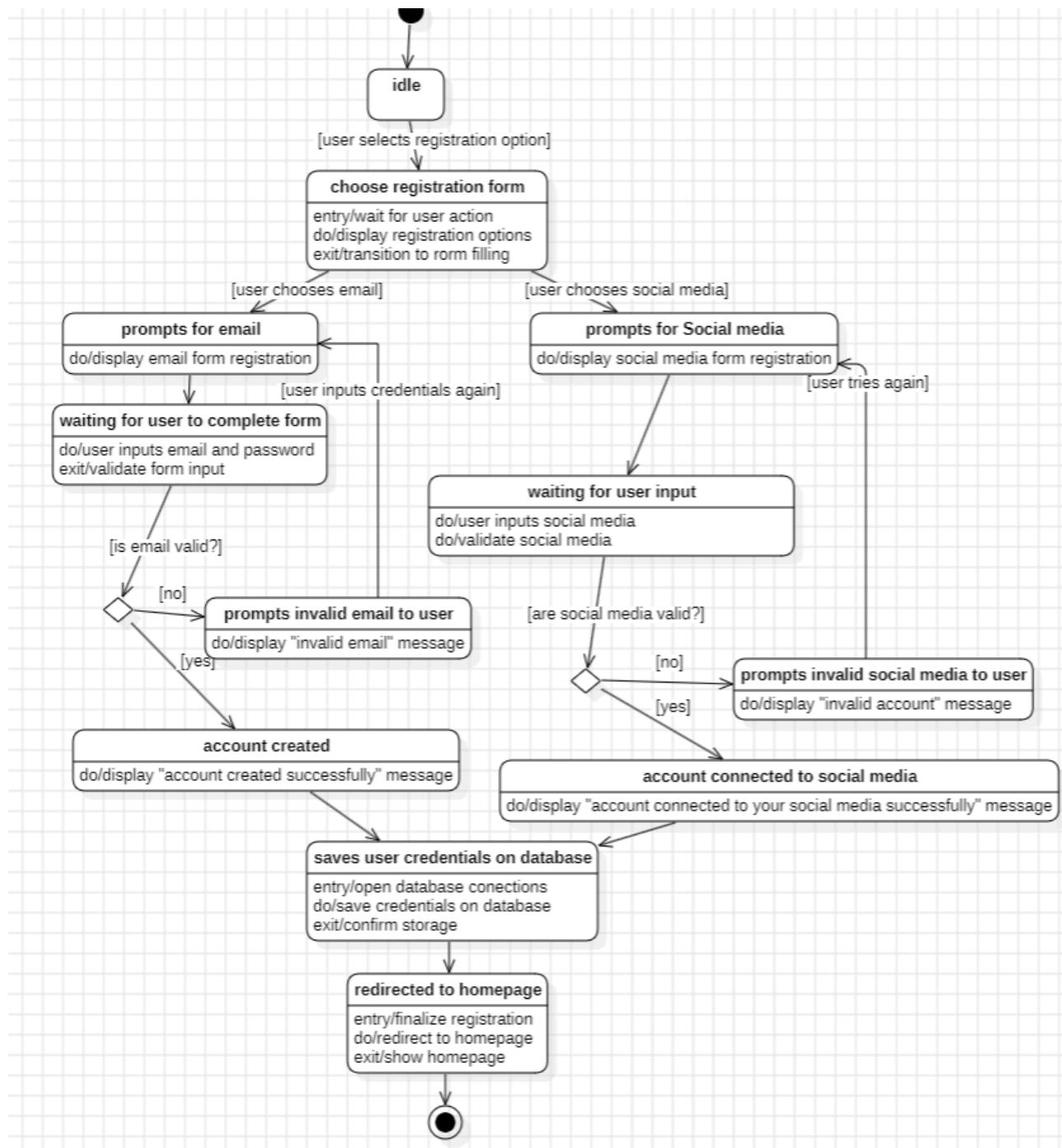
AC-31: View Customer Details



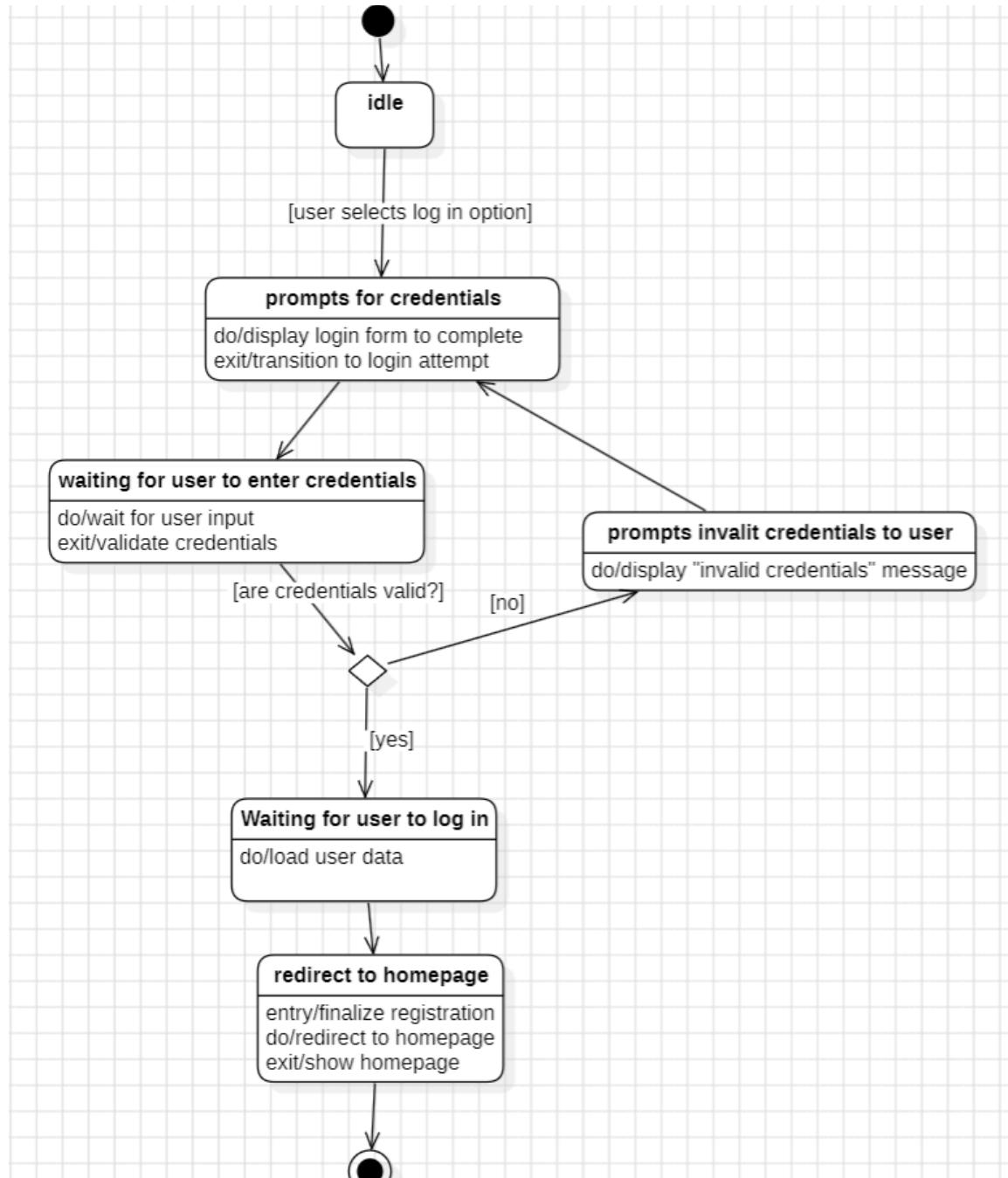
## State Diagrams

### Registration and Login

SC-01: Registration

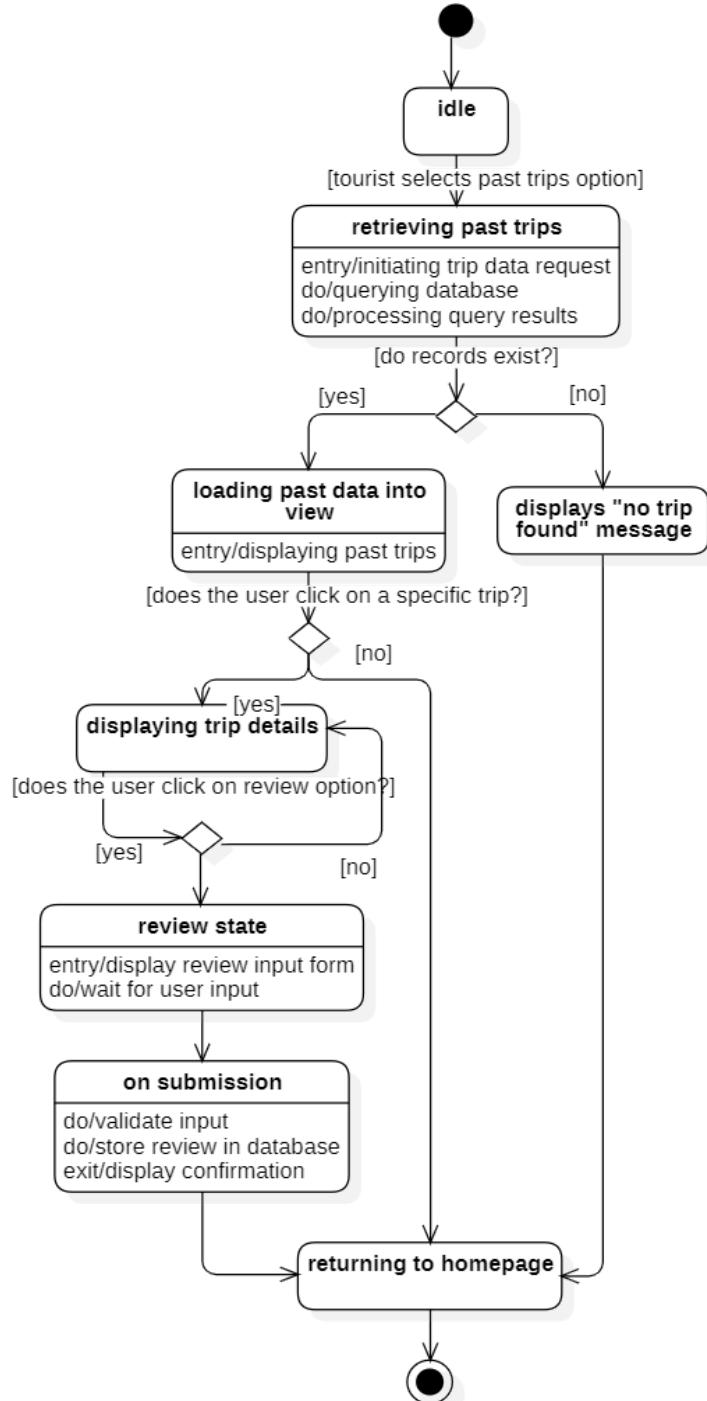


SC-02: Login

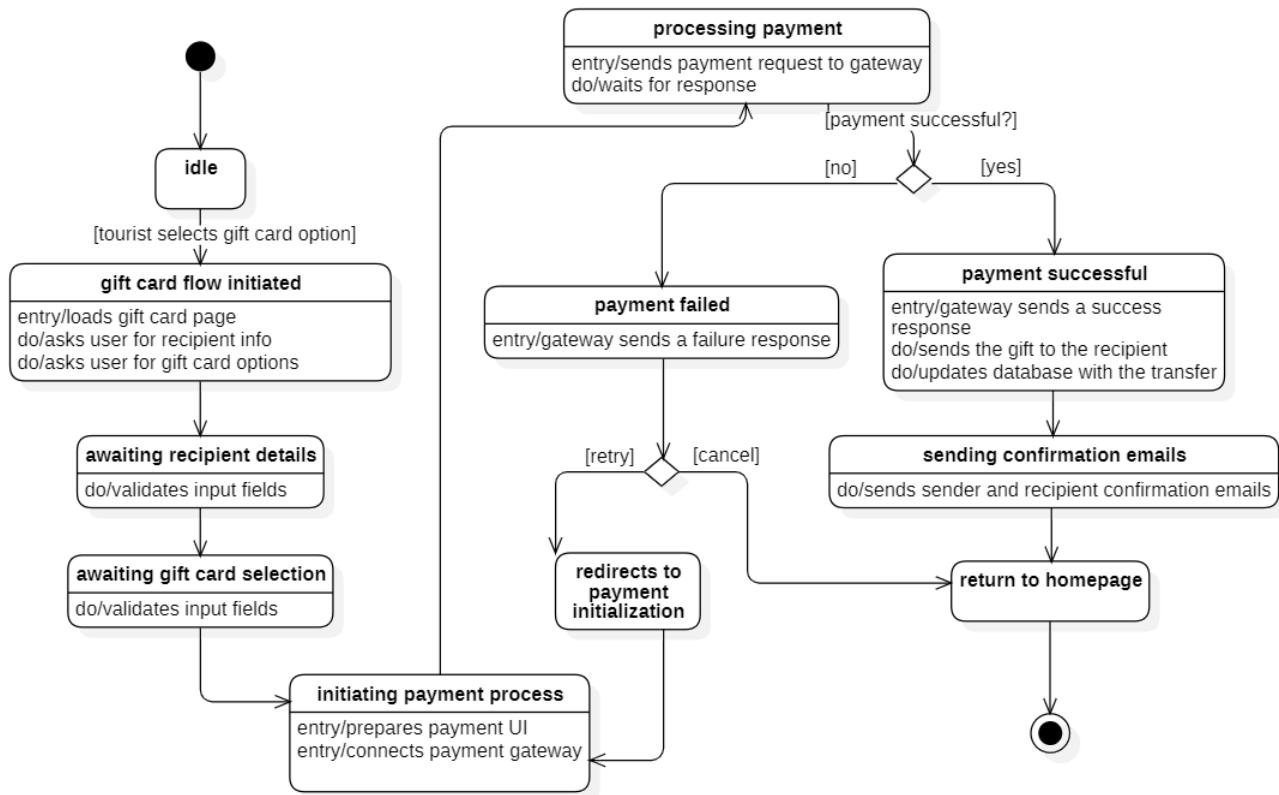


## Homepage

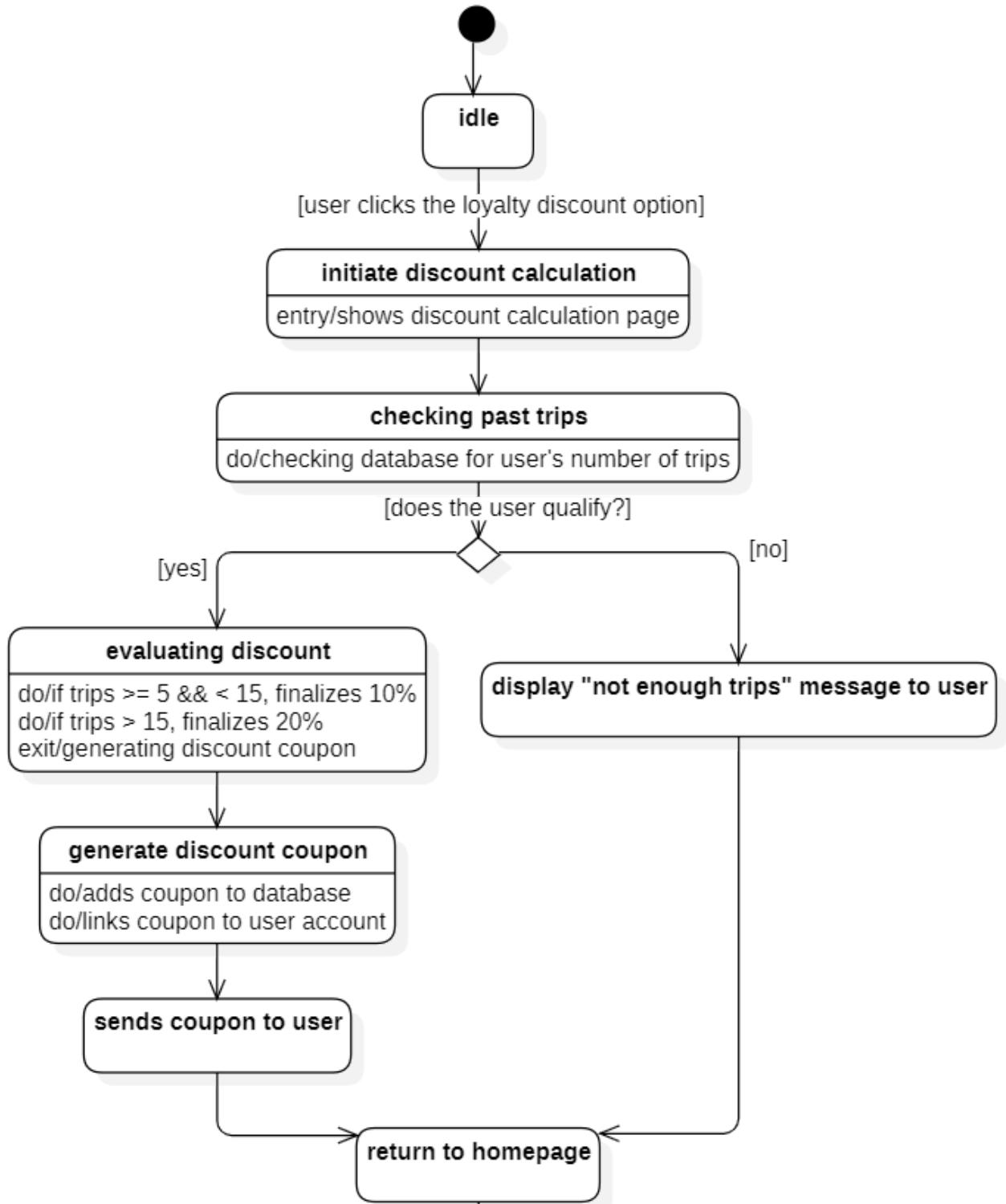
SC-03: Display Past Trips



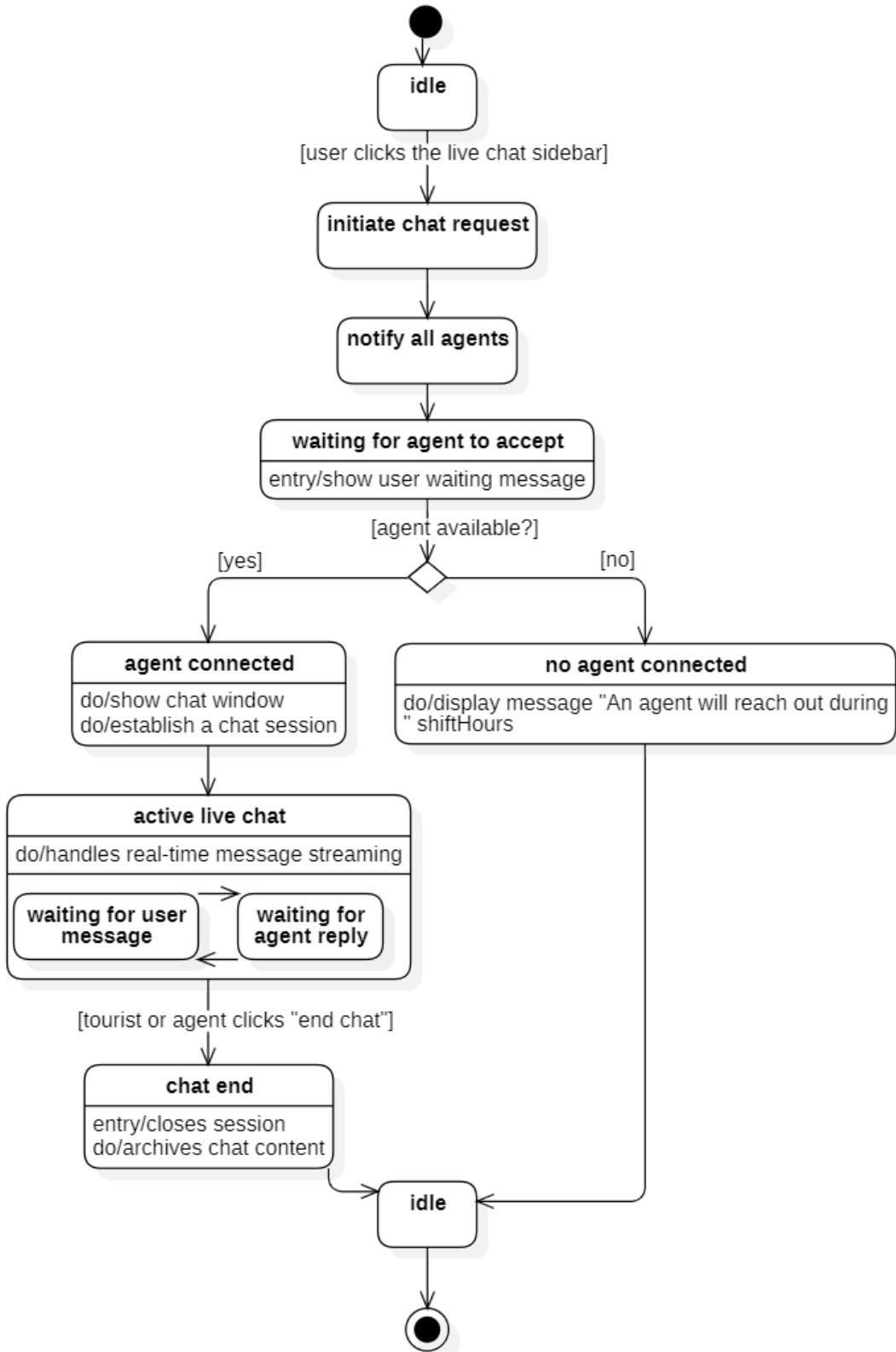
SC-04:



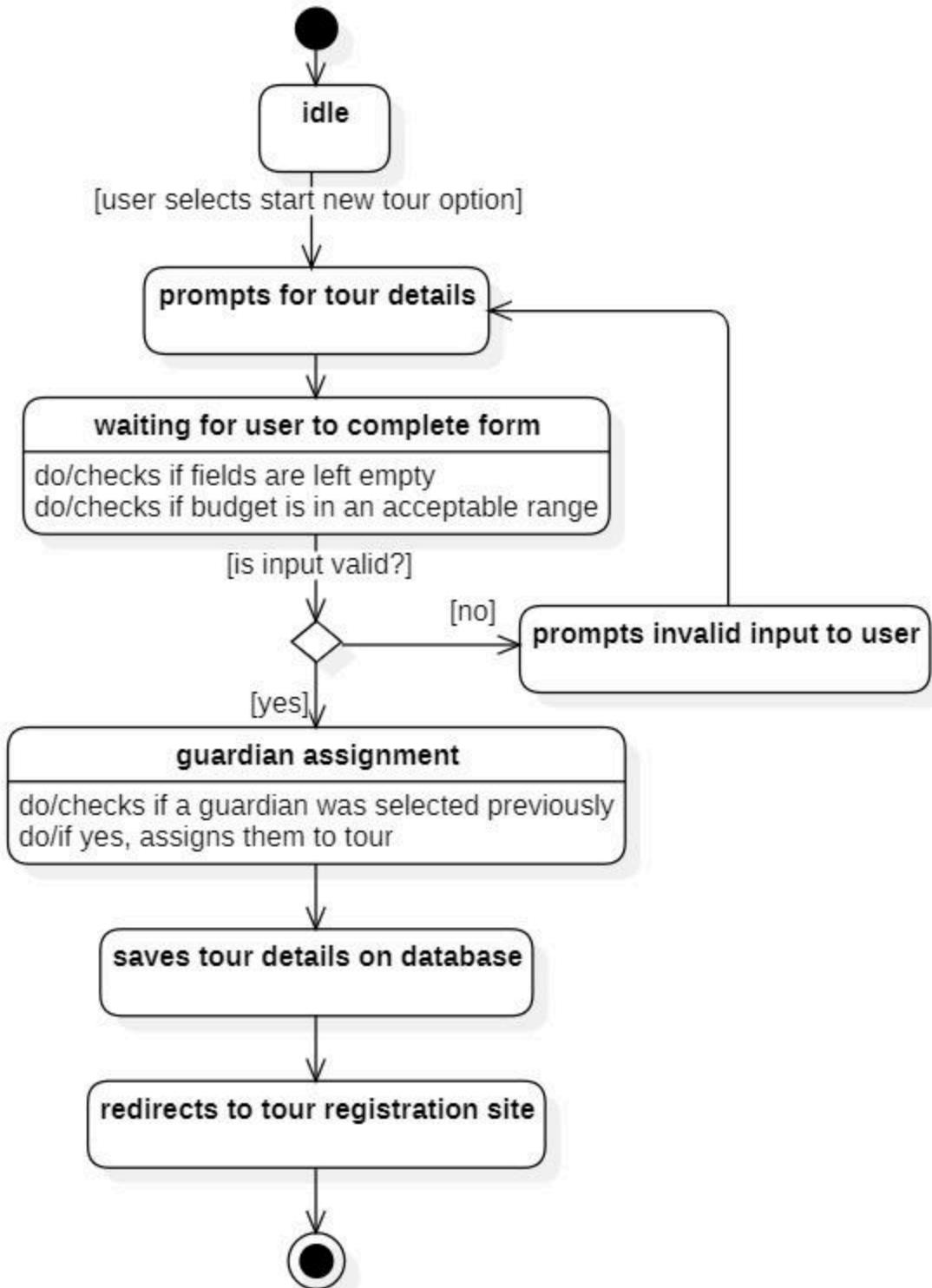
SC-05: Apply Loyalty Discount



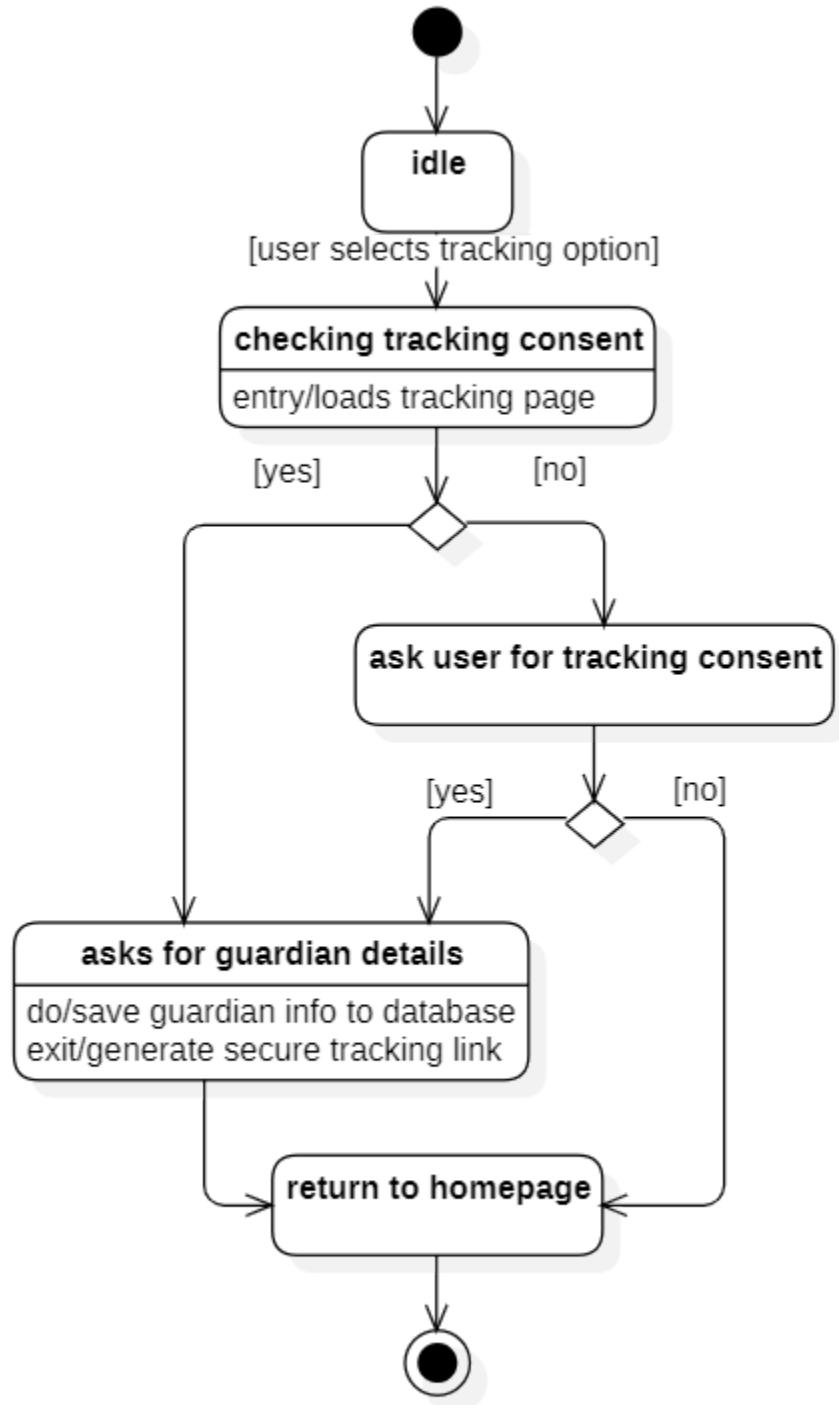
SC-06: Live Chat with Agent



SC-07: Start New Tour



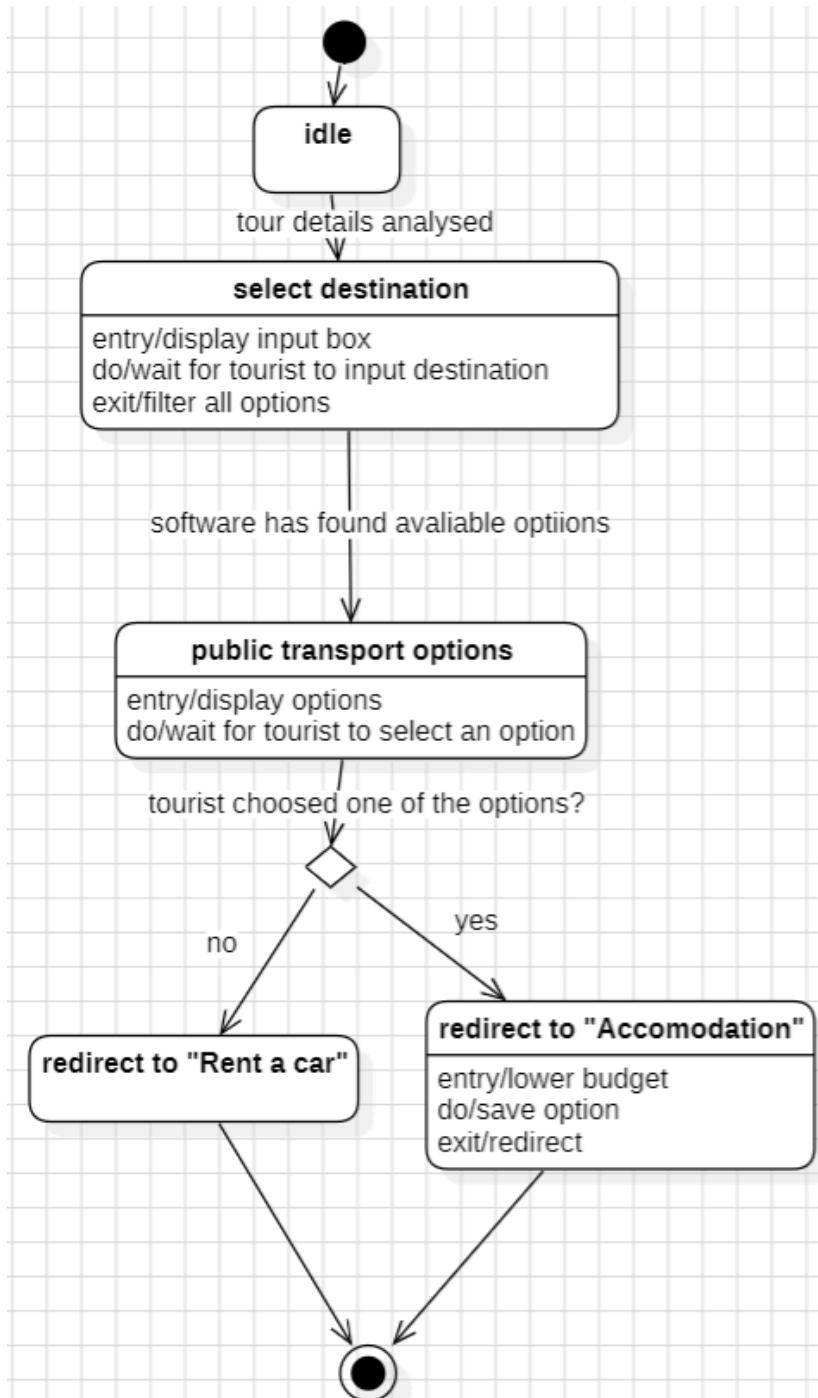
SC-08: Guardian Tracking and Security Assistance



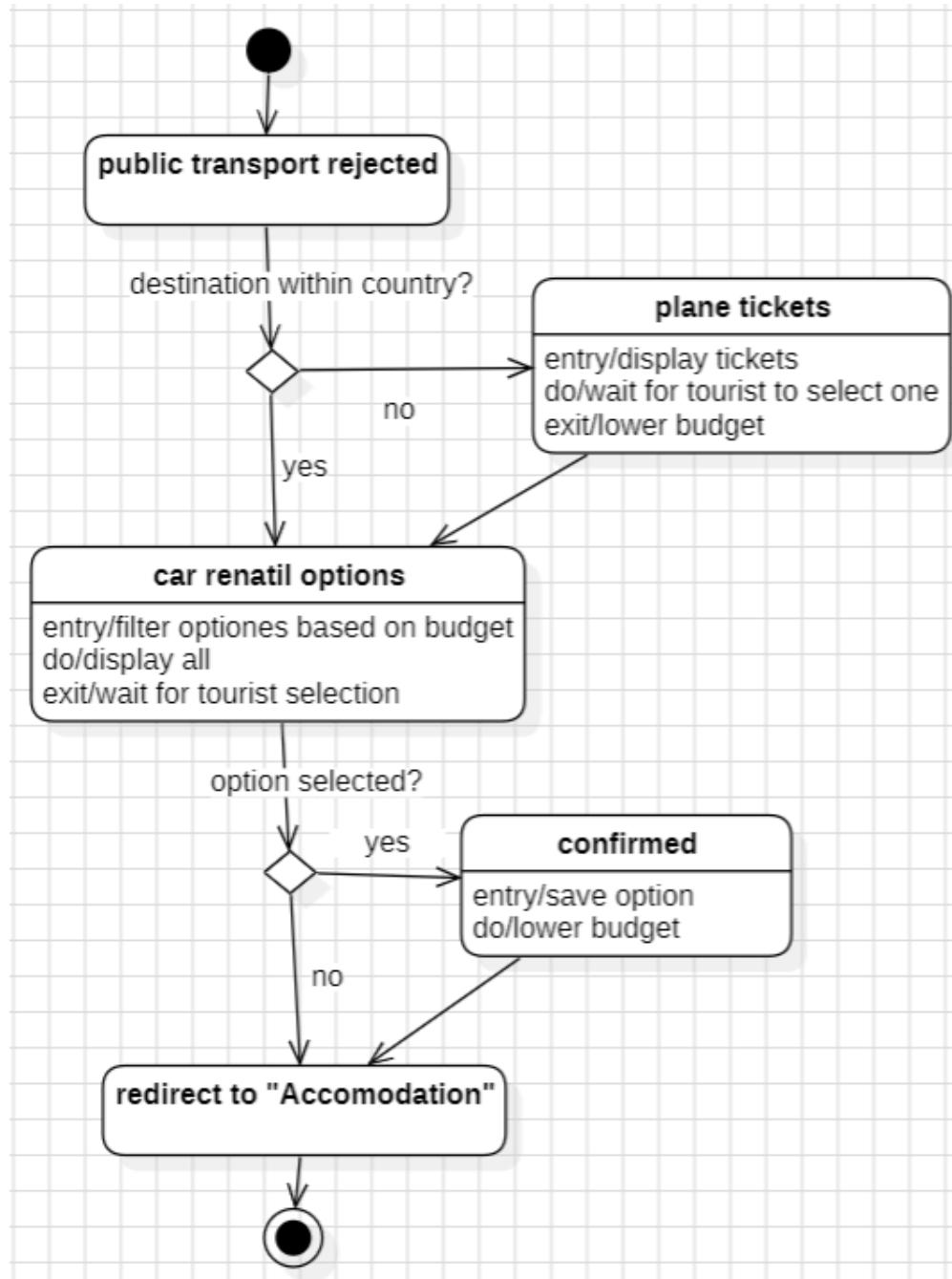
*Travel Agency System Requirements Specification*

## **Prepayment Tour Activities**

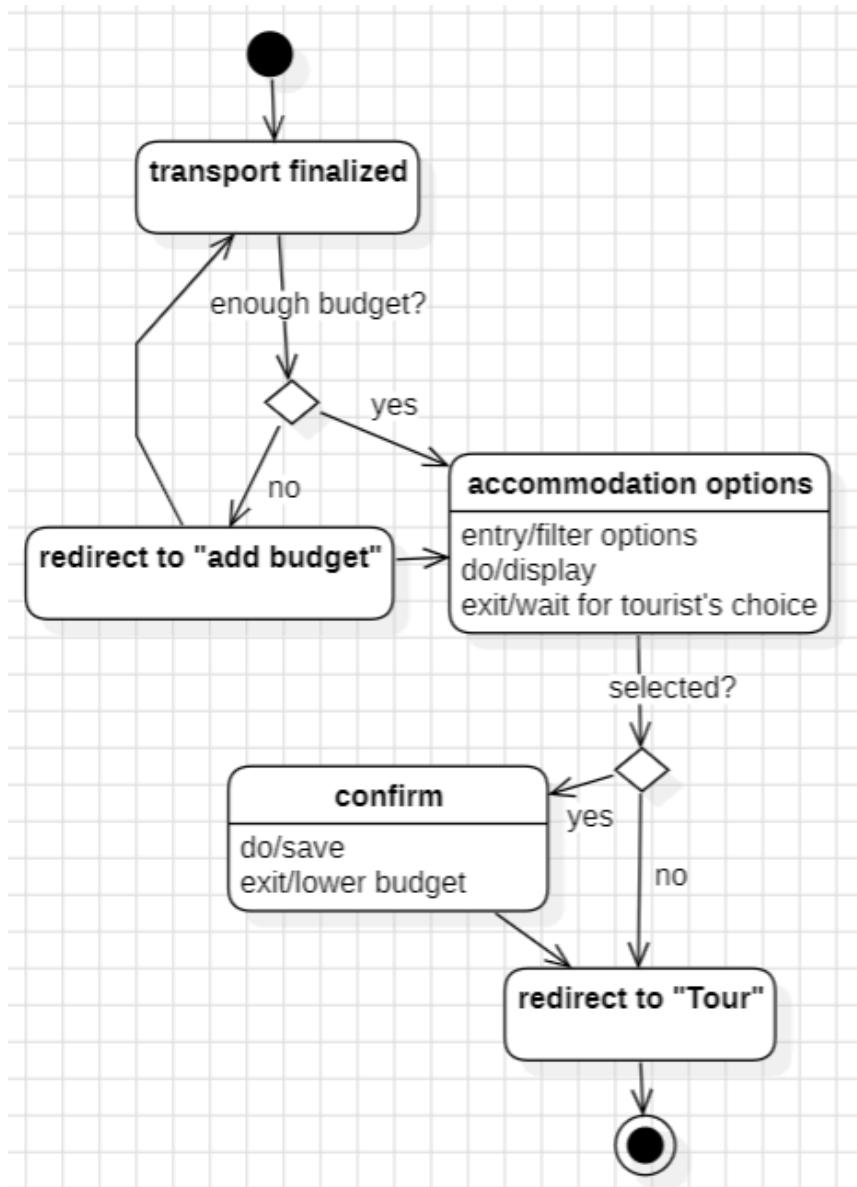
SC-9: Public Transportation



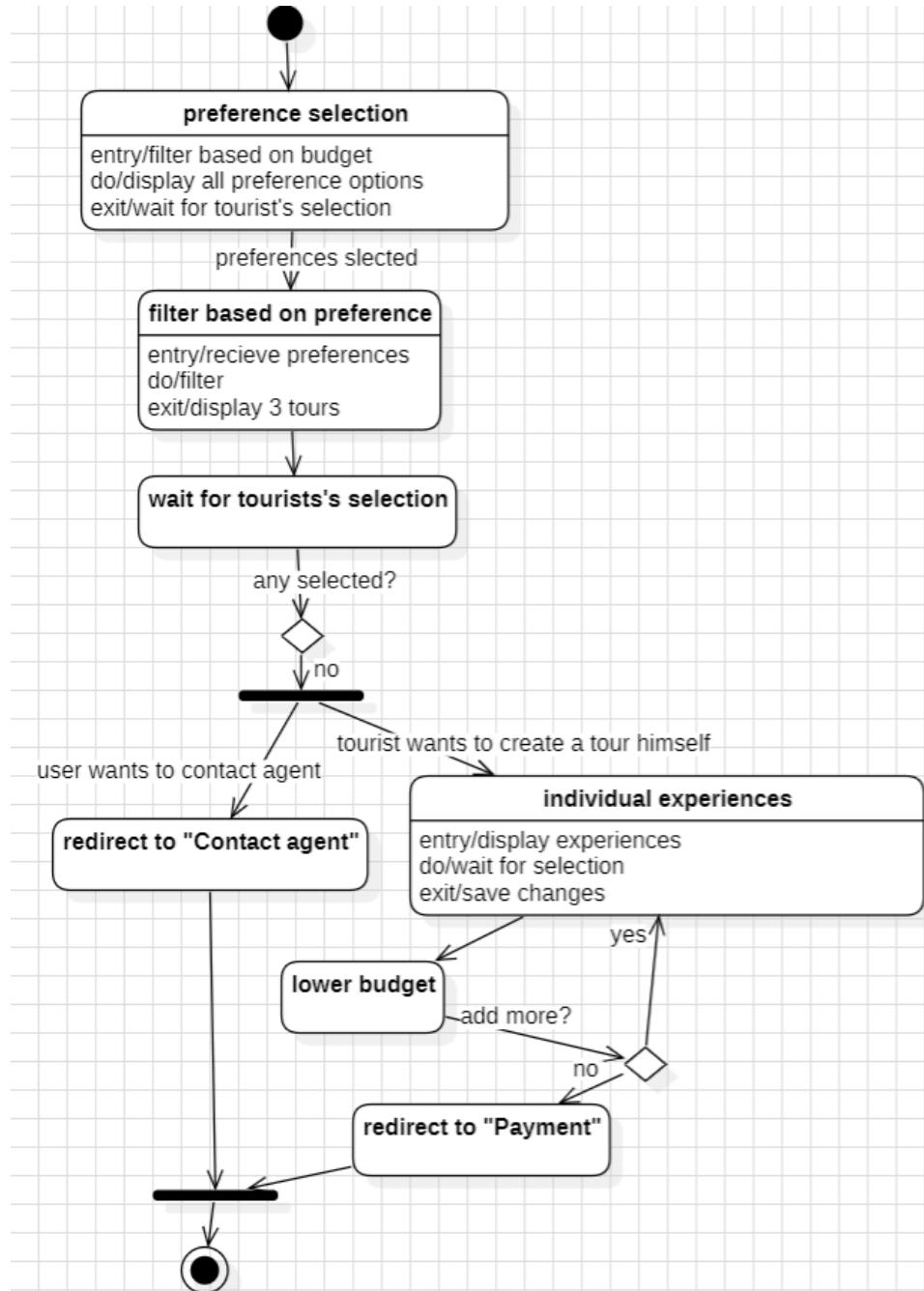
SC-10: Car\_Rental



SC-11: Reserve\_Accommodation

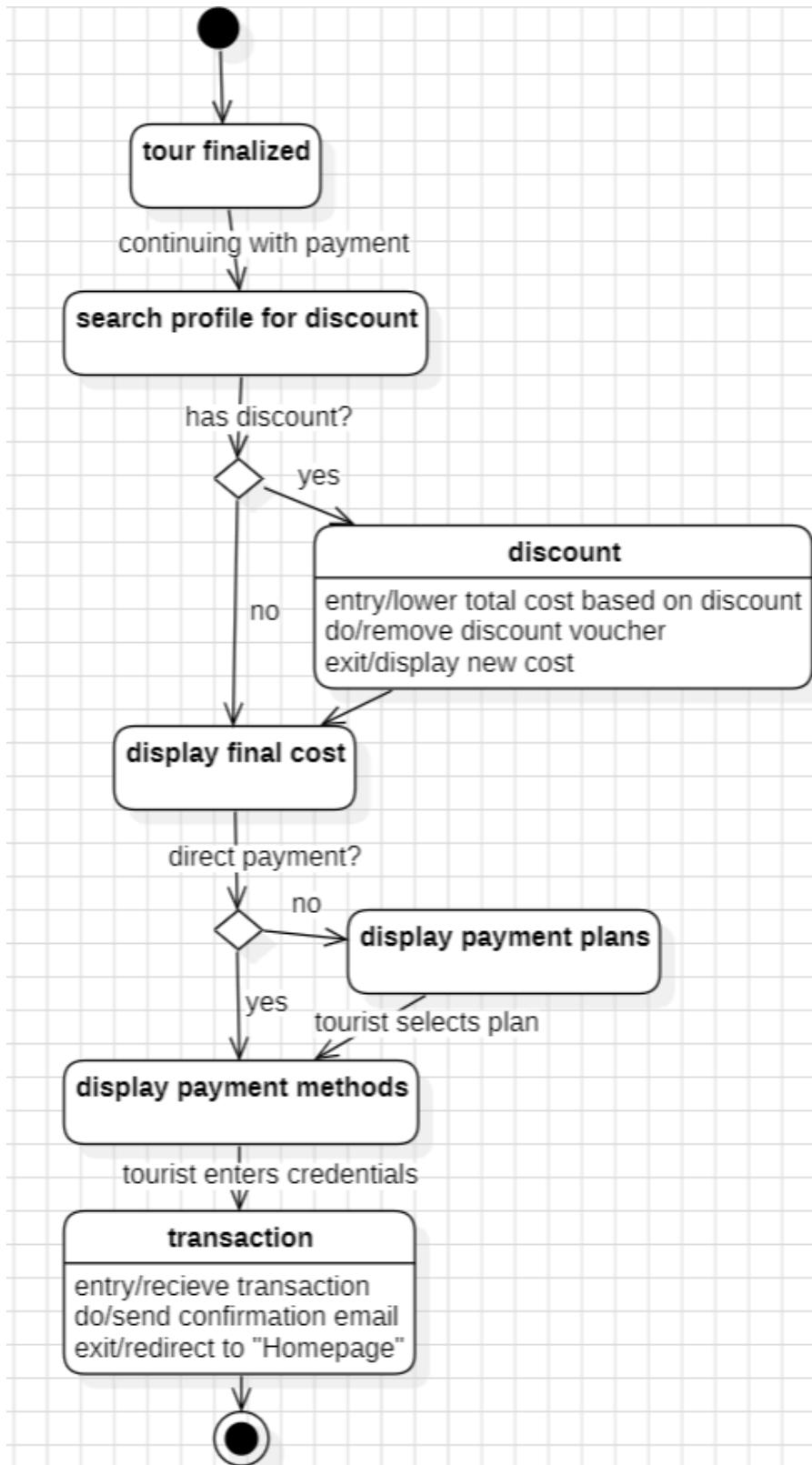


SC-12: Book\_Tour\_Package



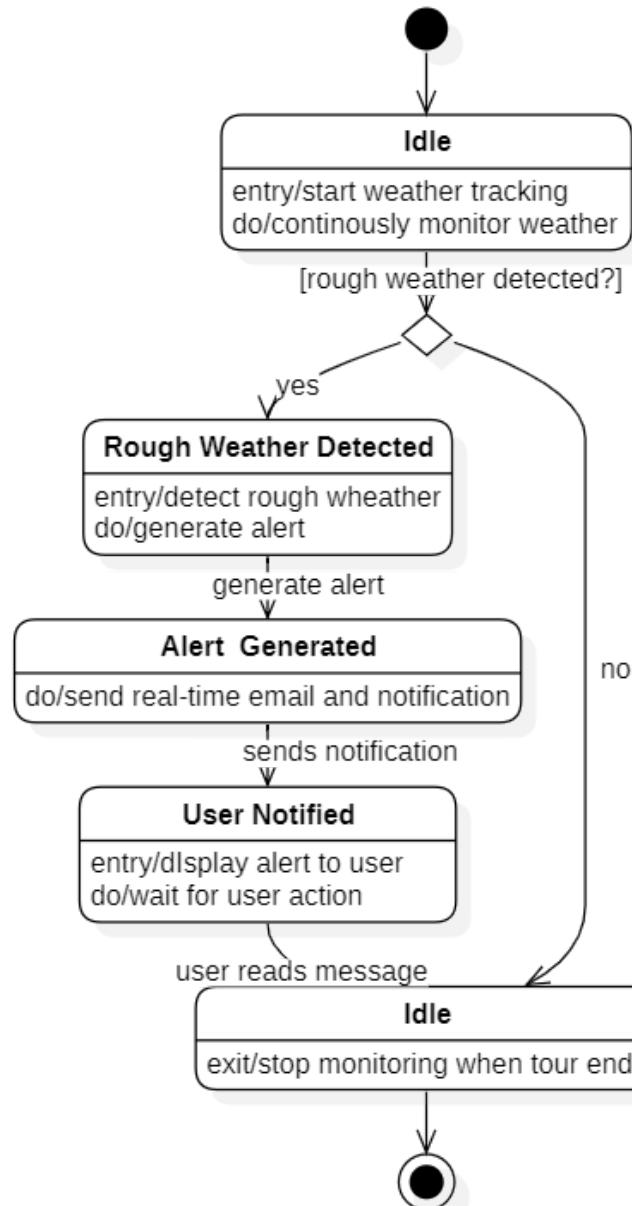
*Travel Agency System Requirements Specification*

SC-13: Online\_Payment\_and\_Email Receipt && SD-14: Payment\_Plans

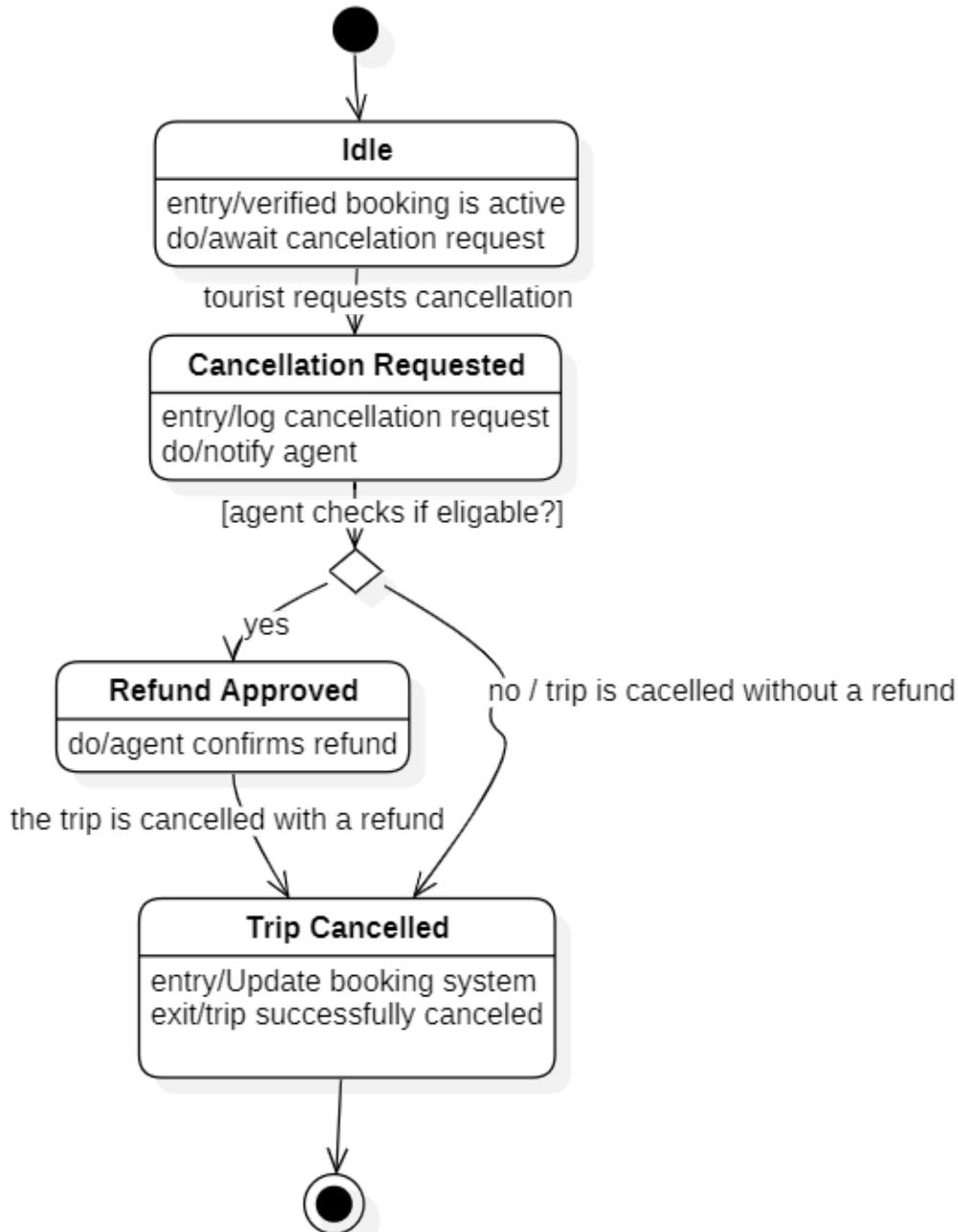


## **Postpayment Tour Activities**

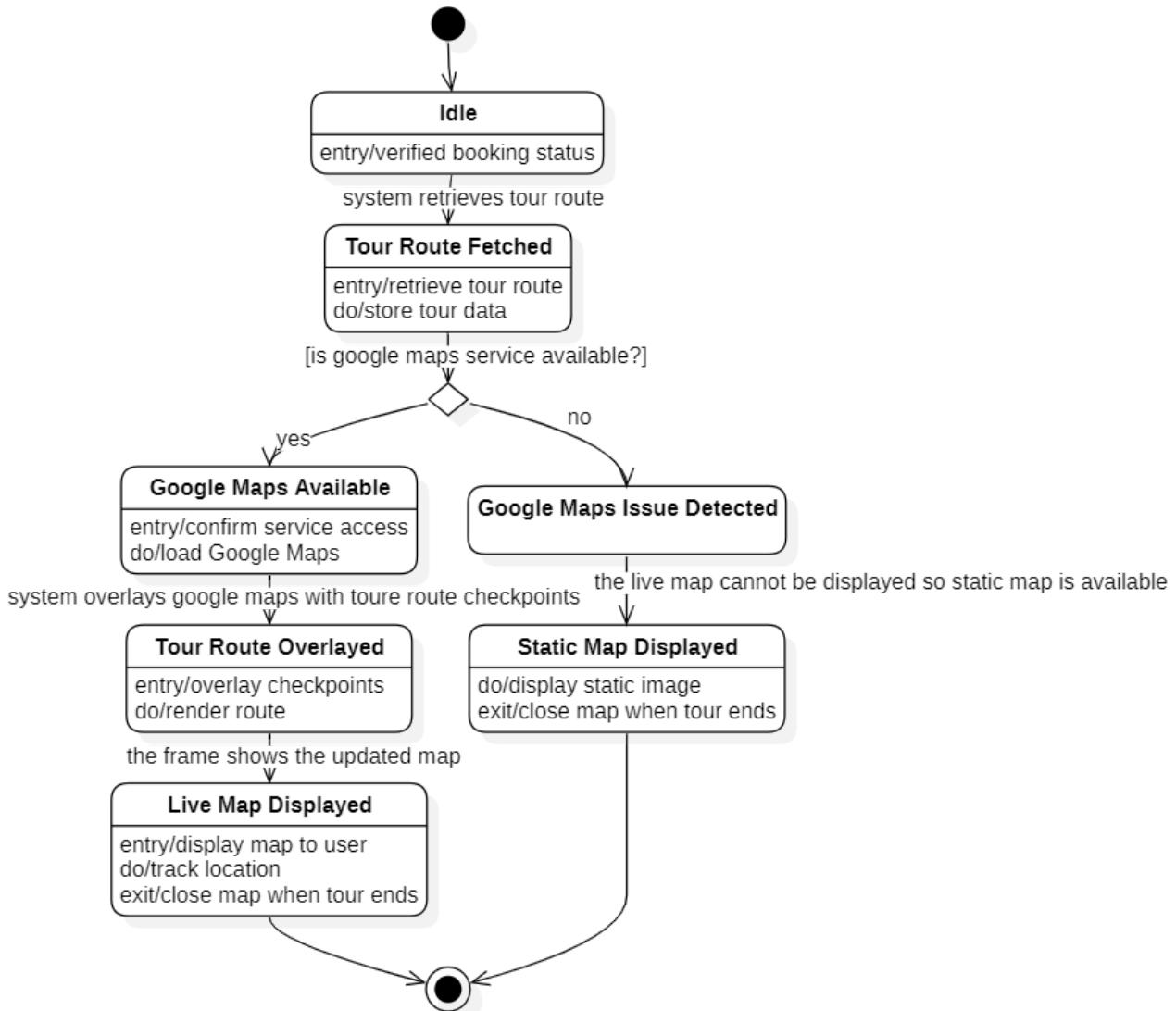
SC-15: Weather\_Alert



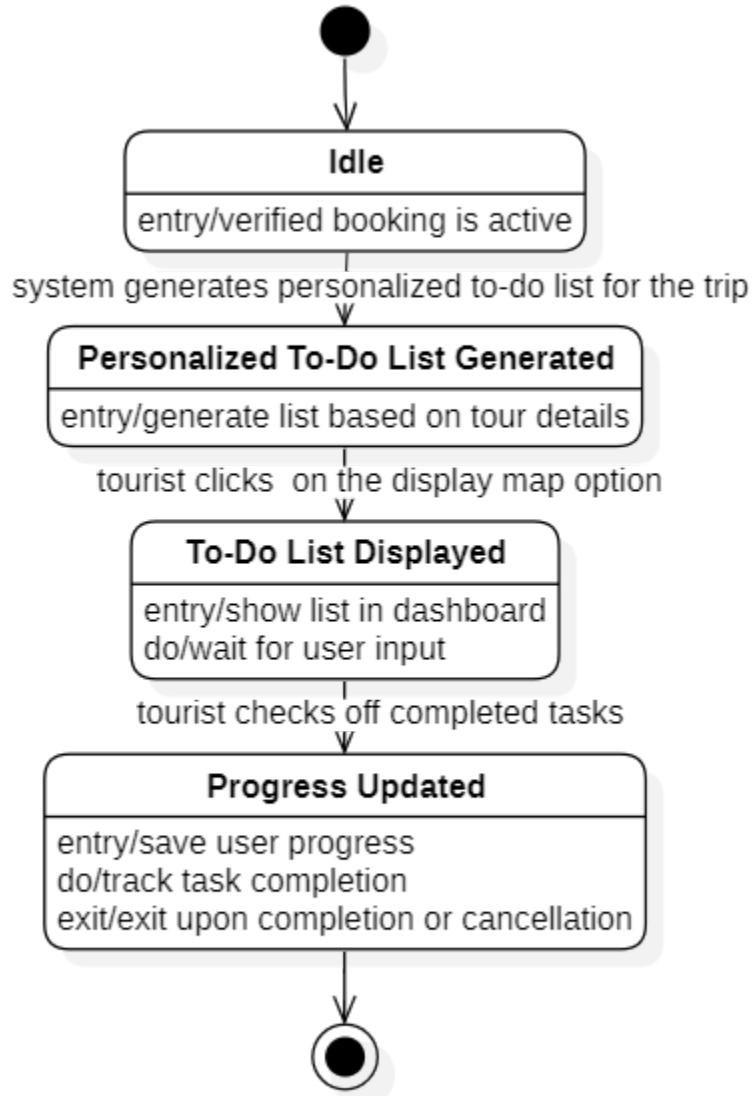
SC-16: Cancel\_And\_Refund\_Customer\_Trip



SC-17: Map\_Display

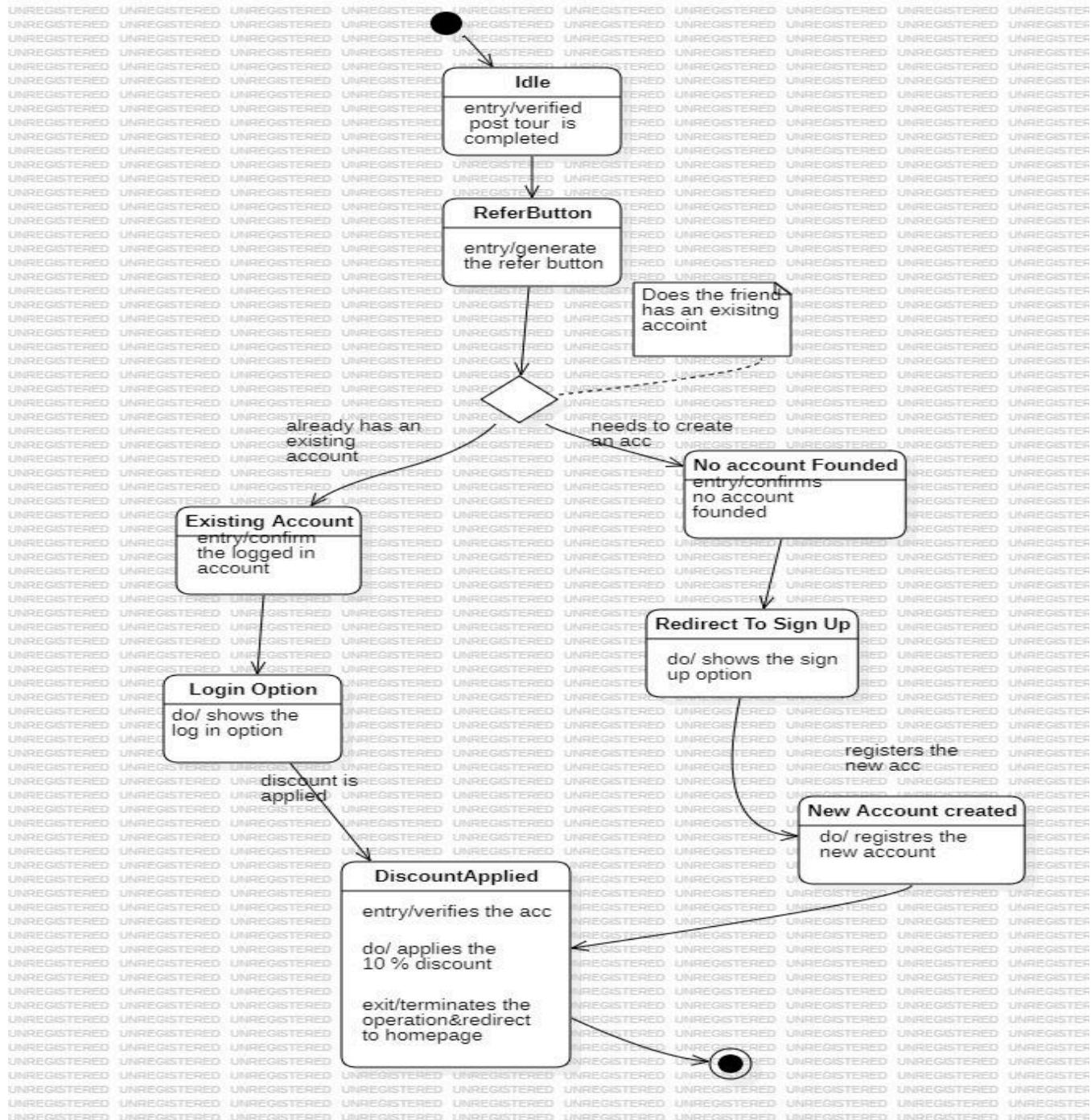


SC-18: To-Do\_List



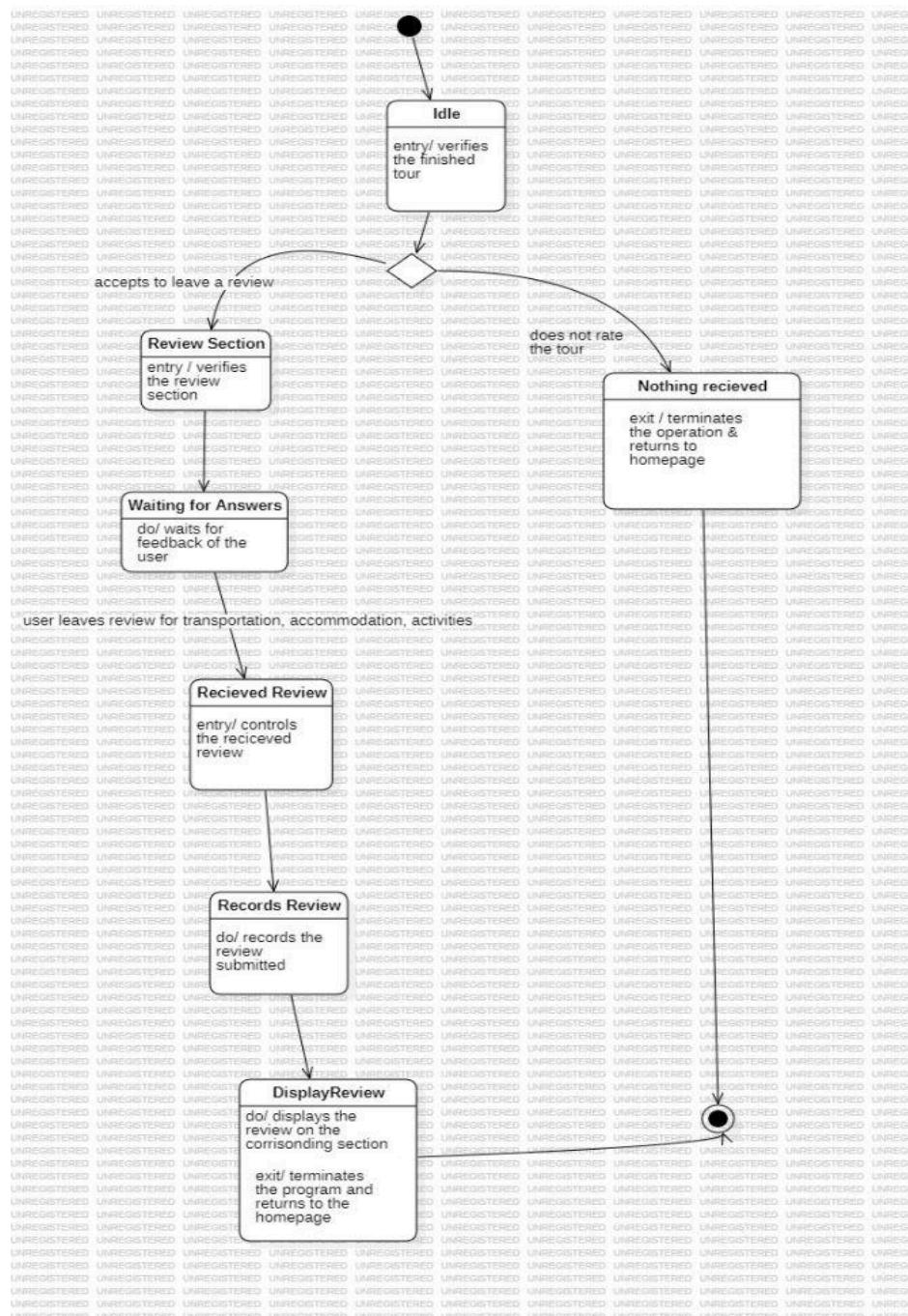
## Post Tour Activities

SC-19 : Refer a friend

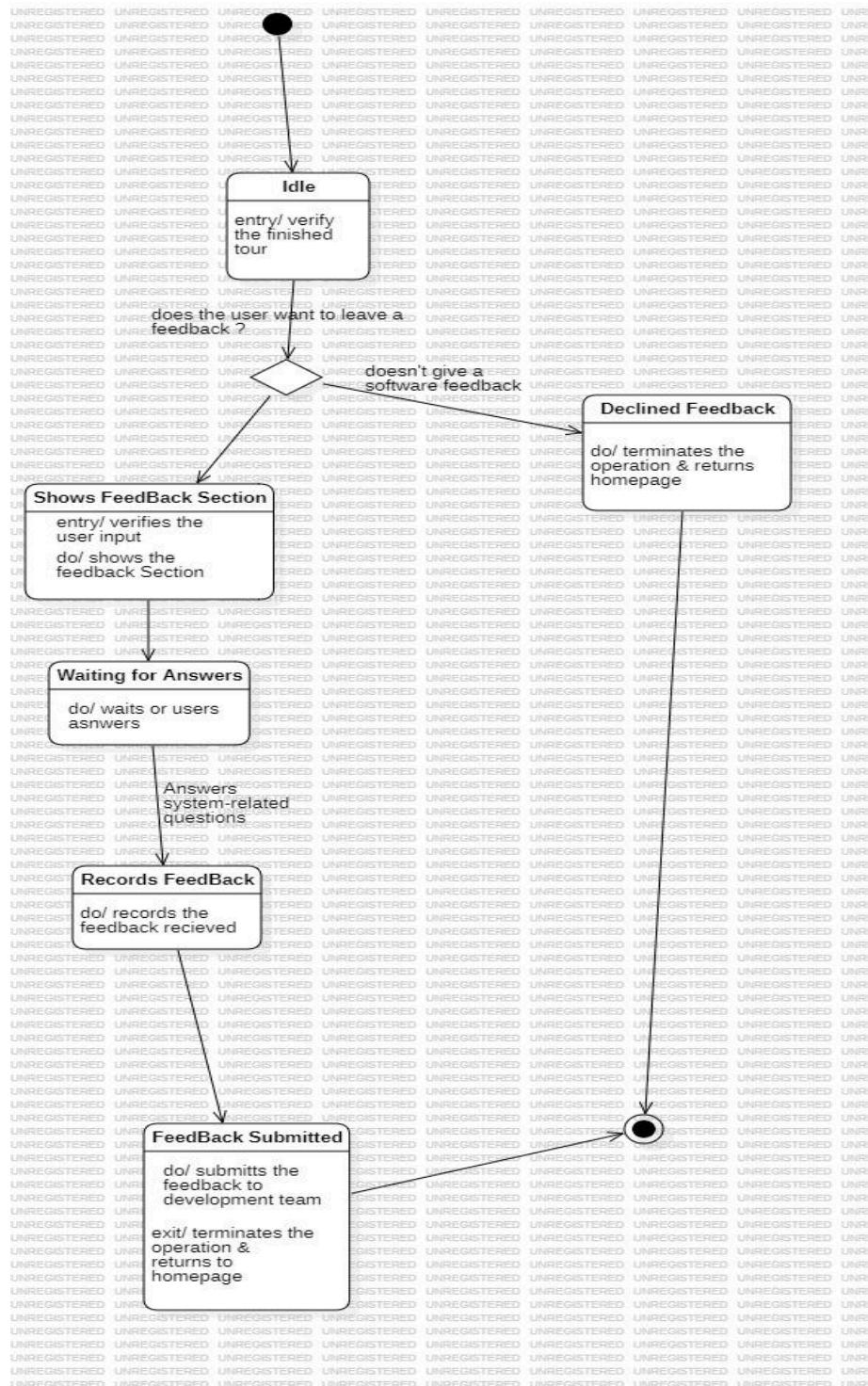


## Travel Agency System Requirements Specification

### SC-20: Review

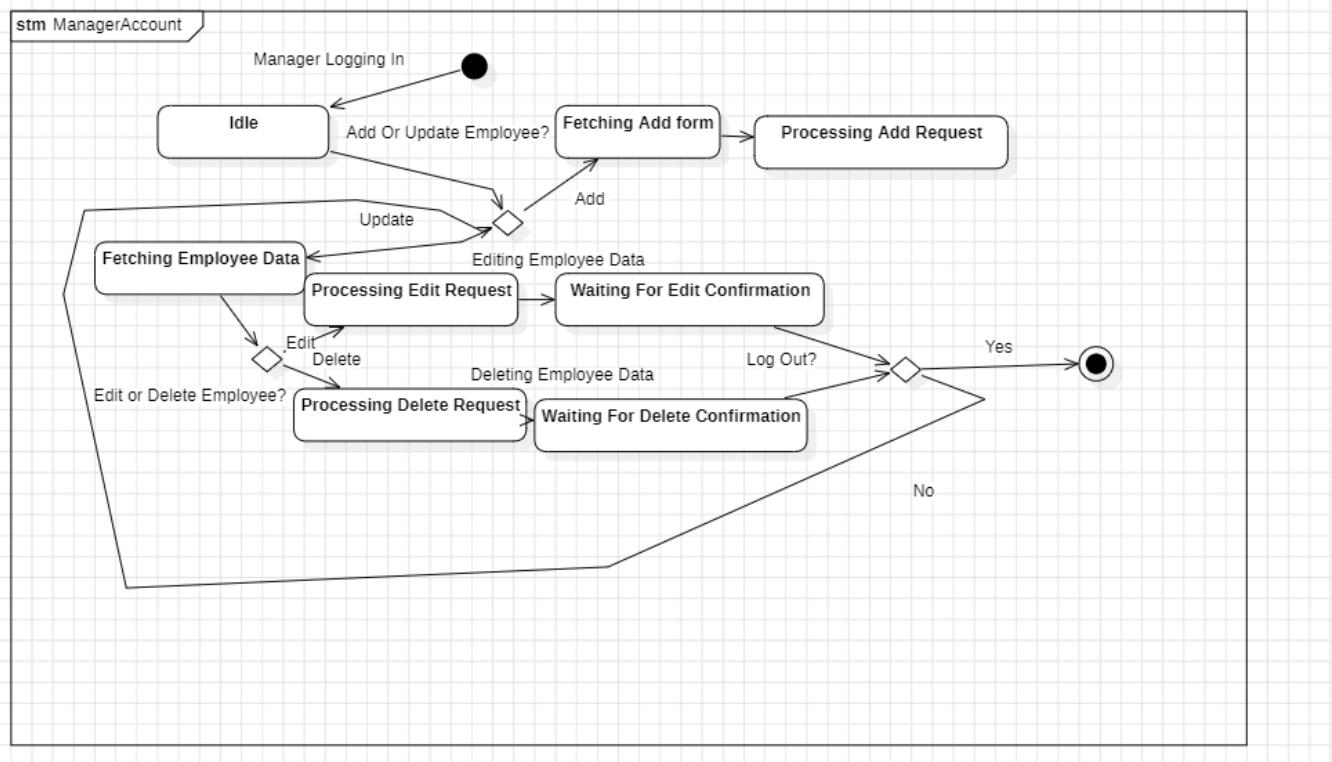


SC-21: Software Feedback

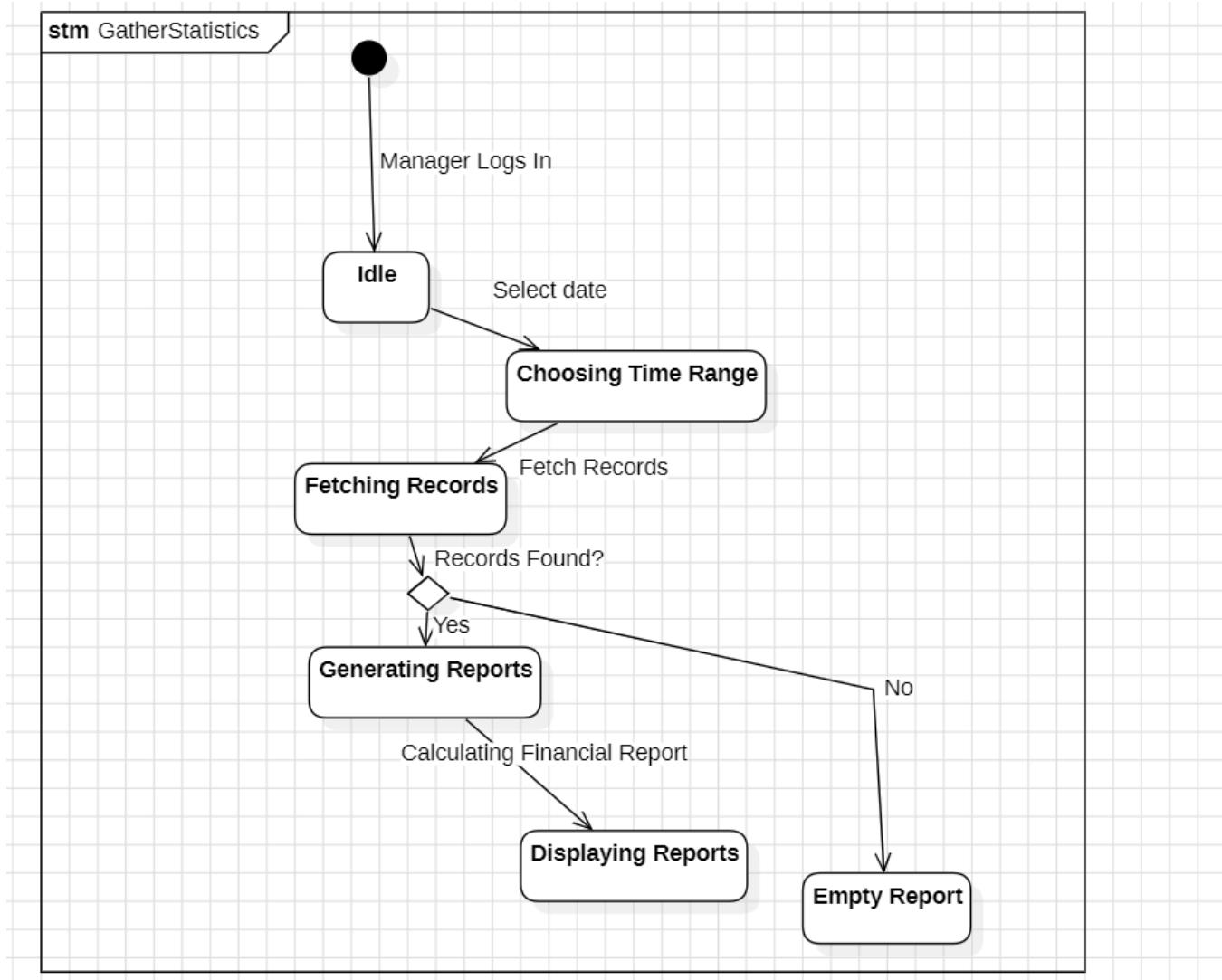


## **Manager Activities**

### SC-22: Manage Employees

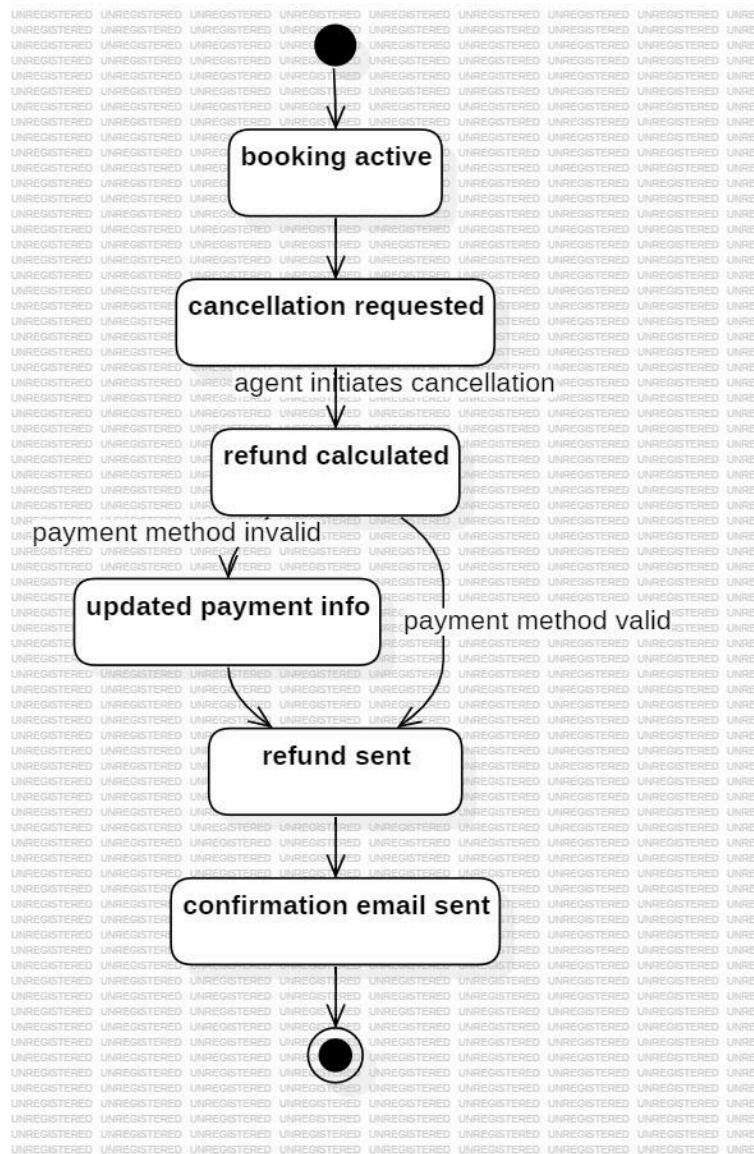


SC-23: Gather Statistics

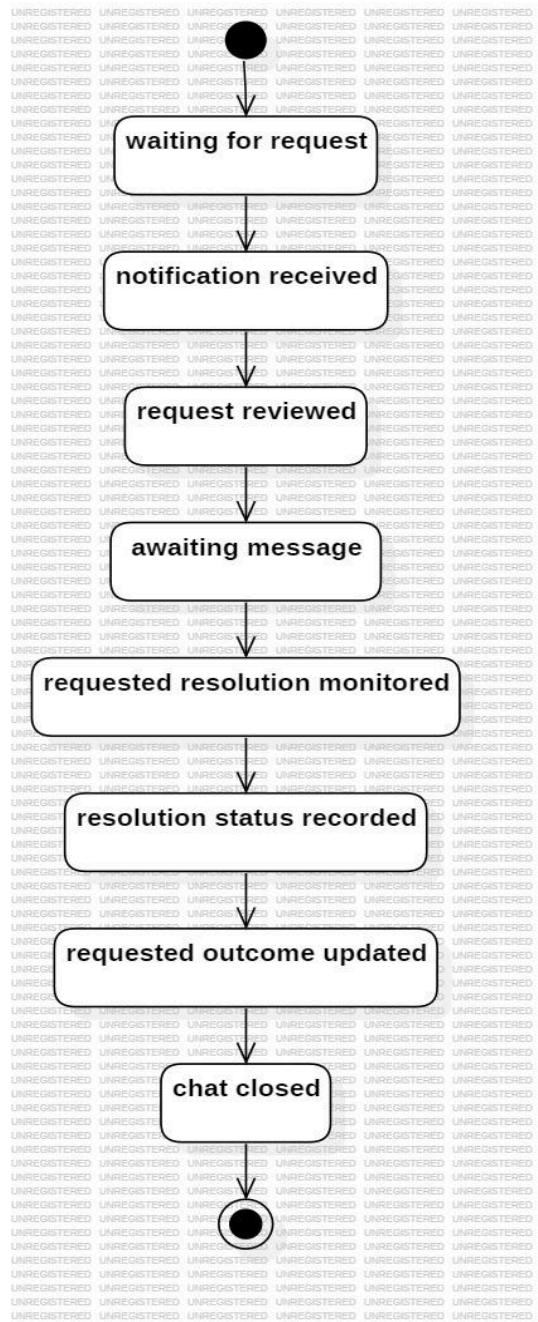


## **Live Assistant Agent Activities**

### SC-24: Cancellation and Refund

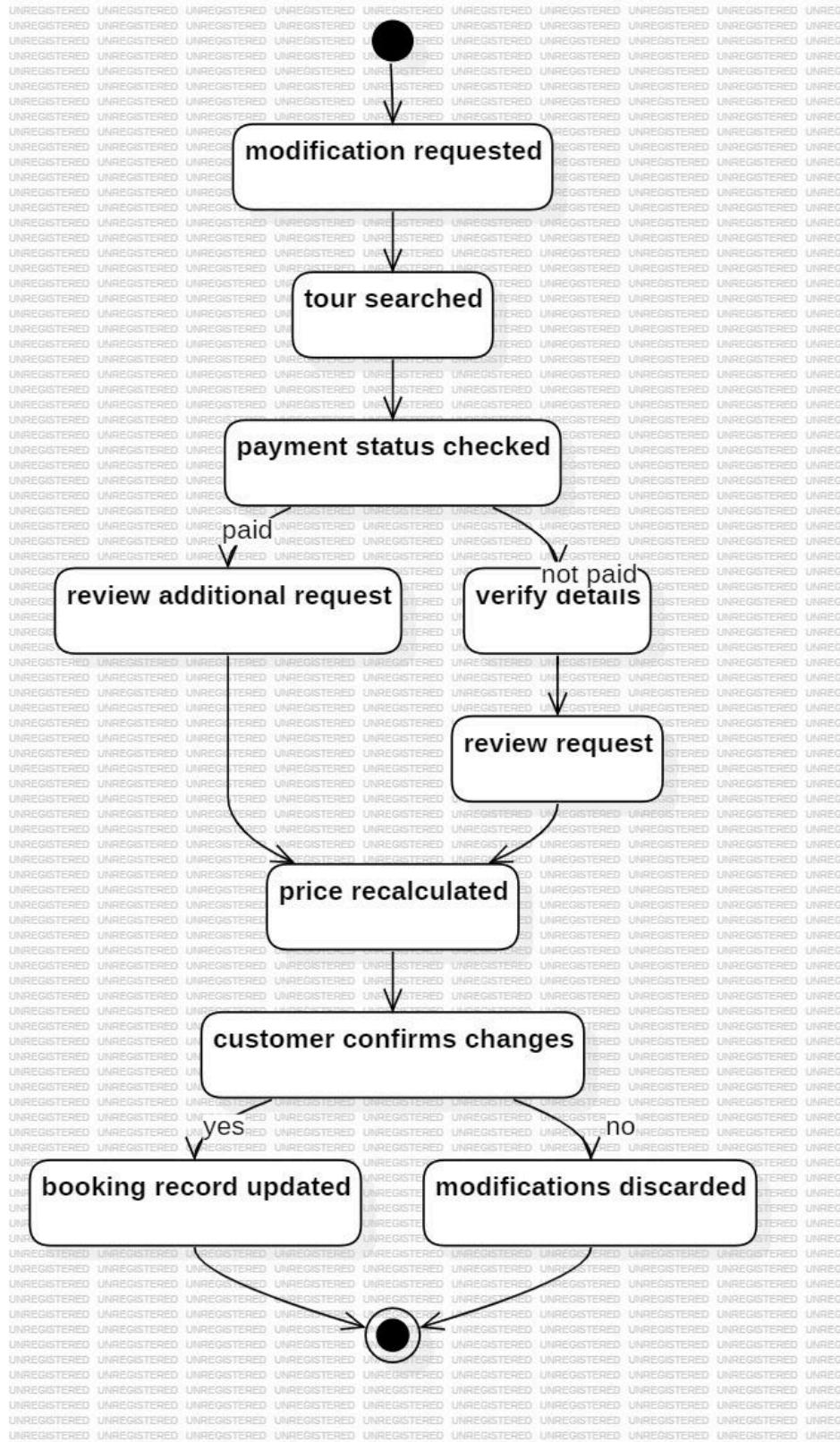


SC-25: Communicate with Tourist



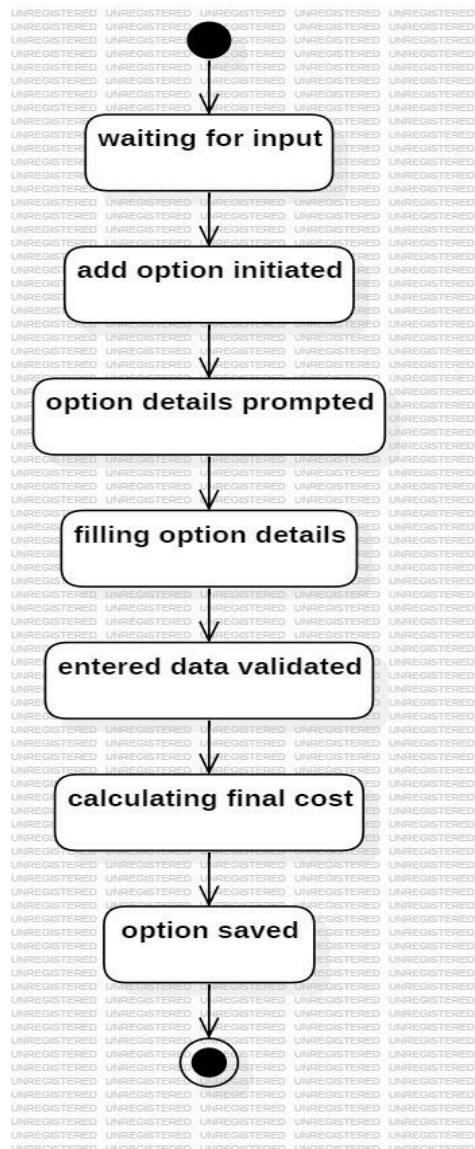
SC-26: Modify Customer Trip

## Travel Agency System Requirements Specification

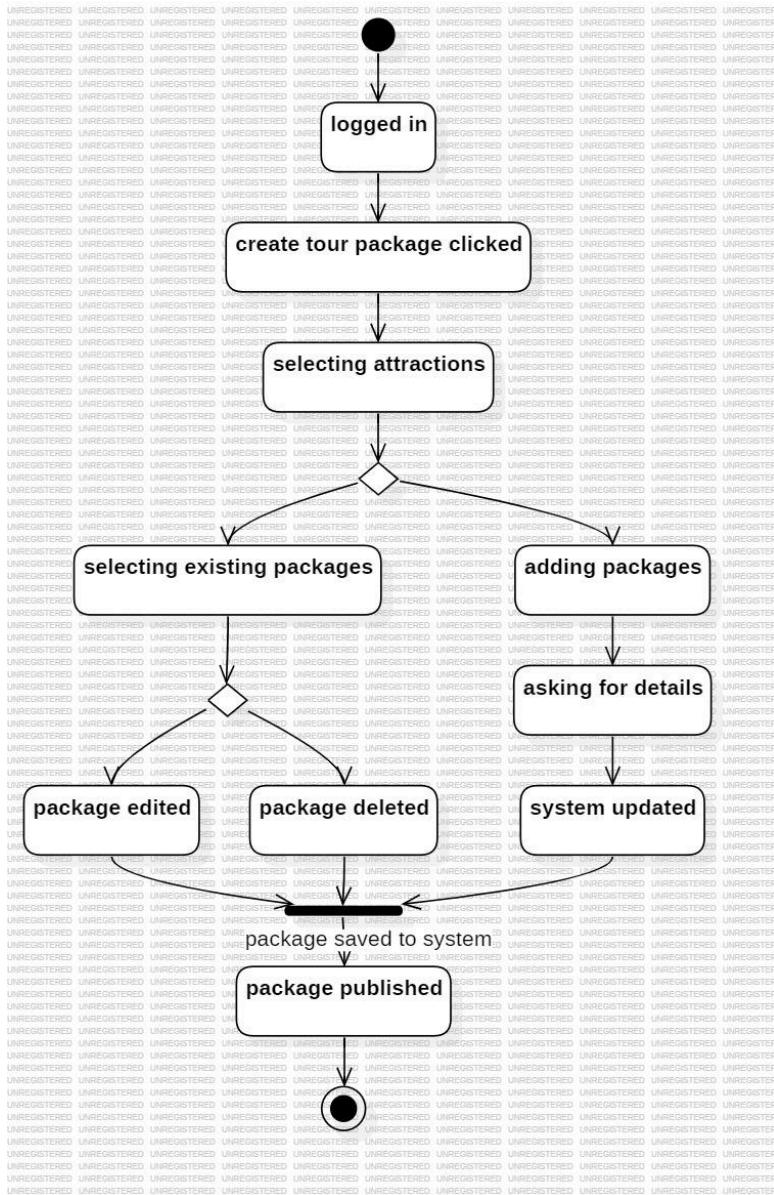


## **Travel Agent Activities**

### SC-27: Add New Option

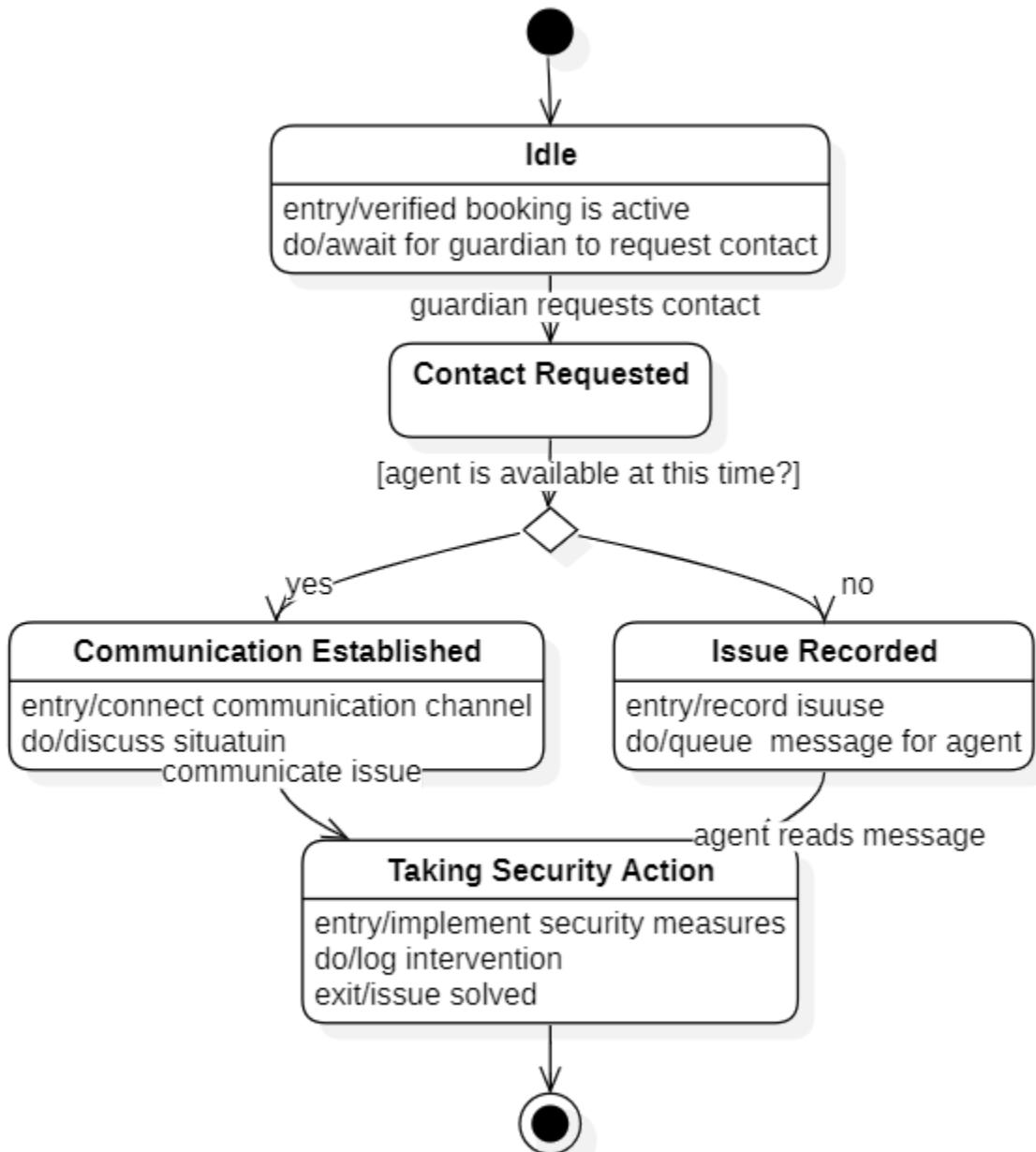


SC-28: Create Tour Packages



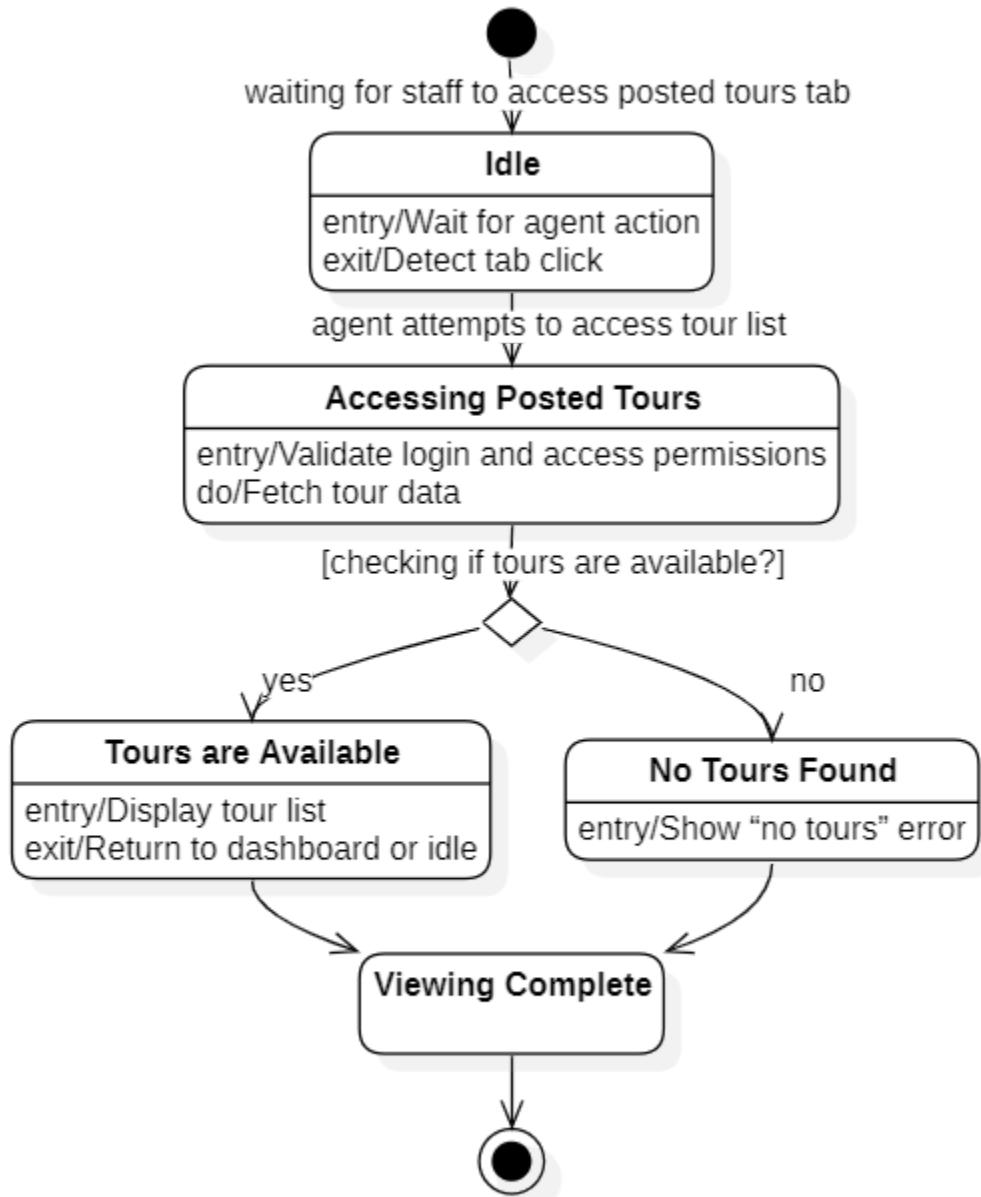
## **Security Agent Activities**

SC-29: Guardian Contact

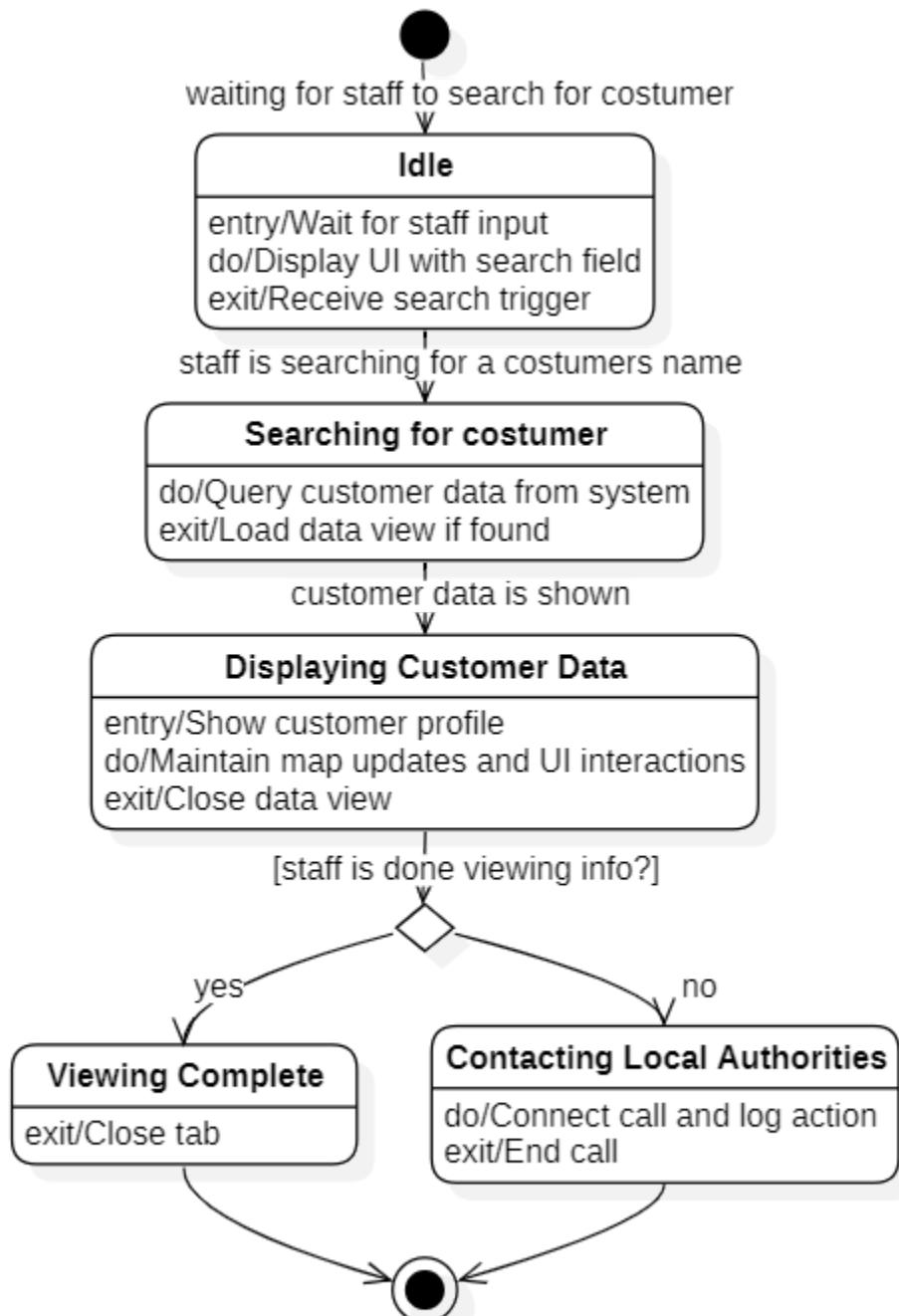


## **All Staff Members**

SC-30: View Posted Tour Packages



SC-31: View Customer Details

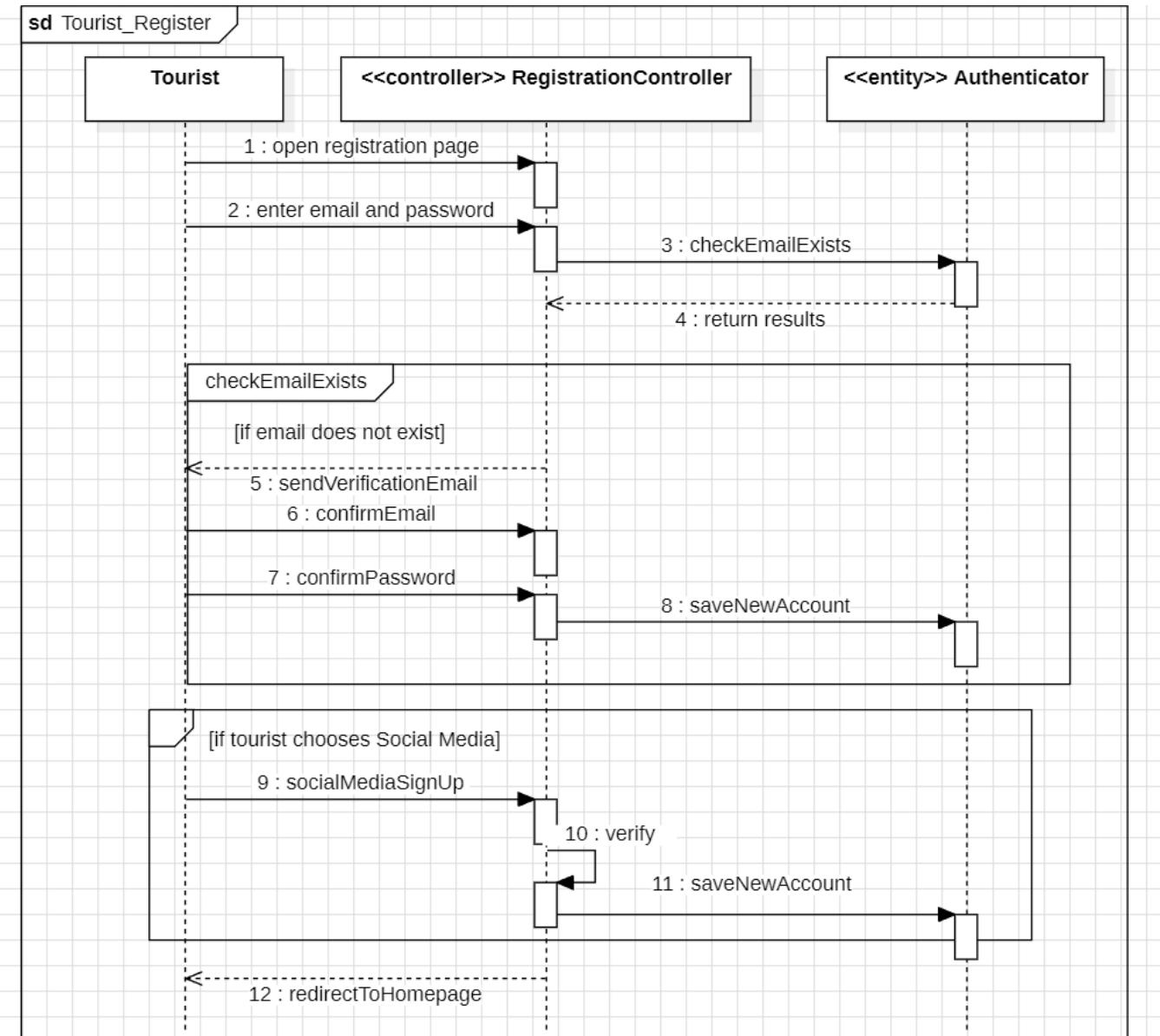


*Travel Agency System Requirements Specification*

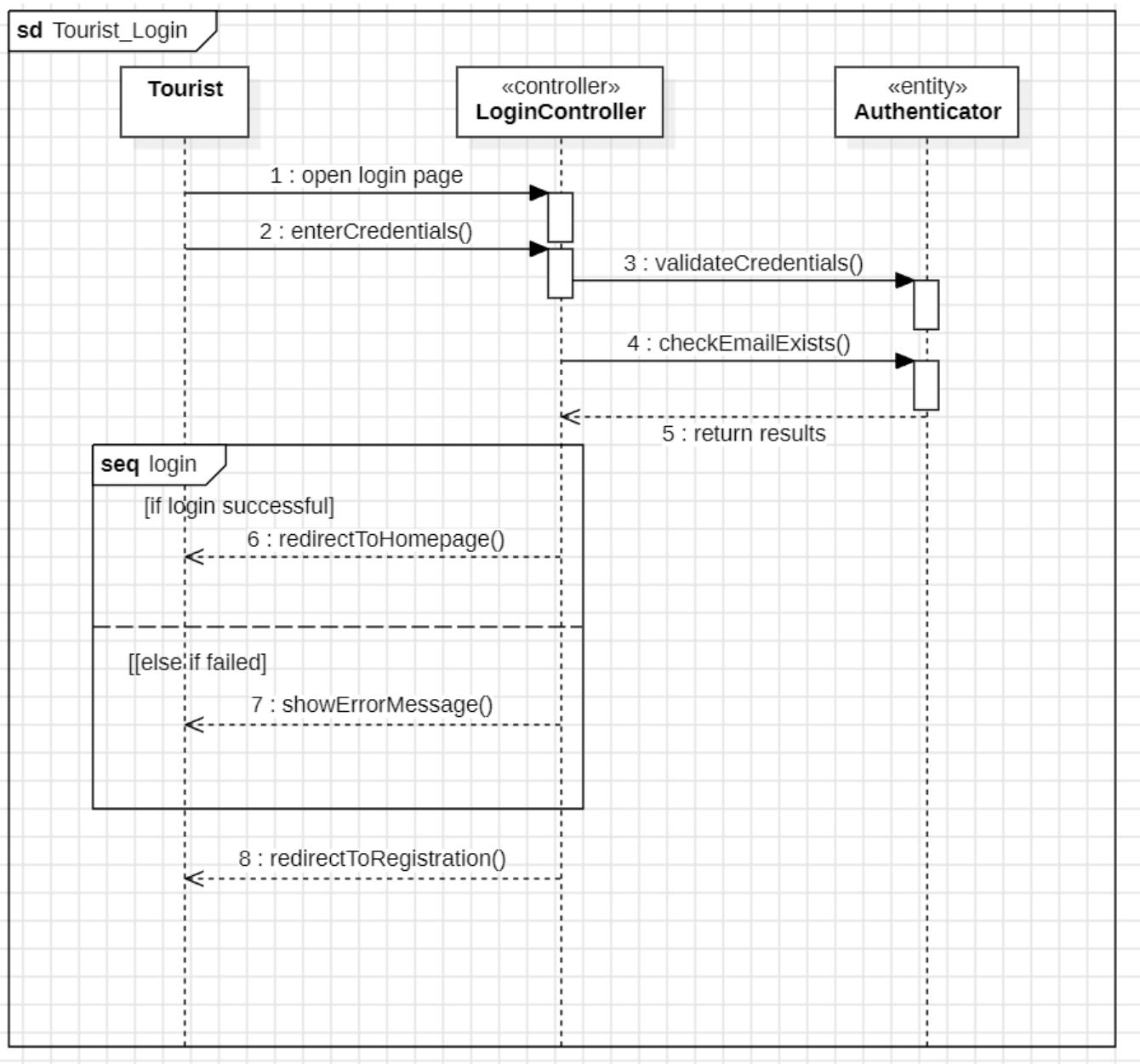
## Sequence Diagrams

### Registration and Login

SD-1: *Tourist\_Register*

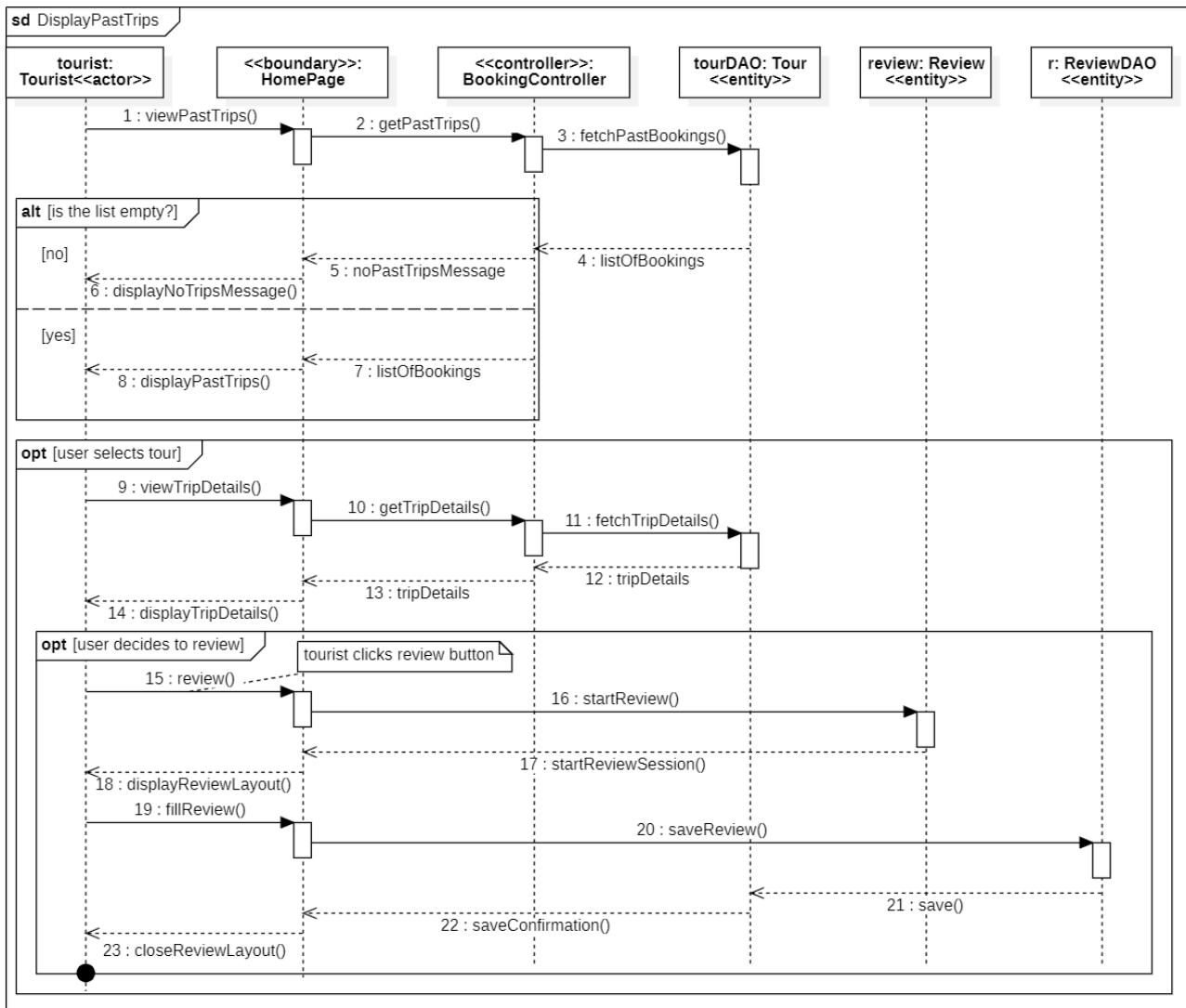


SD-2: Tourist\_login

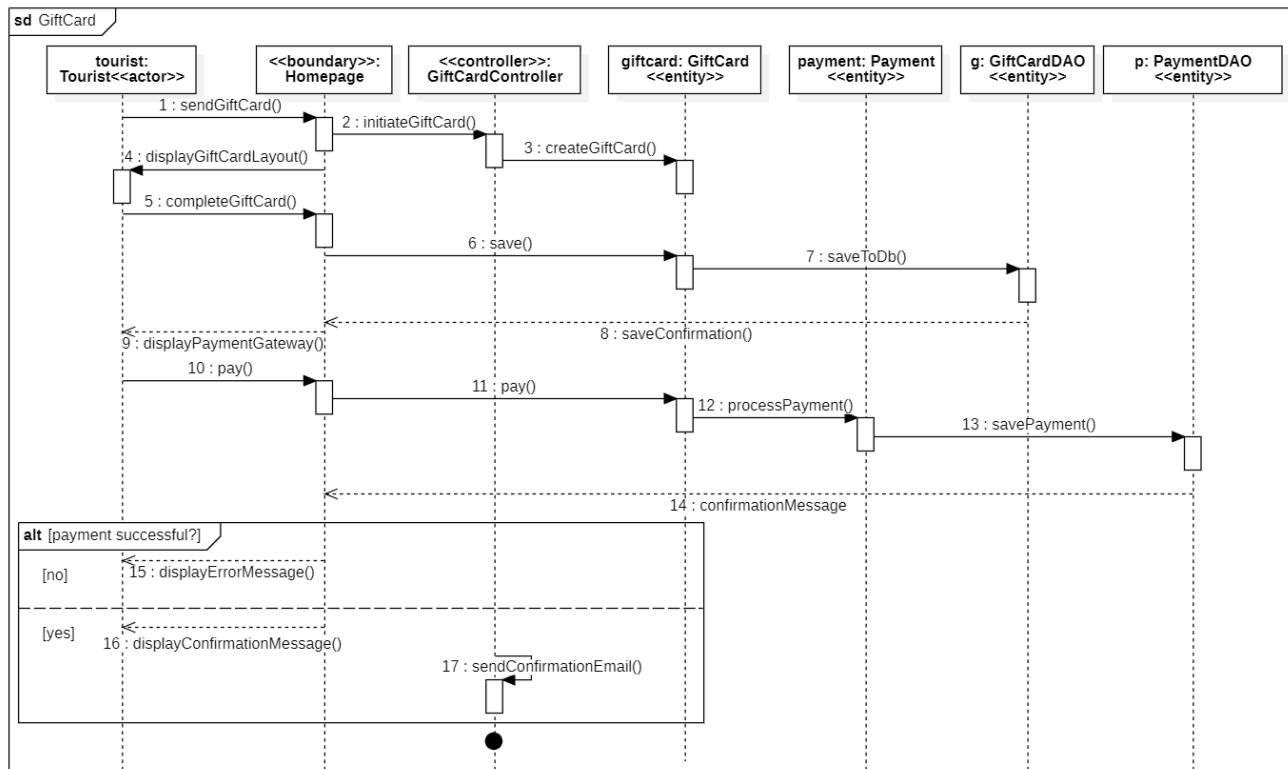


## Homepage

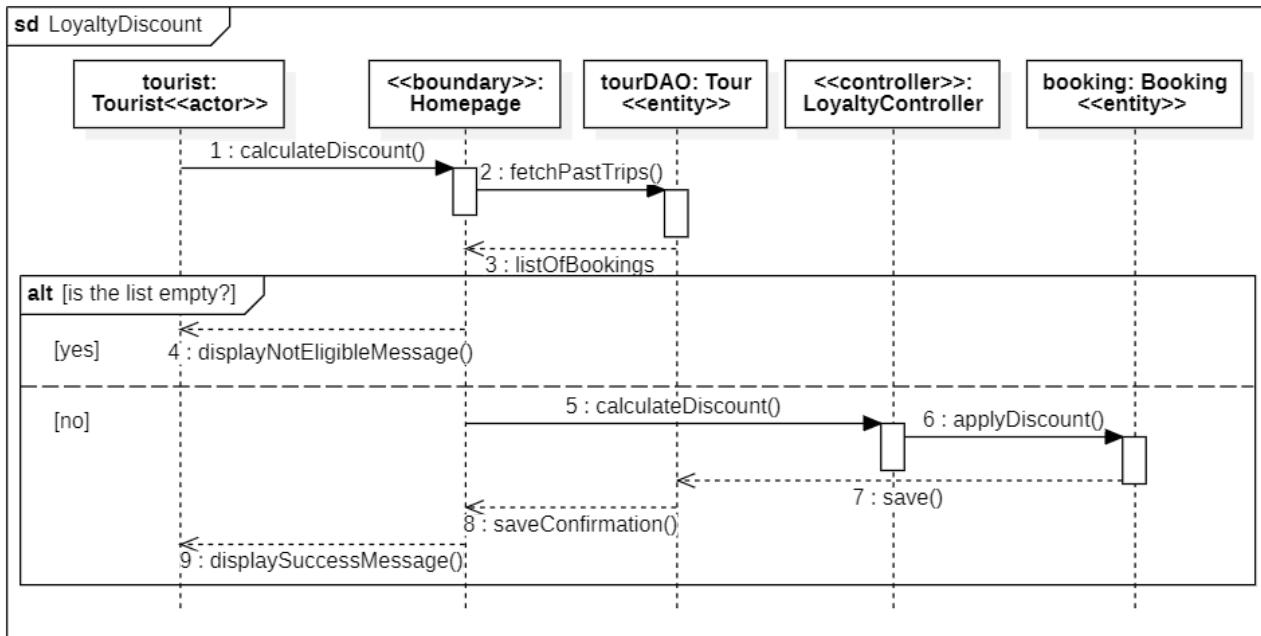
### SD-3: Display Past Trips



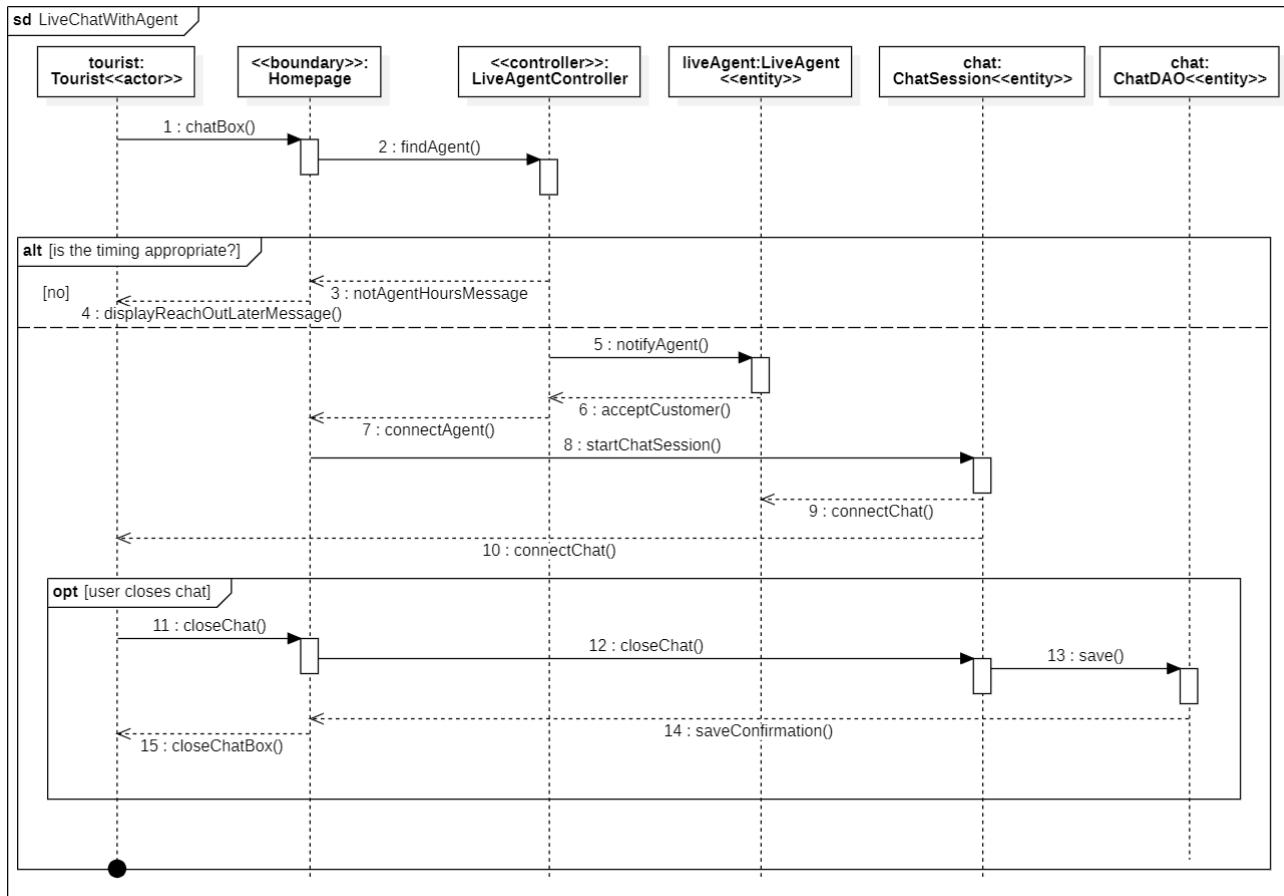
#### SD-4: Gift Card



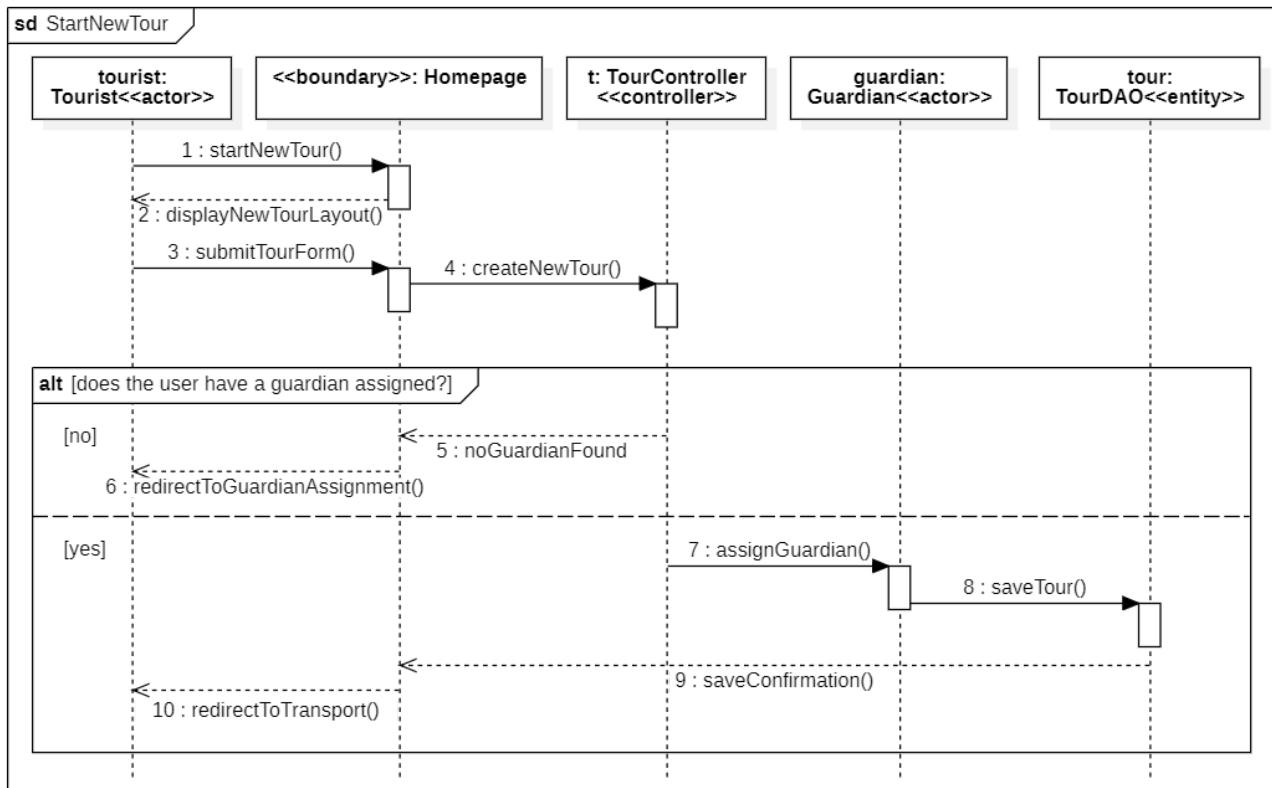
### SD-5: Apply Loyalty Discount



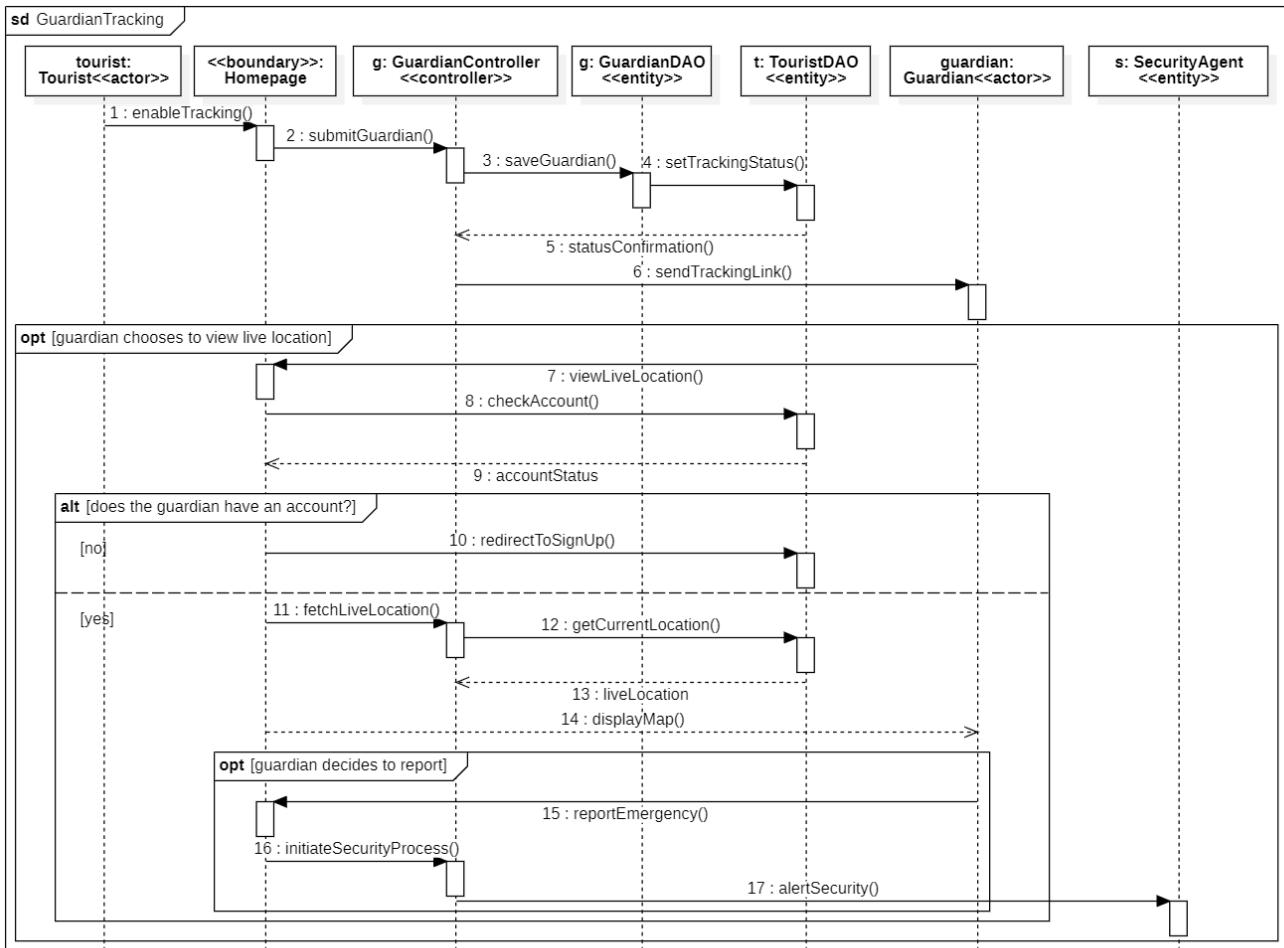
## SD-6: Live Chat with Agent



SD-7: Start New Tour

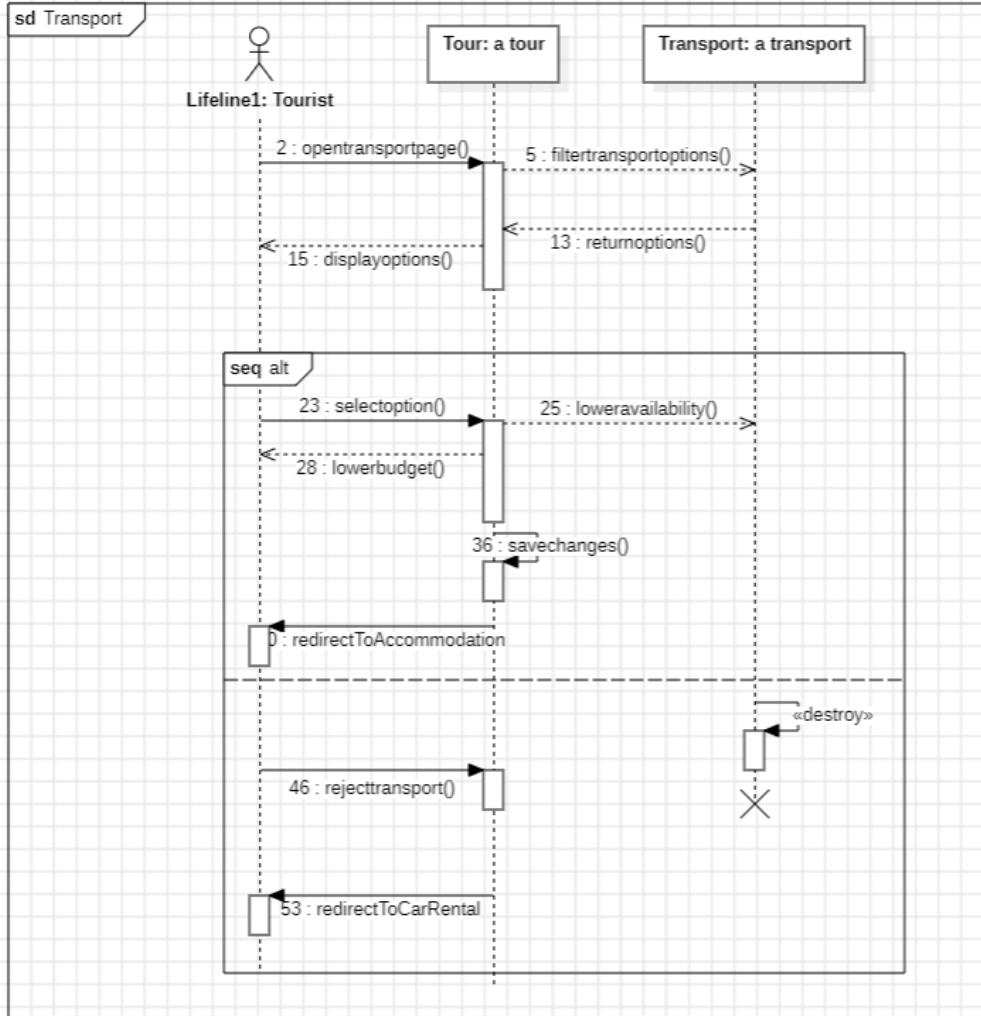


## SD-8: Guardian Tracking and Security Assistance



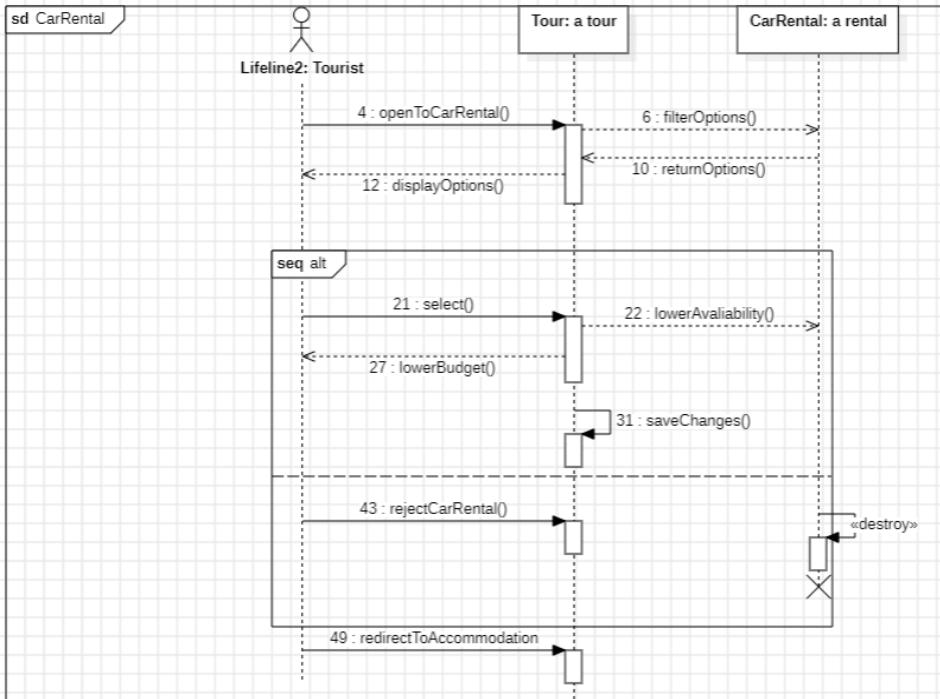
## **Prepayment Tour Activities**

SD-9: Public Transportation



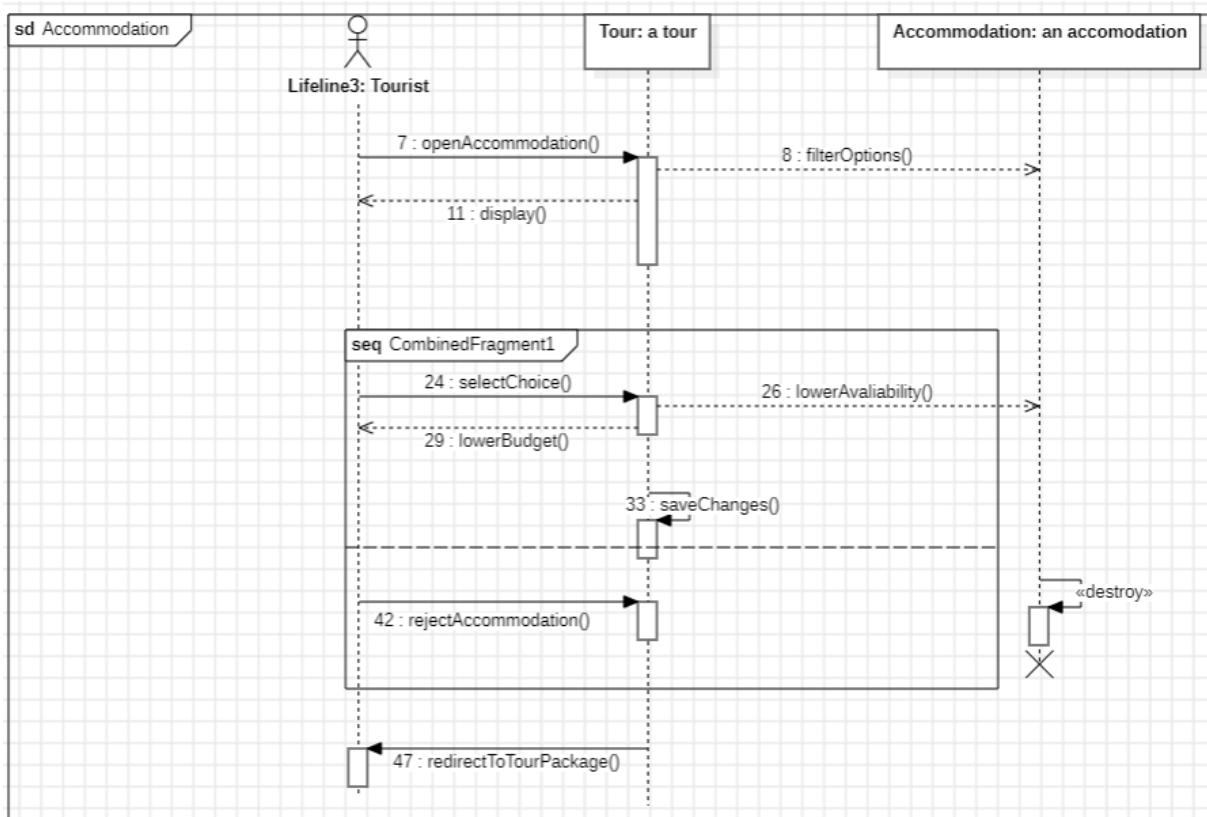
*Travel Agency System Requirements Specification*

SD-10: Car\_Rental

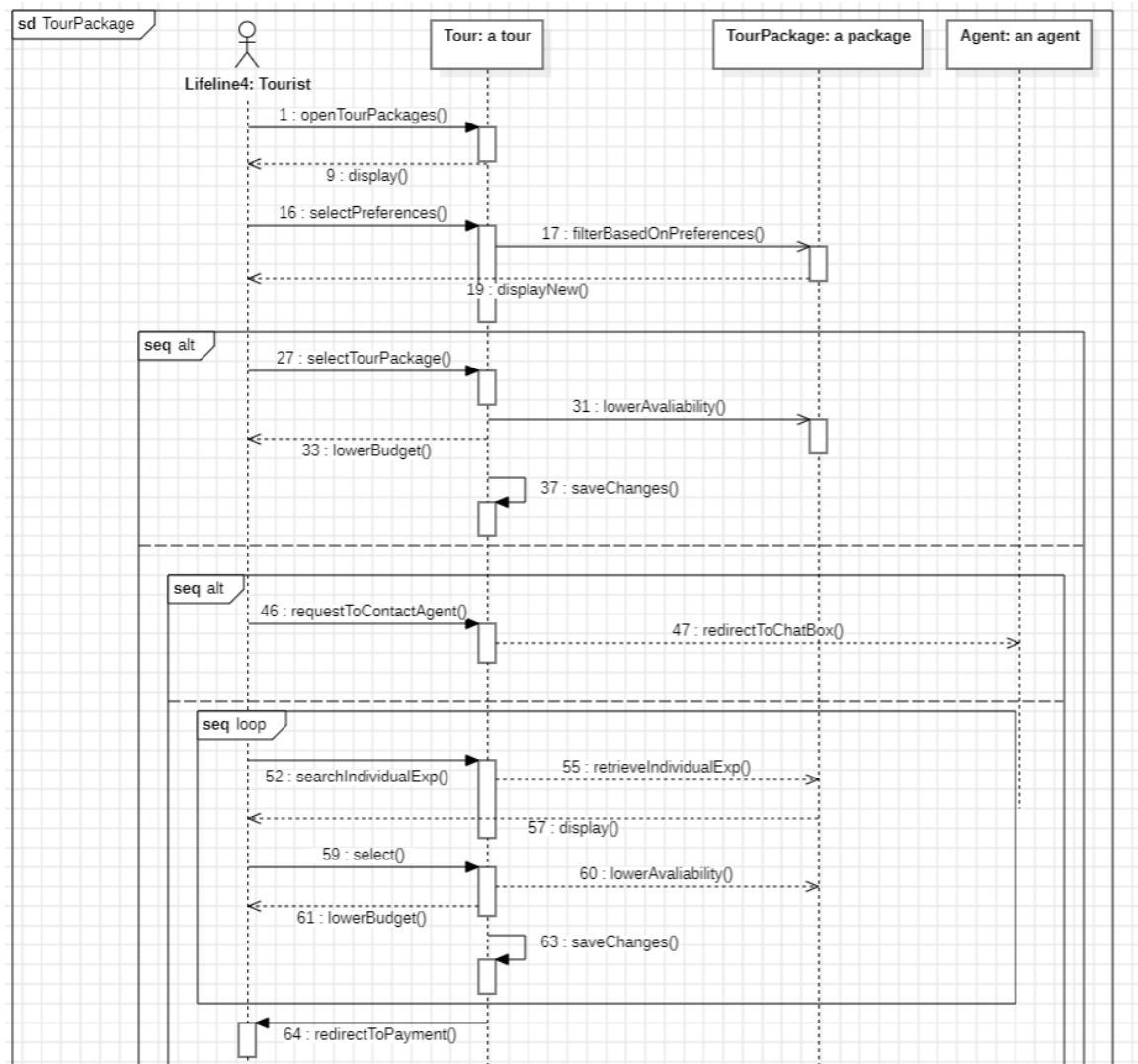


SD-11: Reserve\_Accommodation

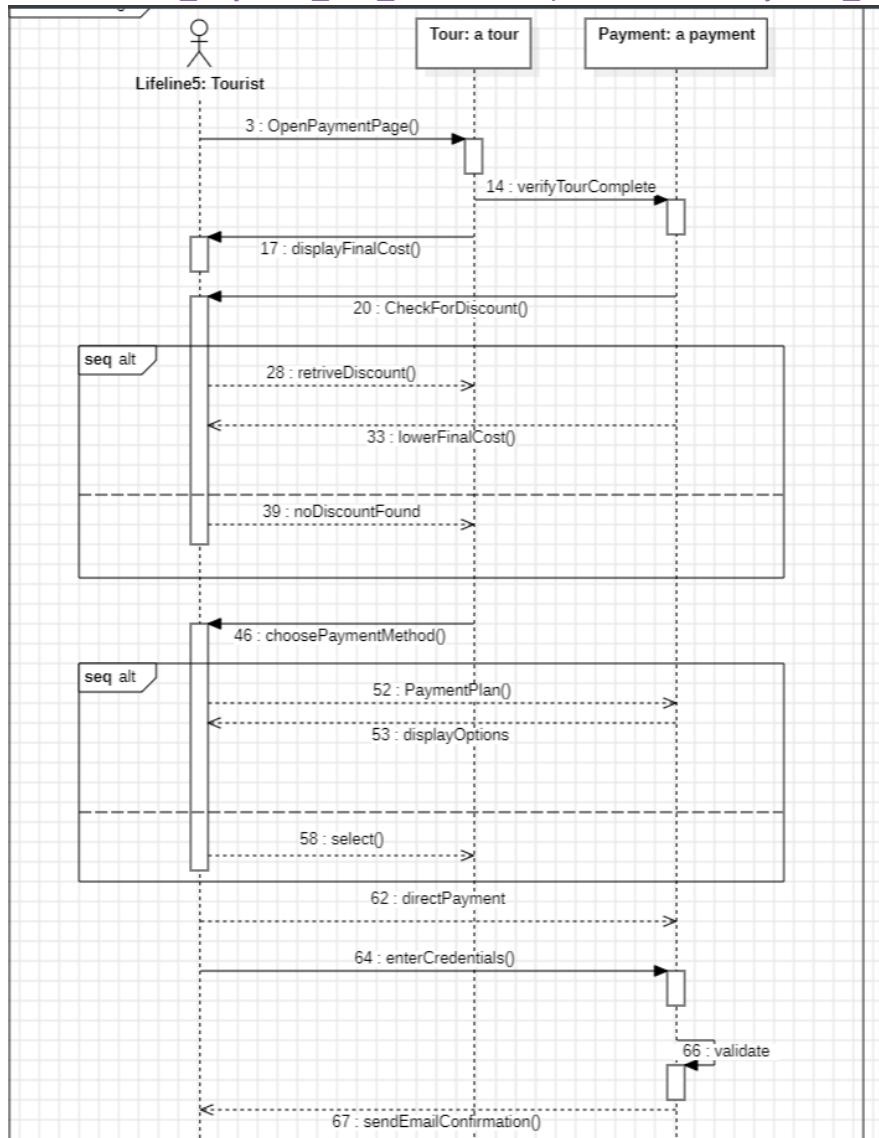
## Travel Agency System Requirements Specification



SD-12: Book\_Tour\_Package

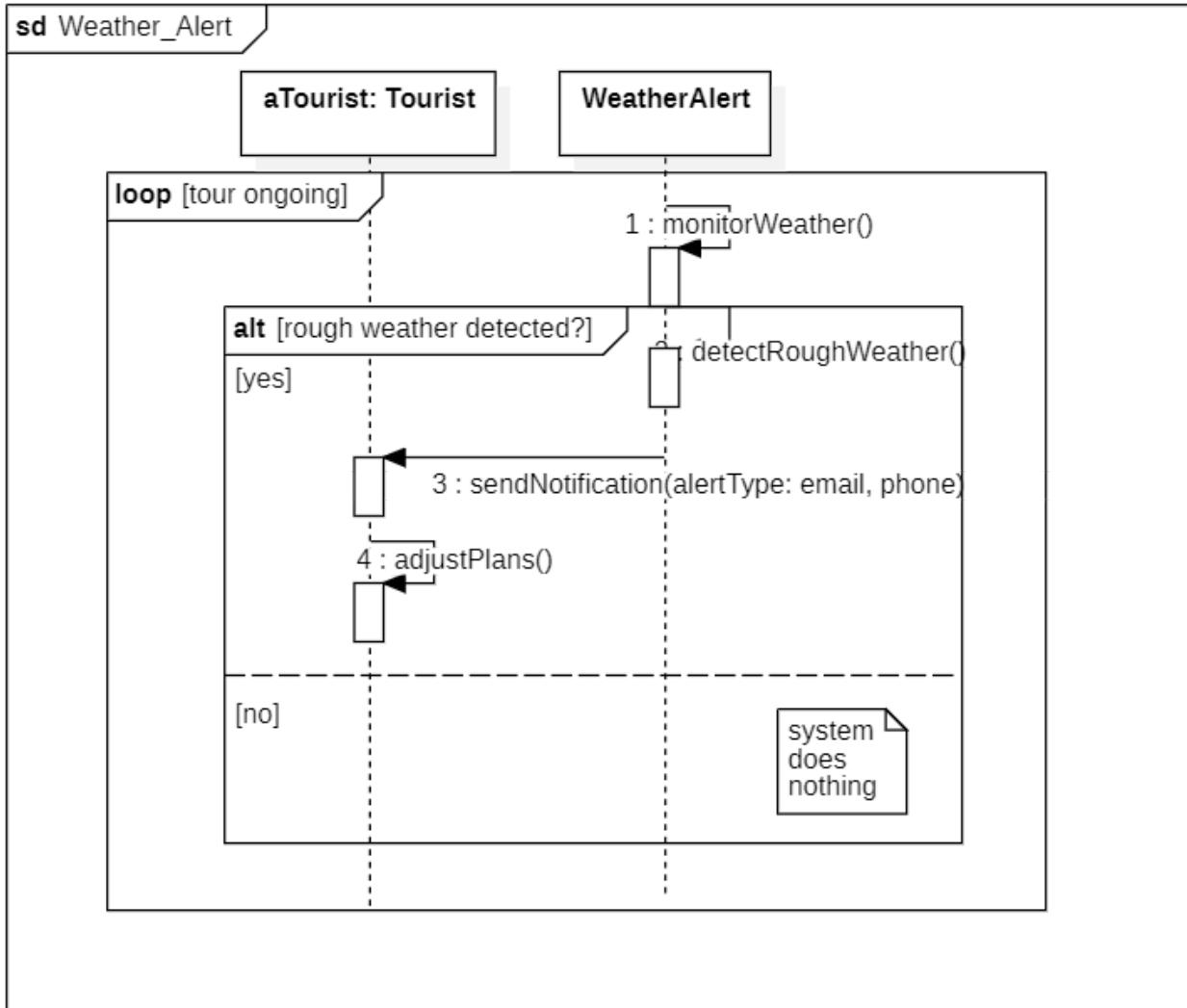


SD-13: Online\_Payment\_and\_Email Receipt && AC-14: Payment\_Plans



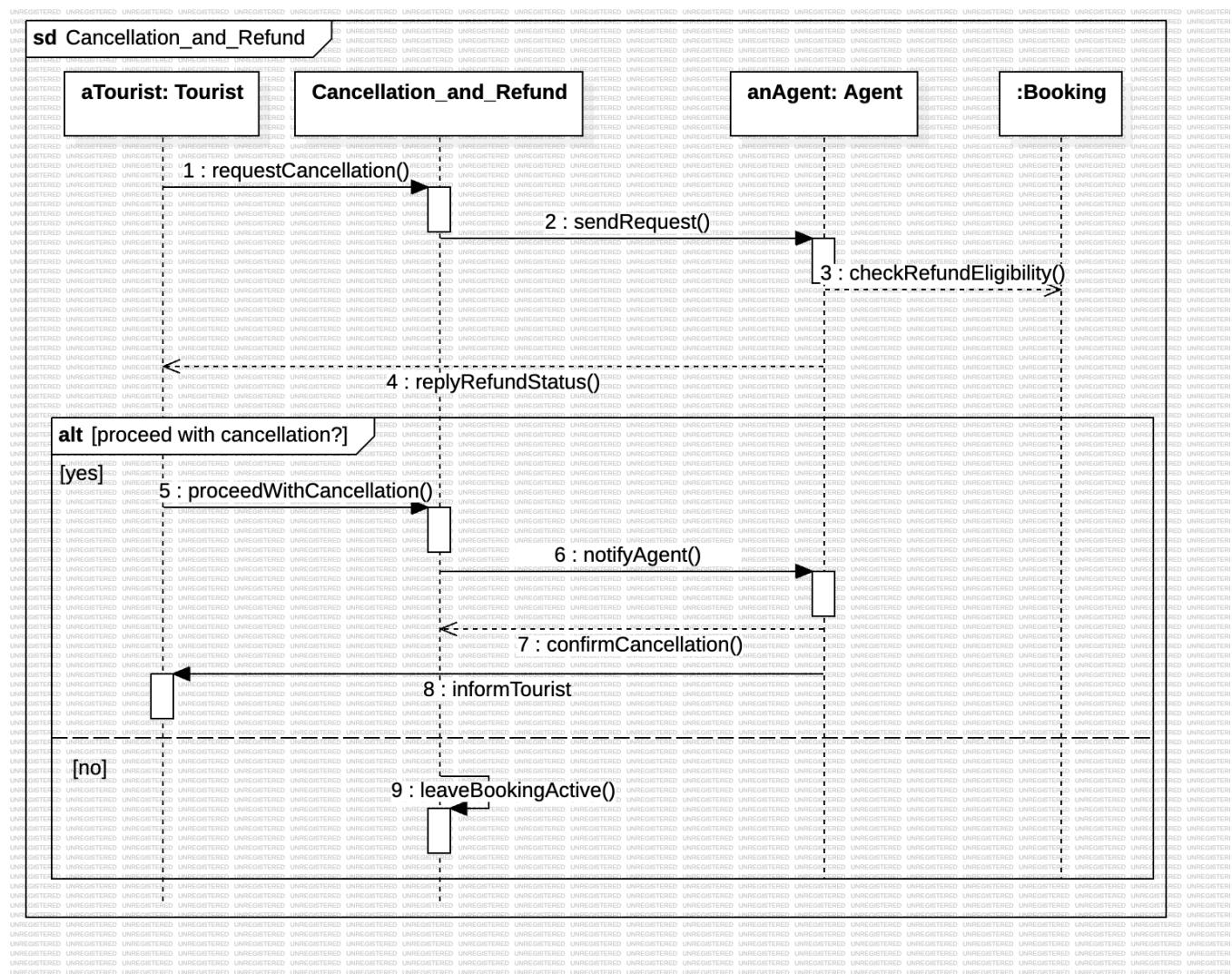
## **Postpayment Tour Activities**

SD-15 Weather\_Alert

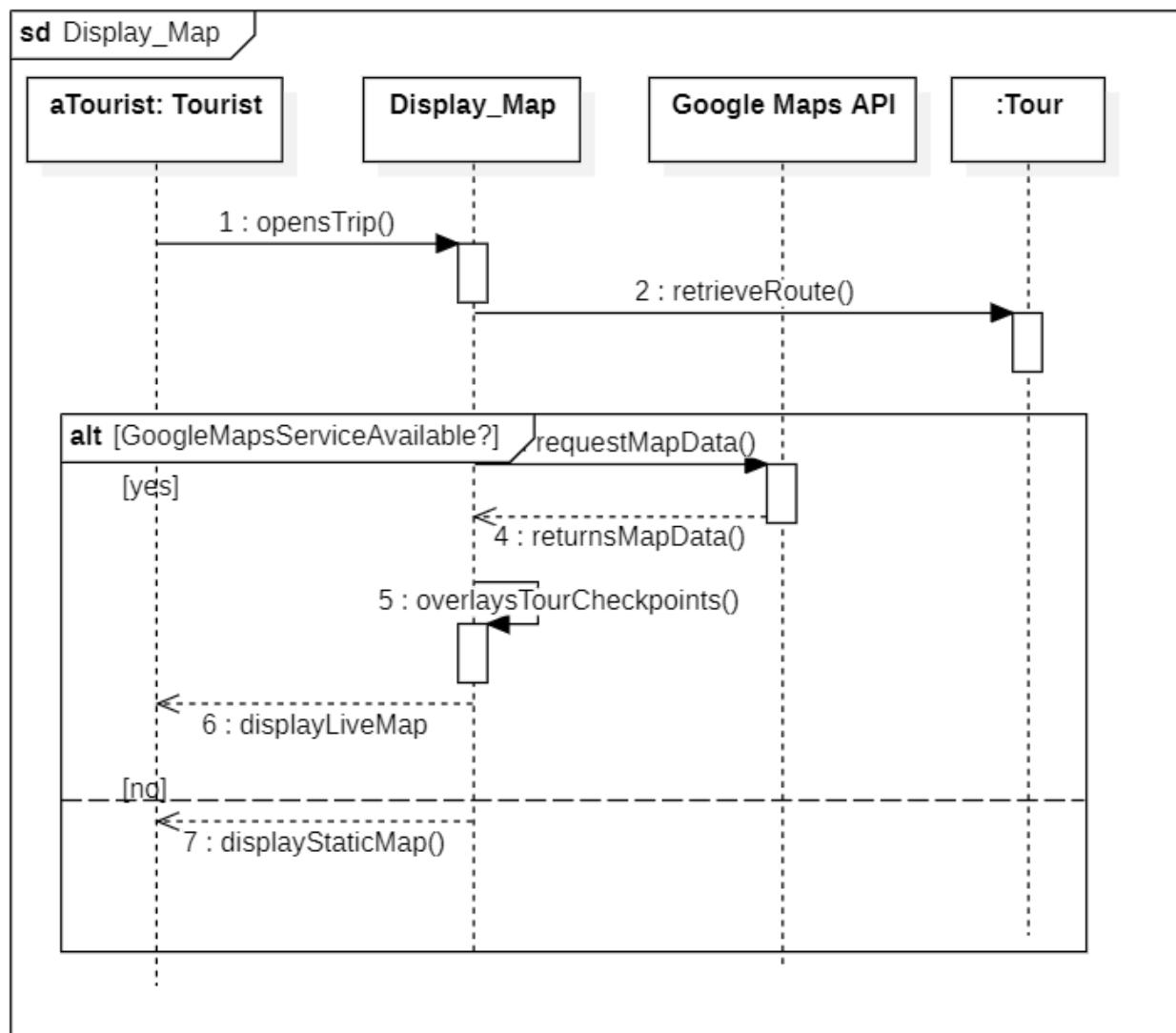


## Travel Agency System Requirements Specification

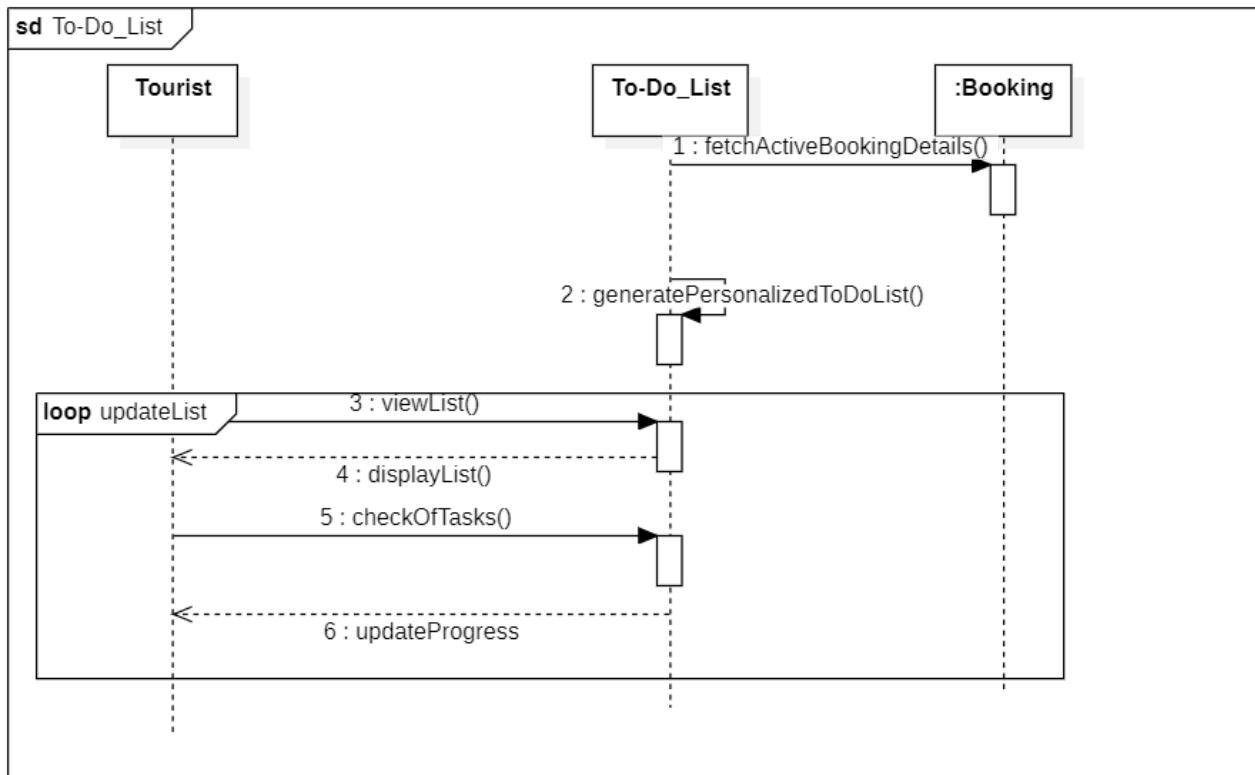
### SD-16: Cancel\_And\_Refund\_Customer\_Trip



SD-17: Map\_Display



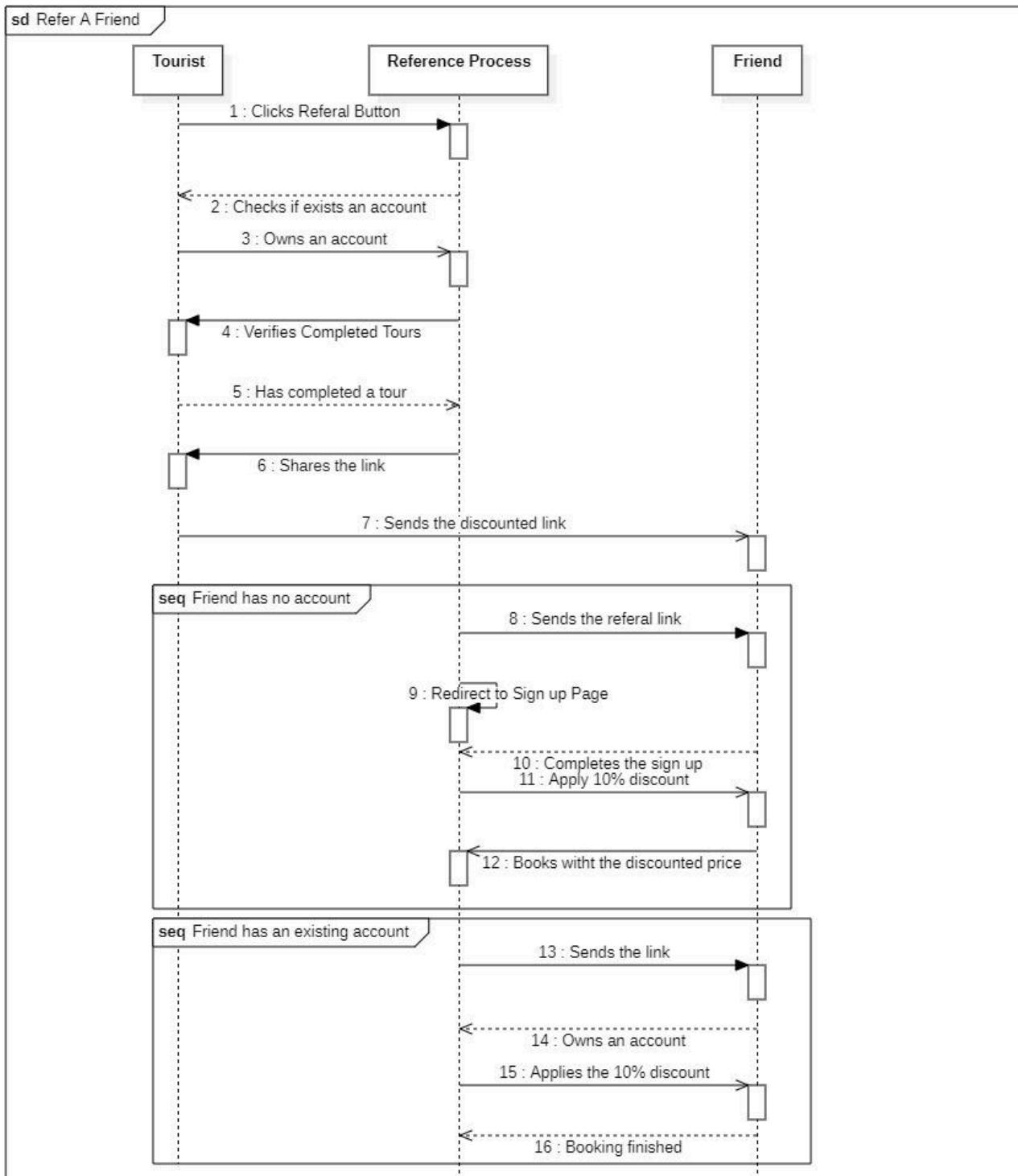
**SD-18: To-Do\_List**



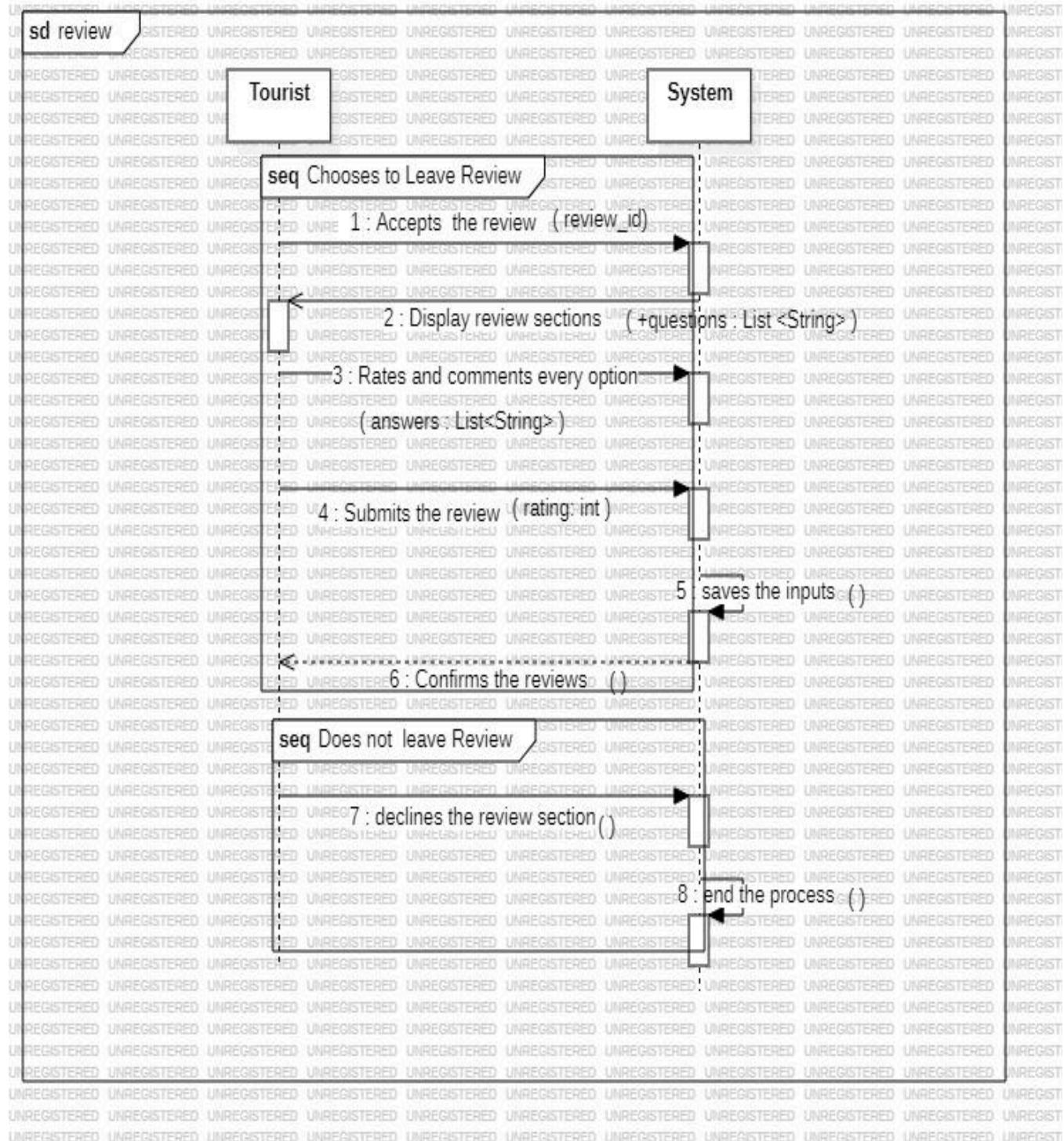
**Post Tour Activities**

**SD-19: Refer a Friend**

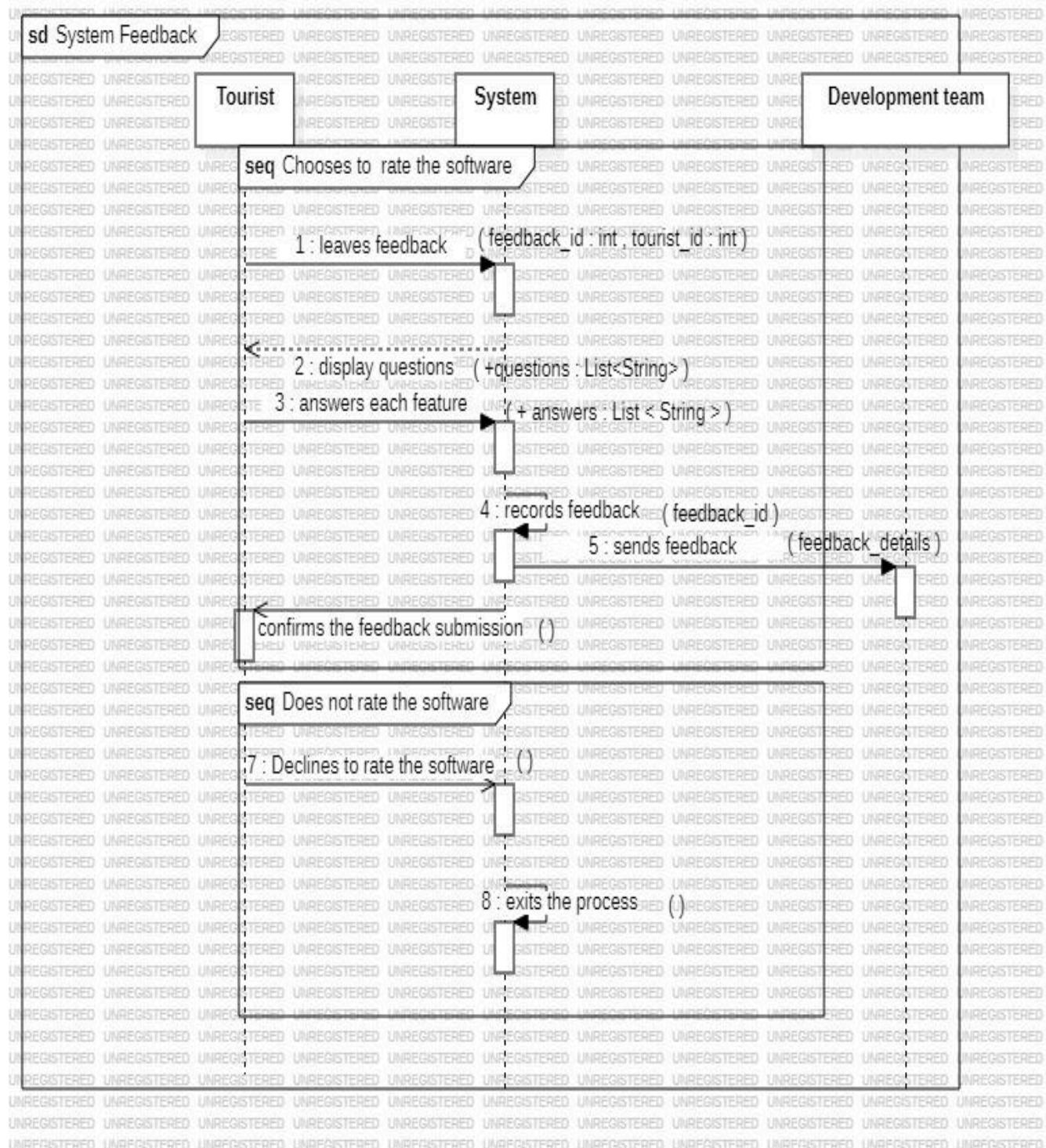
## Travel Agency System Requirements Specification



## SD-20: Review

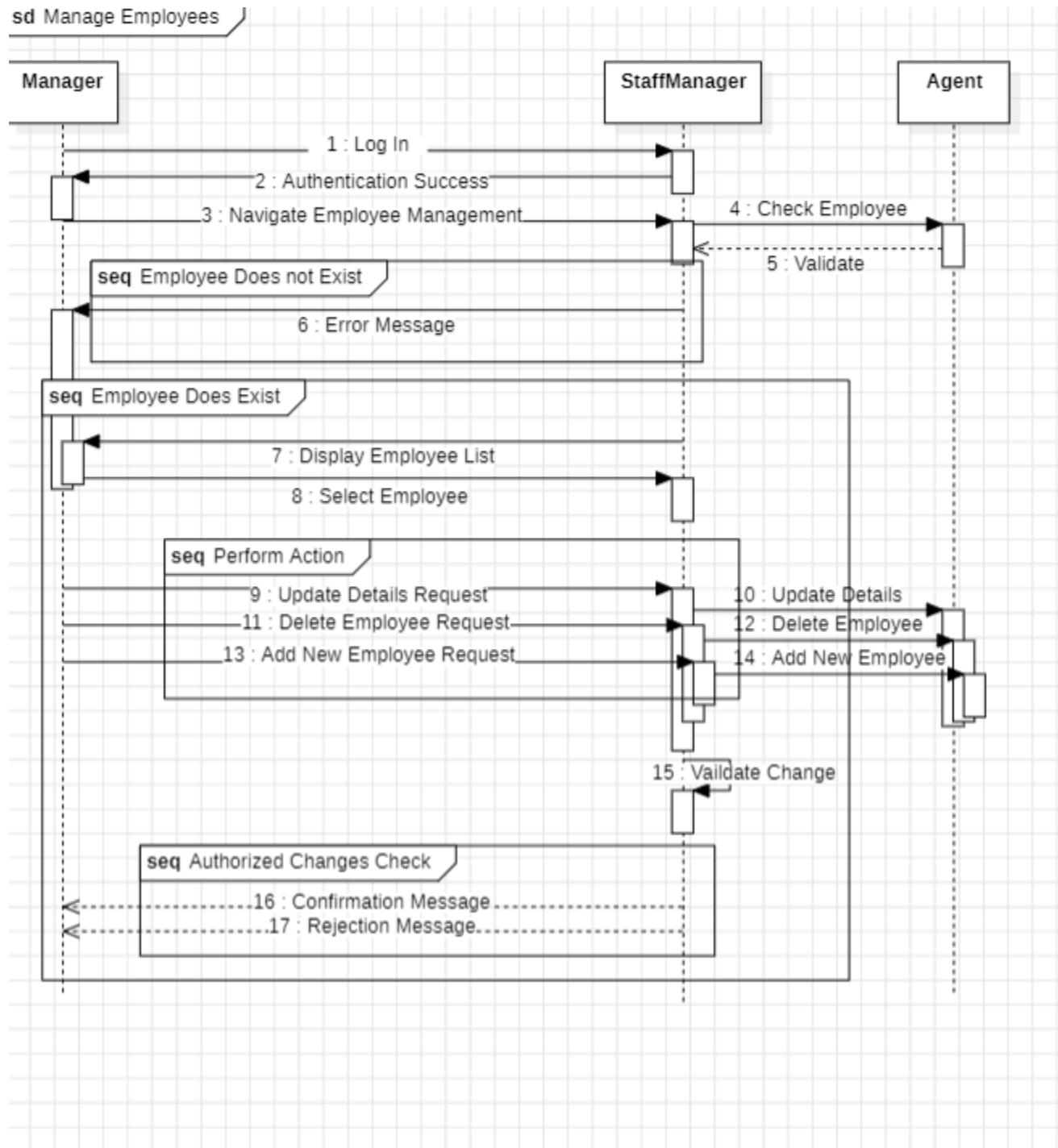


### SD-21: Software\_Feedback

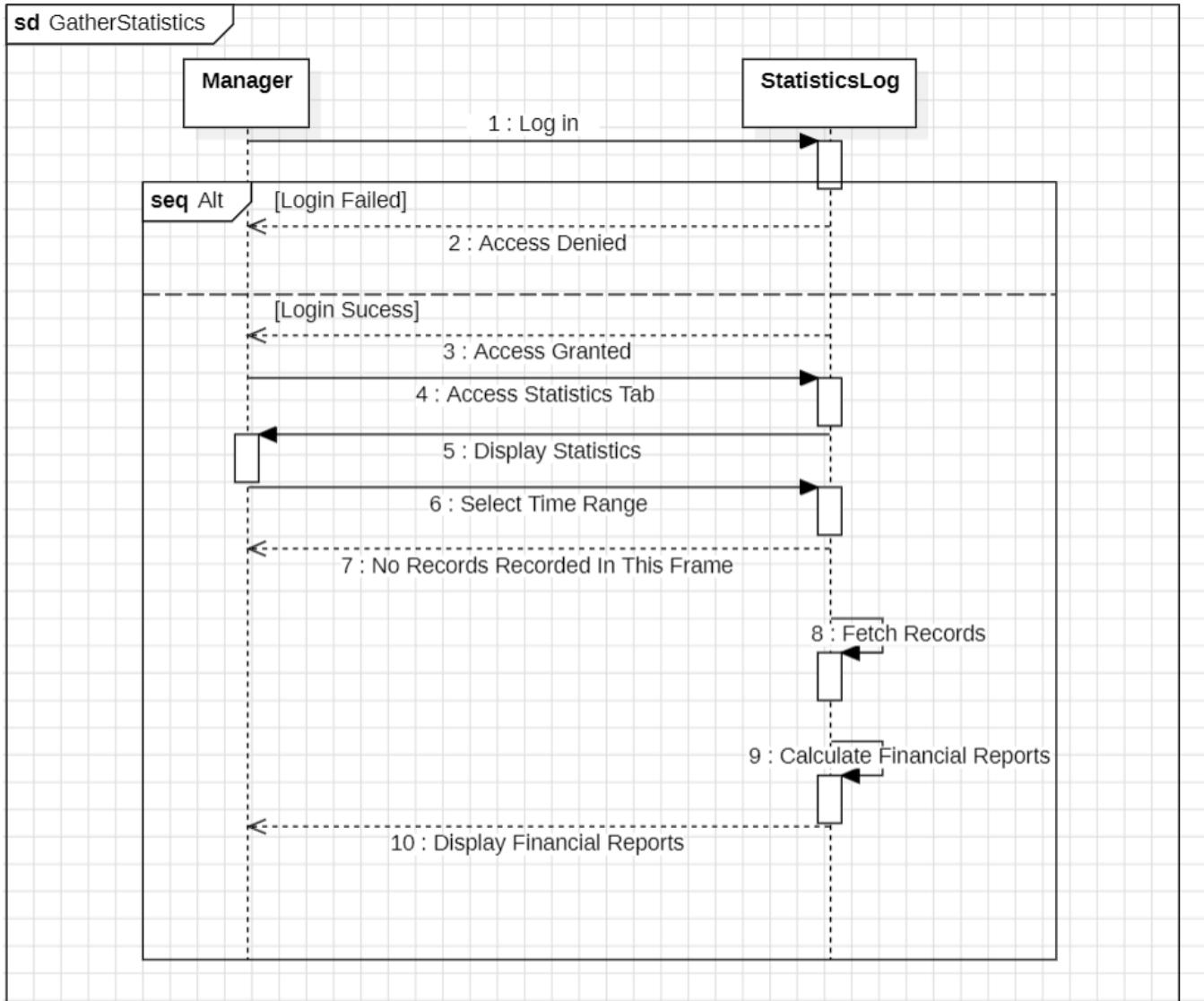


## **Manager Activities**

### SD- 22 Manage Employees



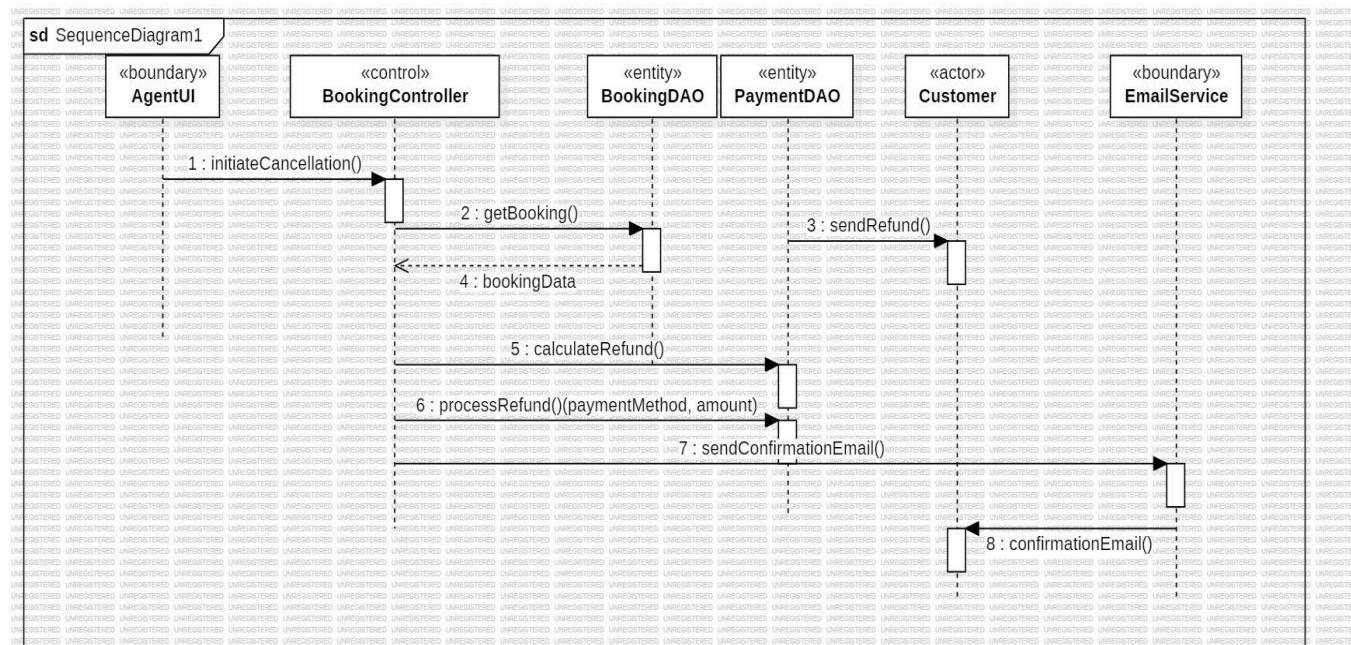
SD-23: Gather\_Statistics



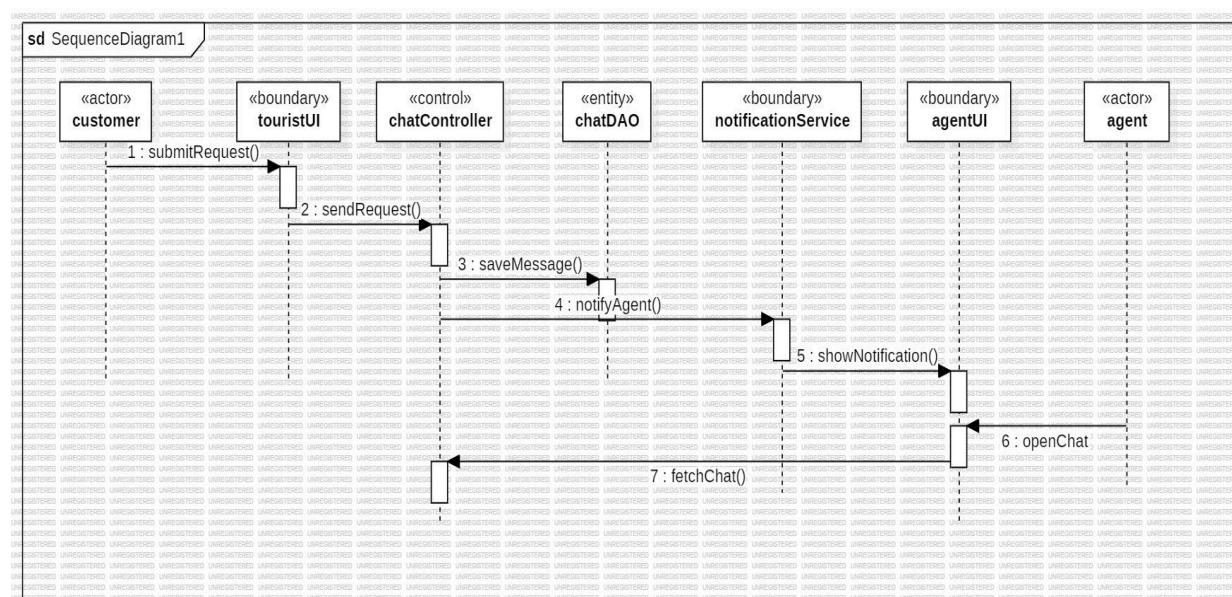
## Travel Agency System Requirements Specification

### Live Assistant Agent Activities

#### SD-24: Cancellation and Refund

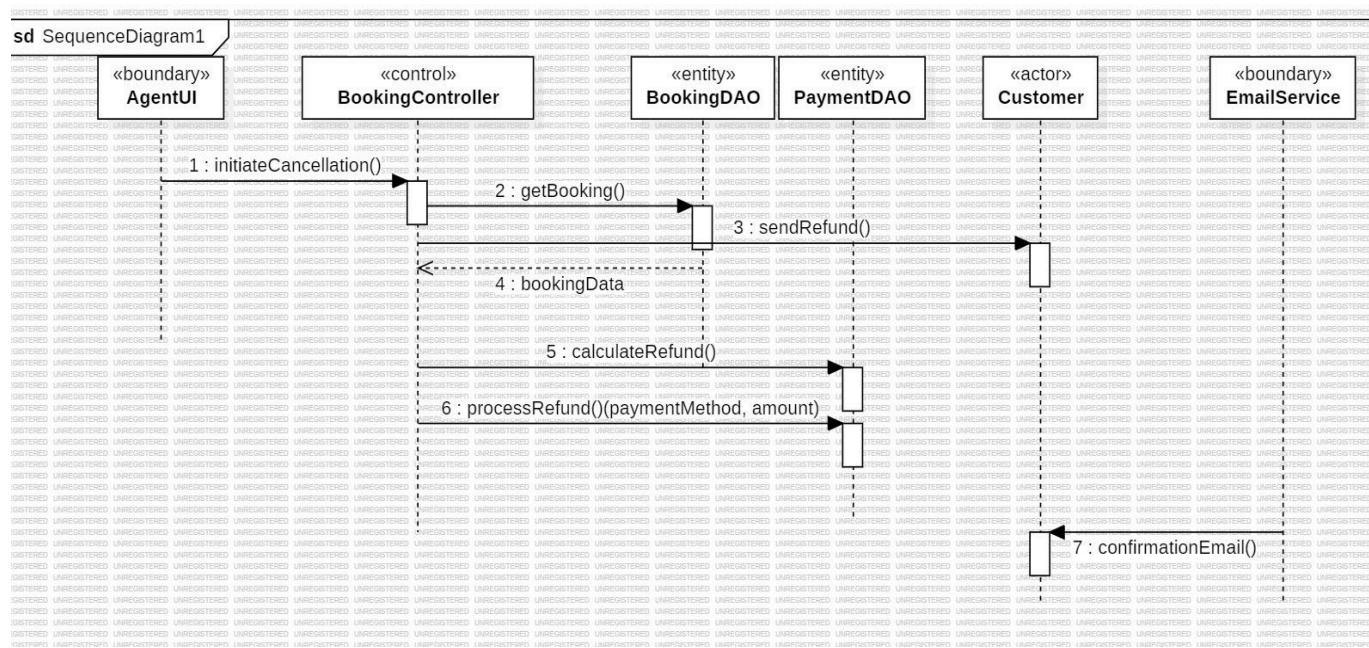


#### SD-25: Communicate with Tourist



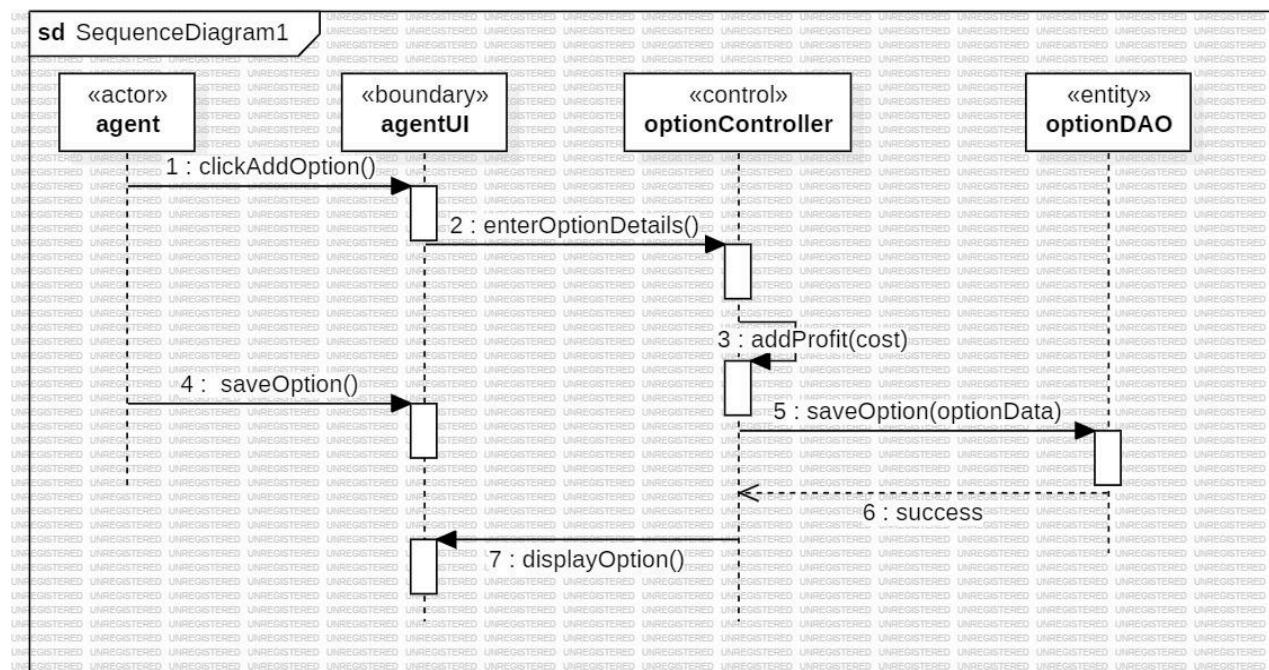
## Travel Agency System Requirements Specification

### SD-26: Modify Customer Trip

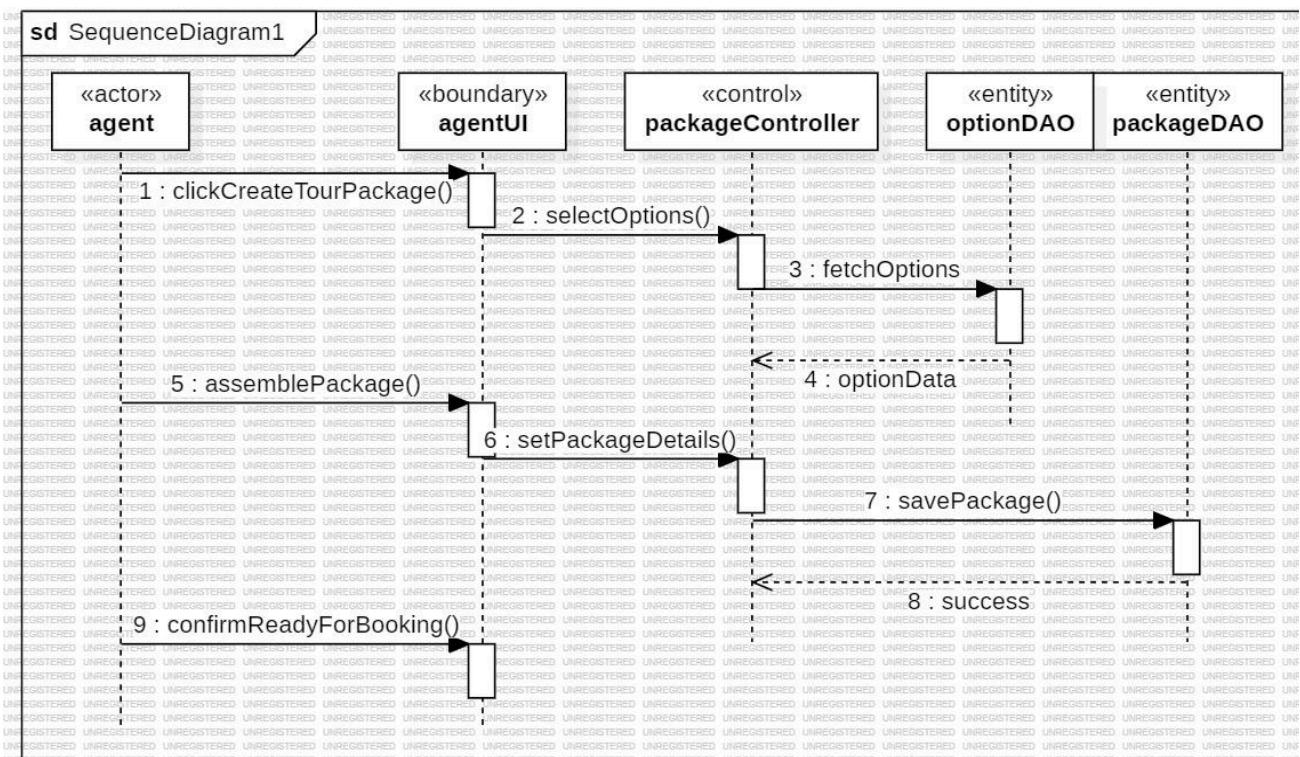


### Travel Agent Activities

#### SD-27: Add New Option

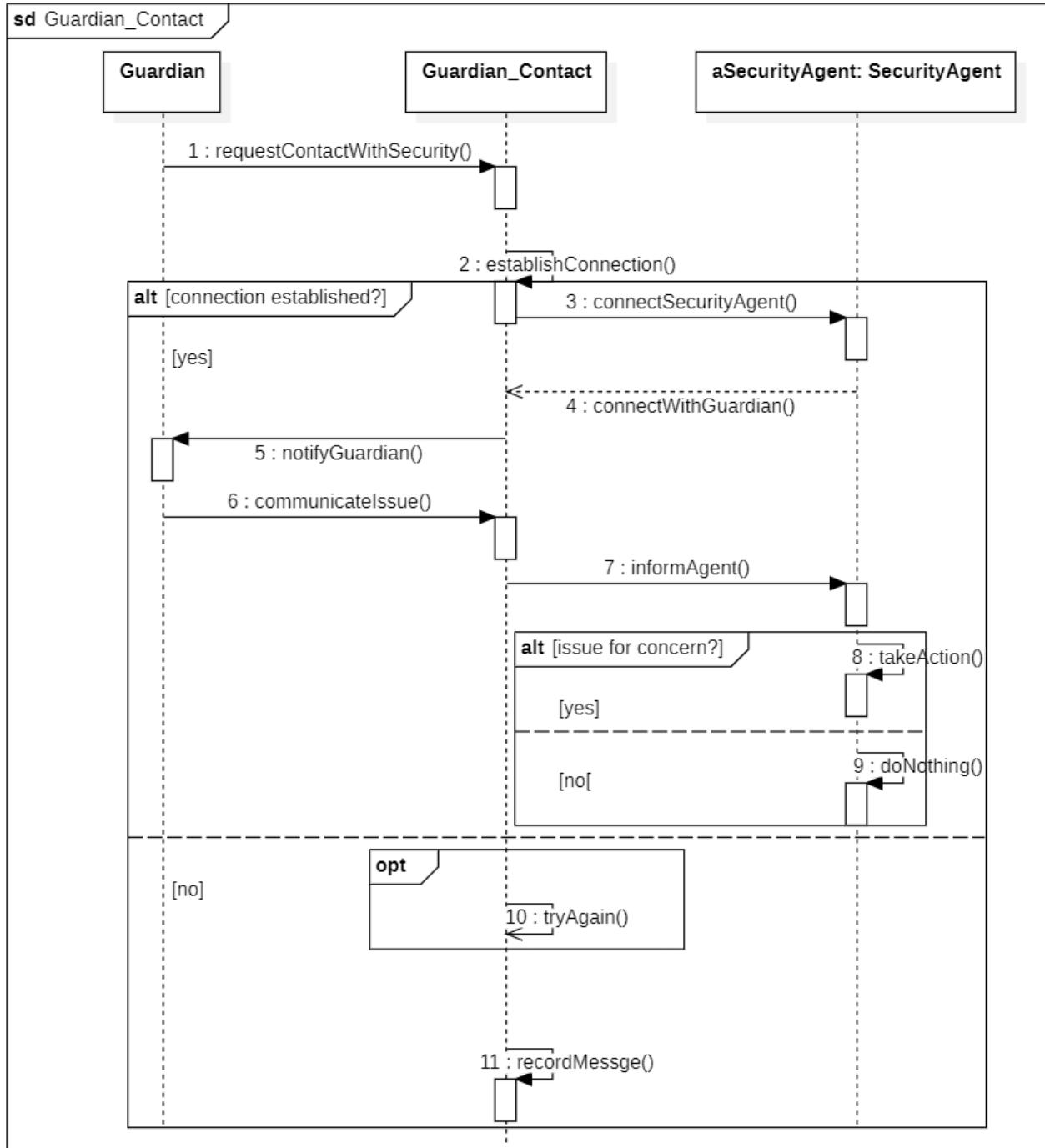


### SD-28: Create Tour Packages



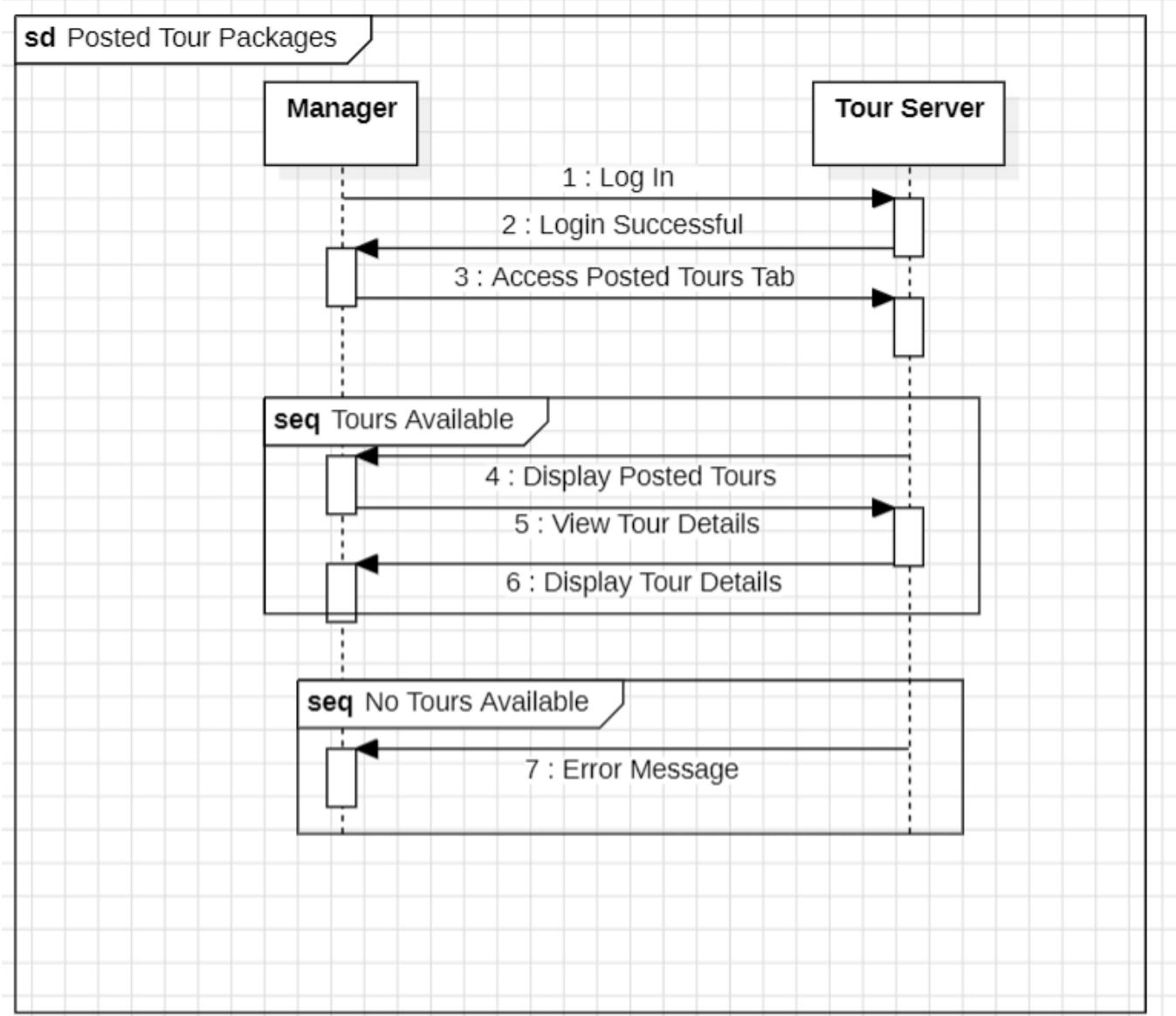
## **Security Agent Activities**

SD-29: Guardian\_Contact



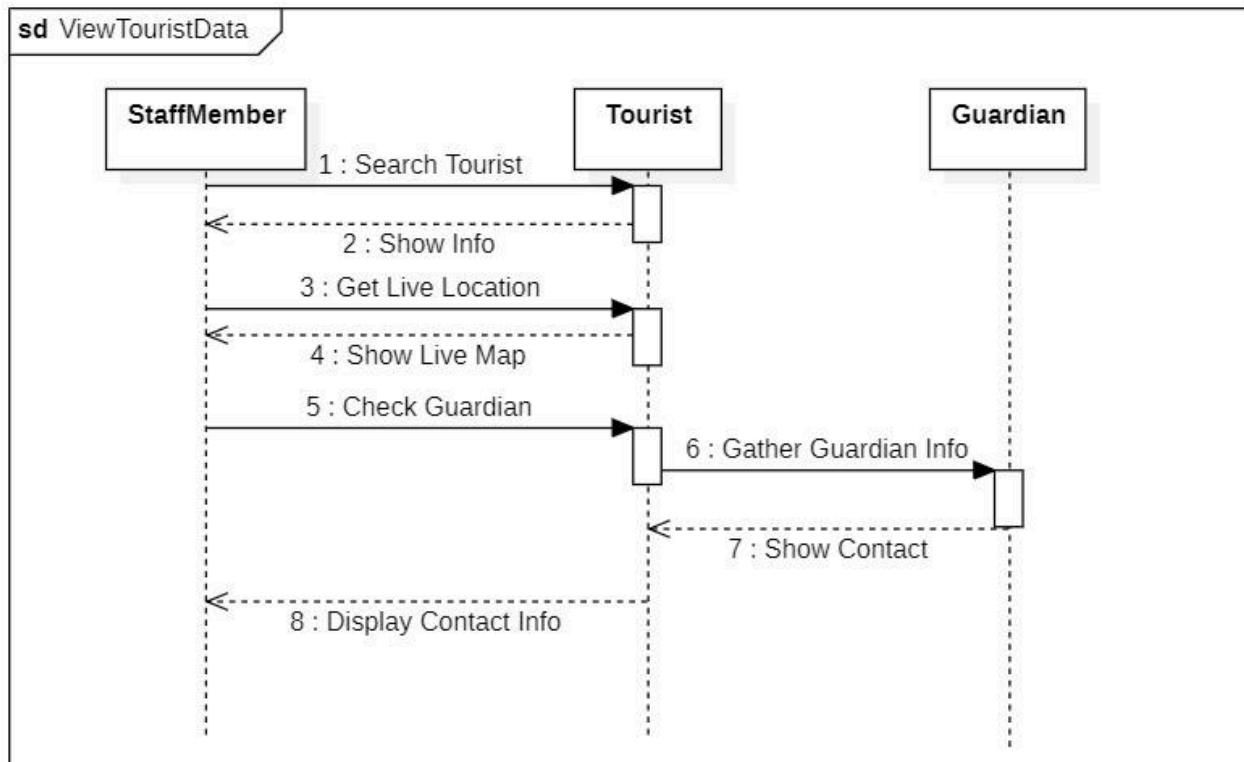
## All Staff Members

SD-30: Posted Tour Packages



UC- 31: View Tourist Data

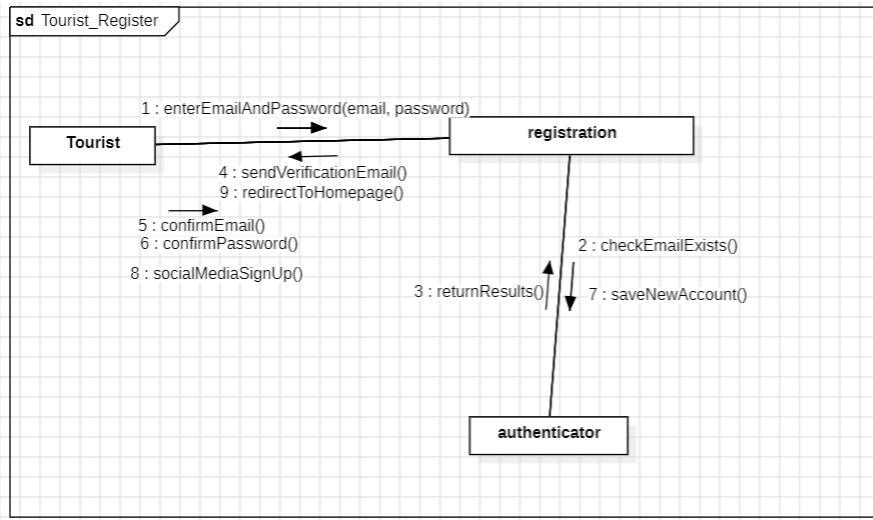
*Travel Agency System Requirements Specification*



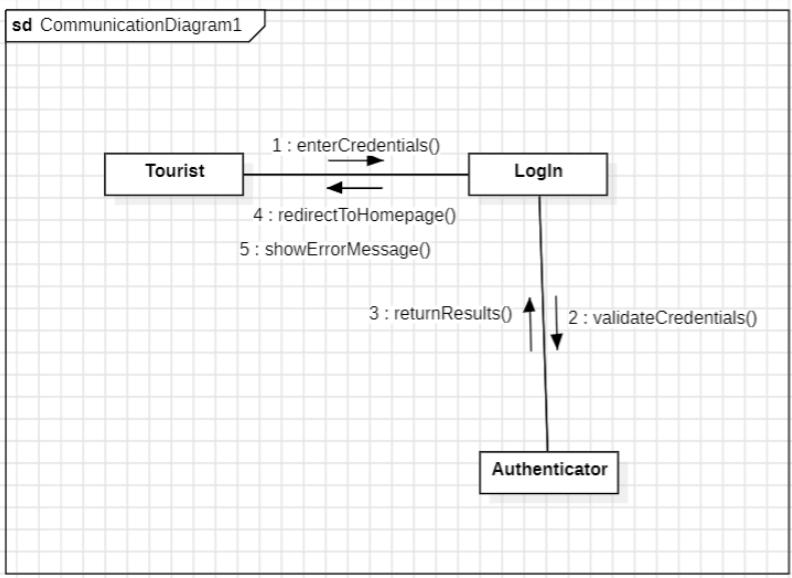
## Collaboration Diagrams

### Registration and Login

CD-1: Tourist\_Register

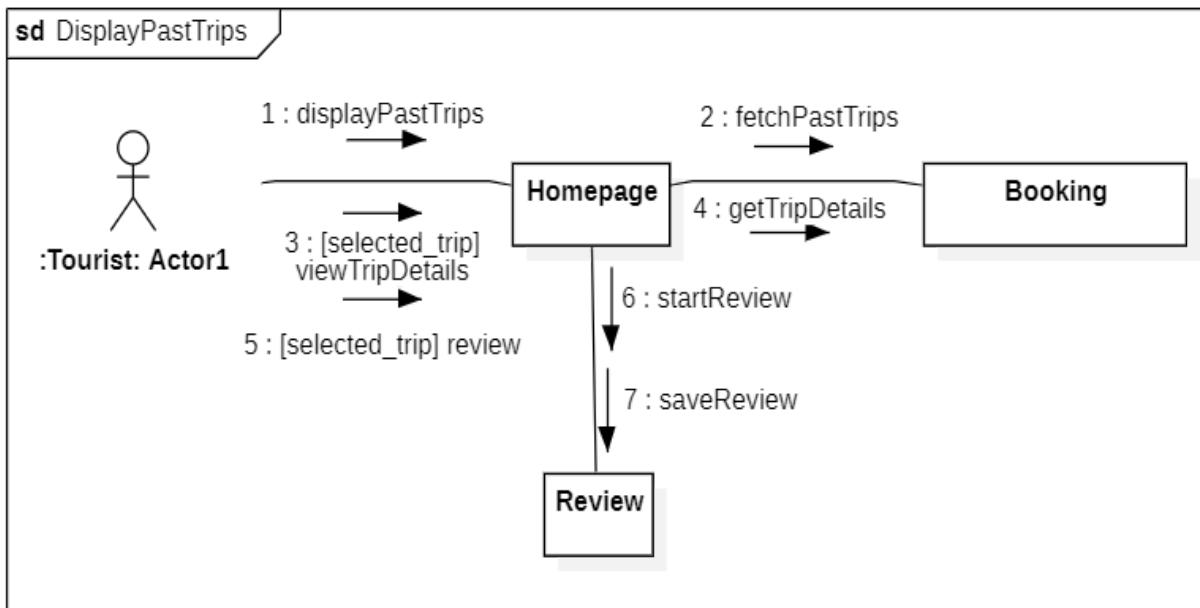


CD-2: Tourist\_Login

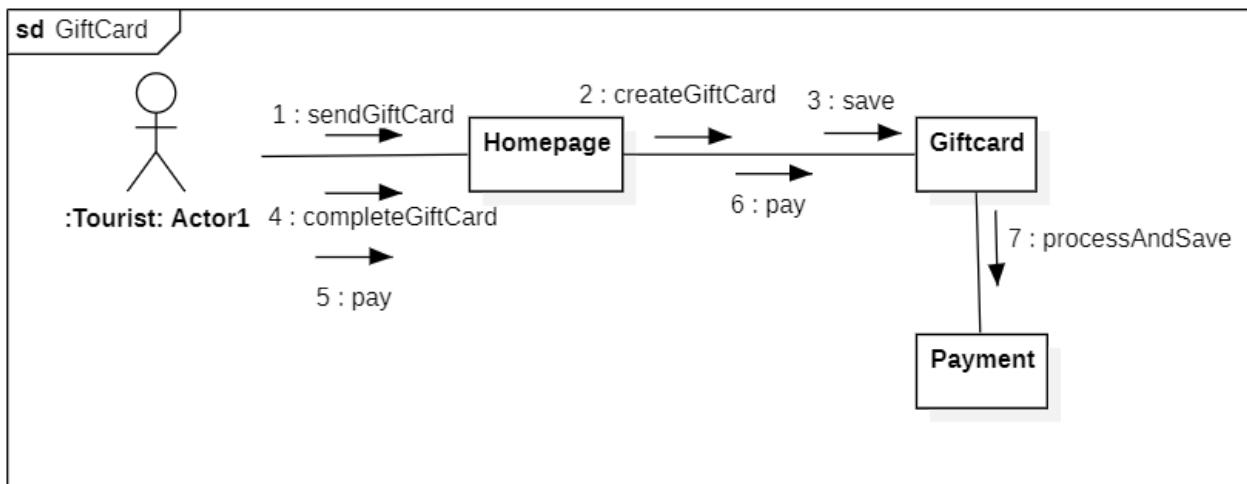


## Homepage

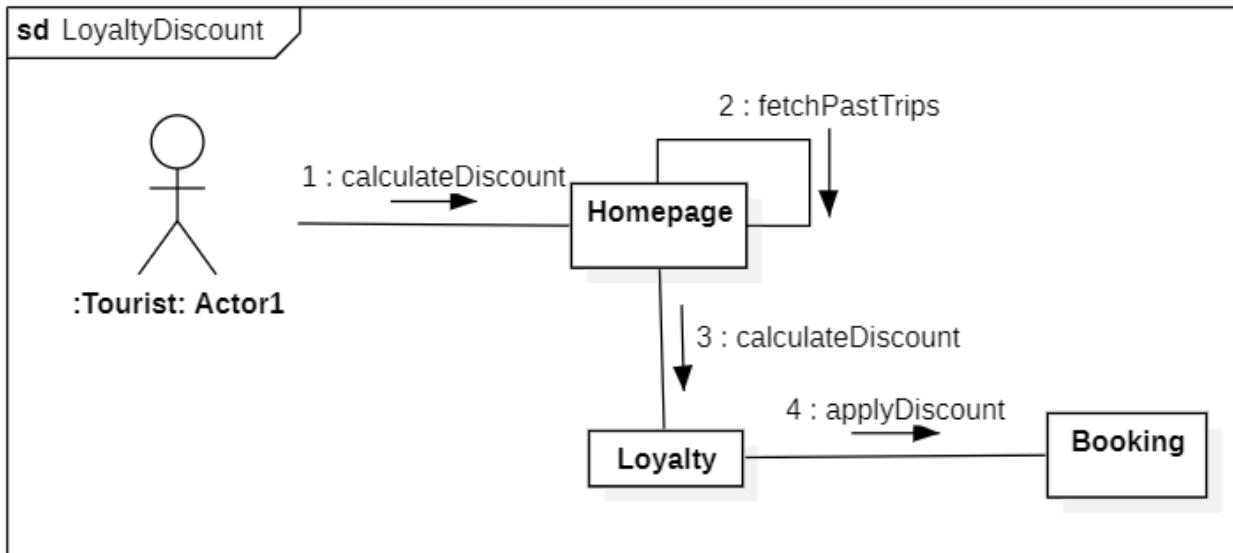
CD-3: Display Past Trips



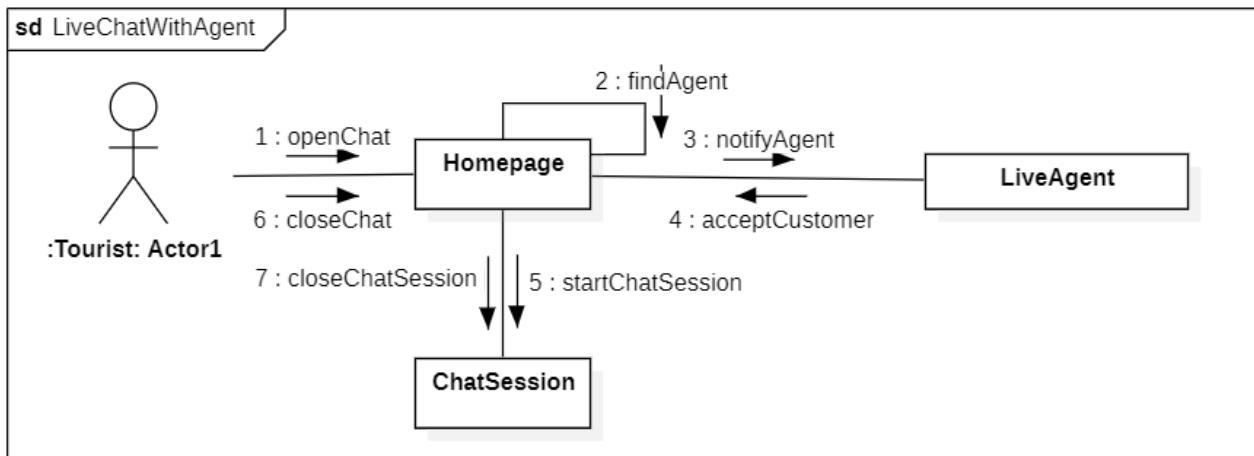
CD-4: Gift Card



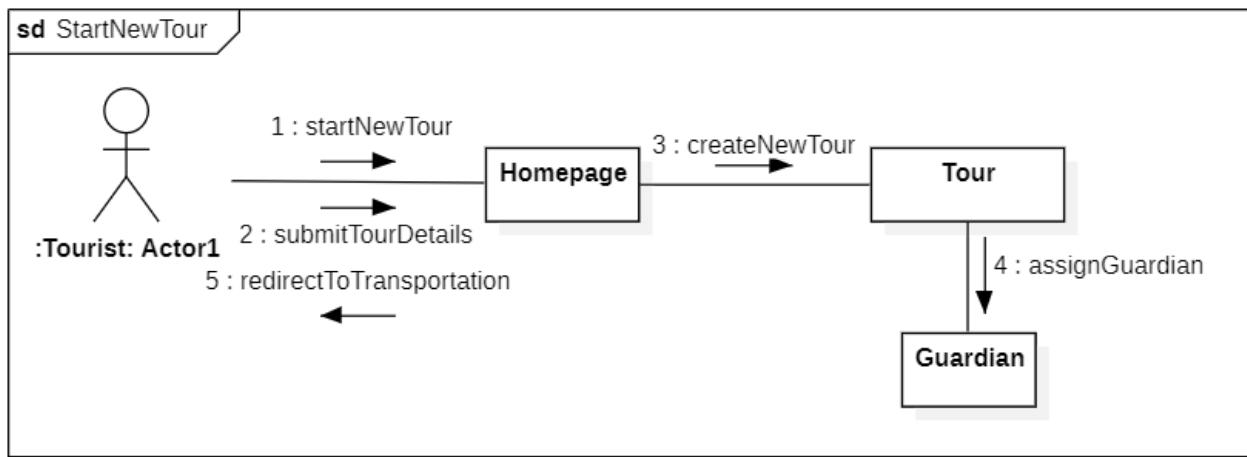
CD-5: Apply Loyalty Discount



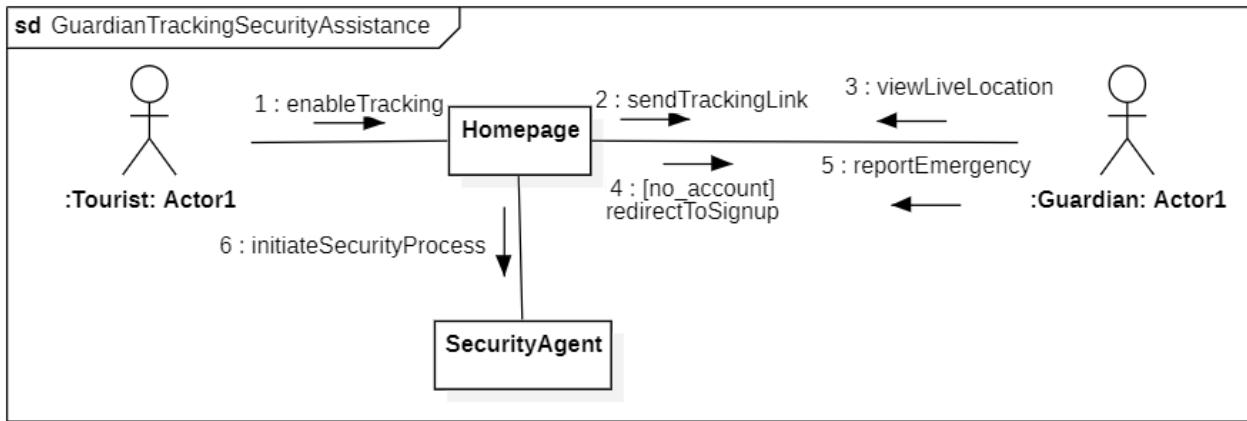
CD-6: Live Chat with Agent



CD-7: Start New Tour

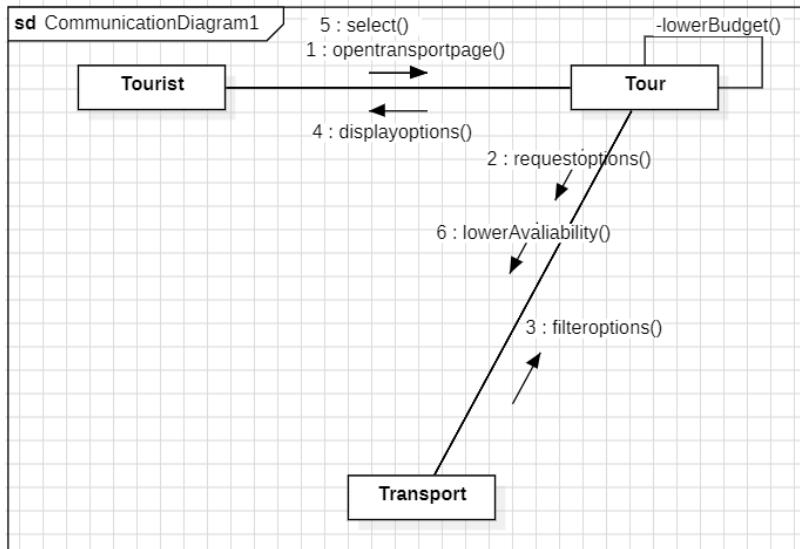


CD-8: Guardian Tracking and Security Assistance

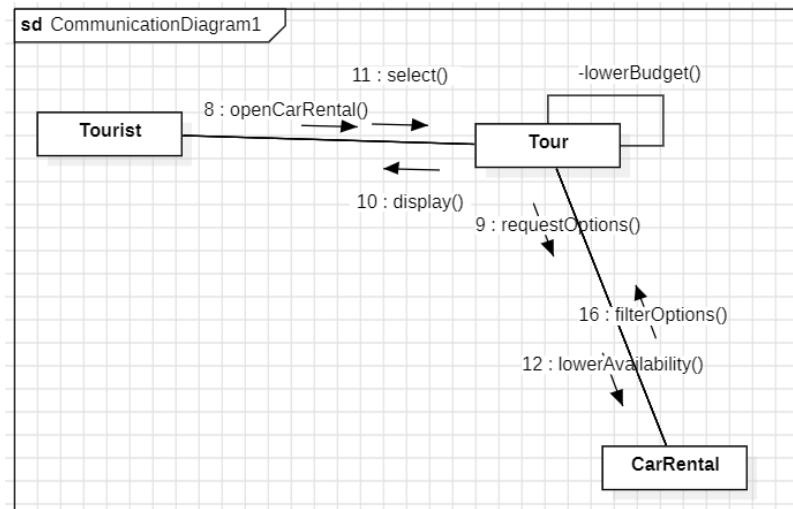


## **Prepayment Tour Activities**

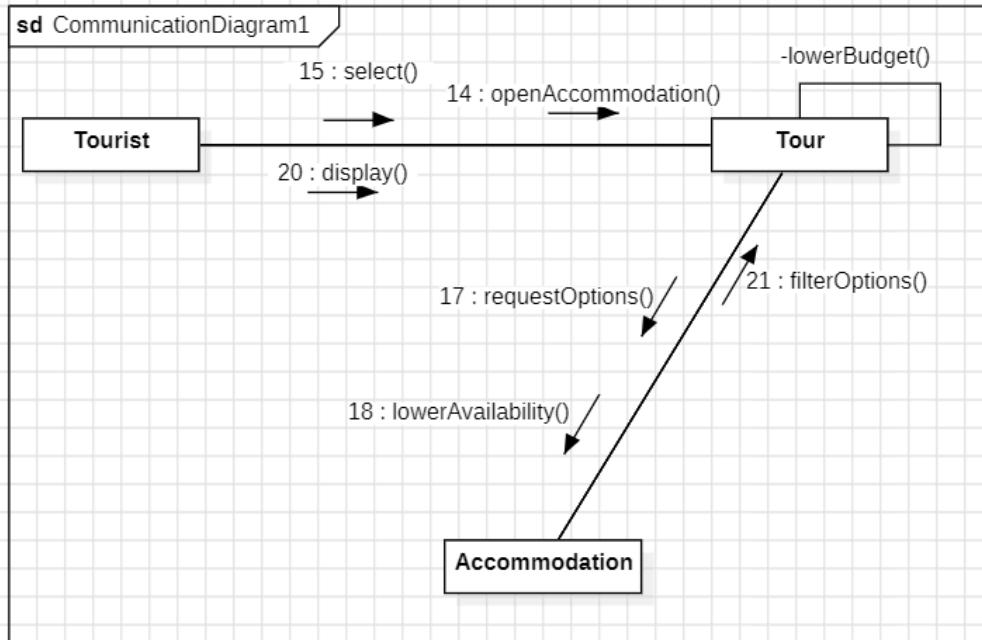
### CD-9: Public Transport



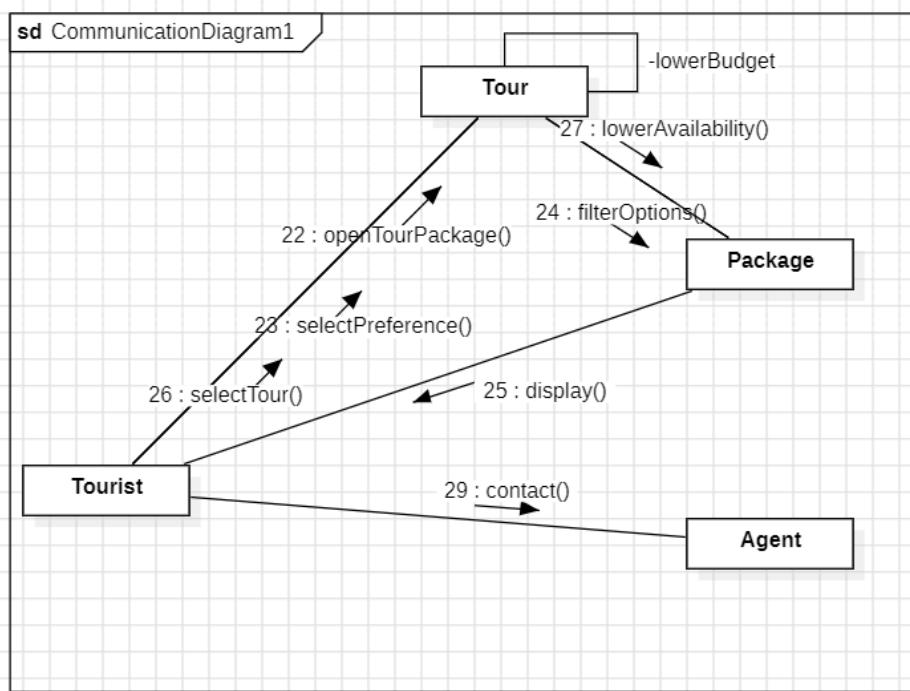
### CD-10: CarRental



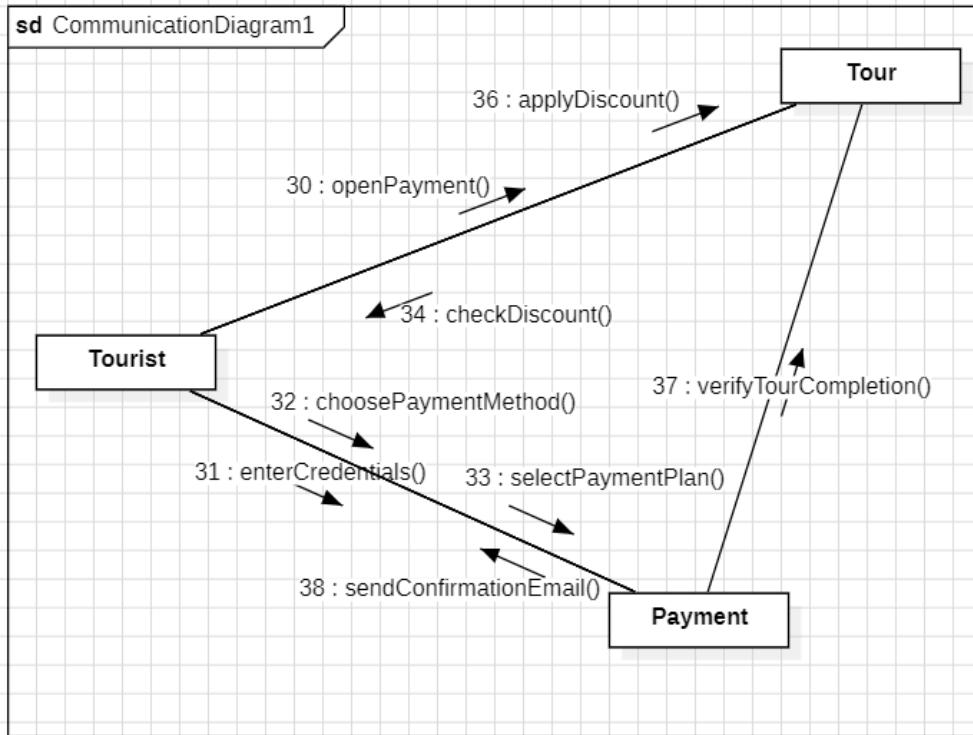
### CD-11: Reserve Accommodation



### CD-12: Book\_Tour\_Package

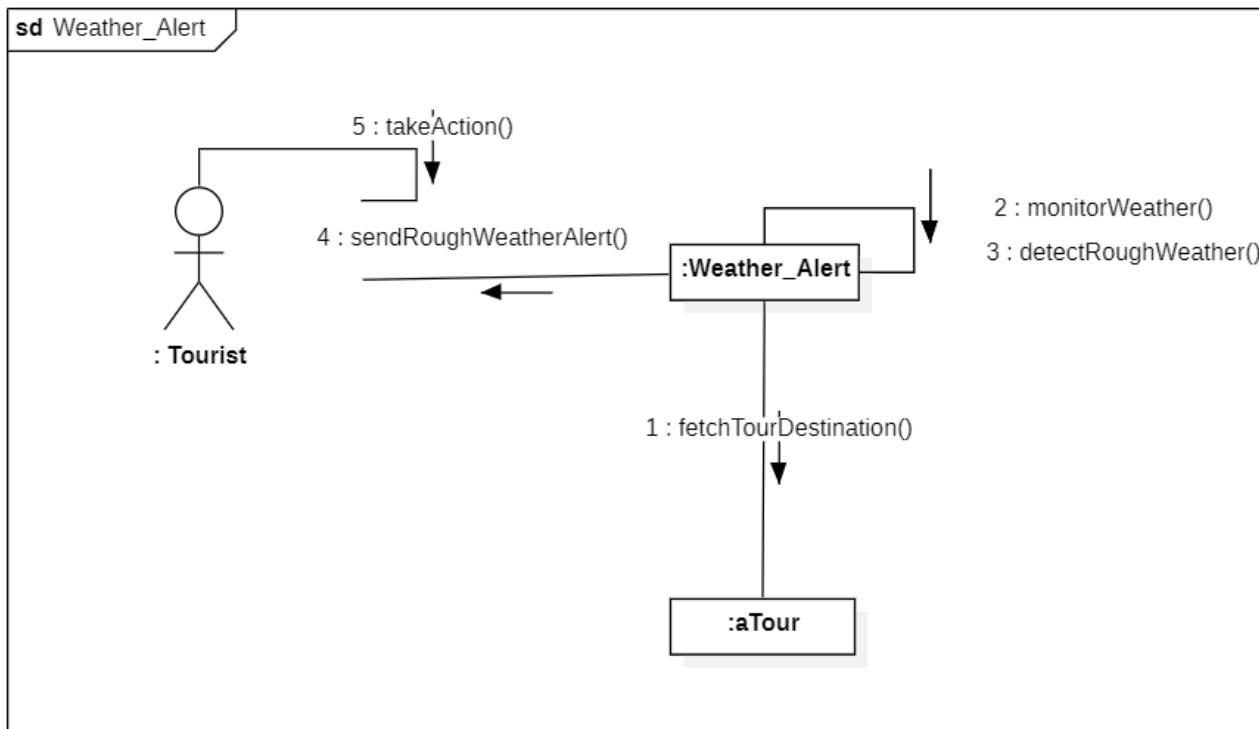


CD-13: Online\_Payment\_and\_Email Receipt && CD-14: Payment\_Plans

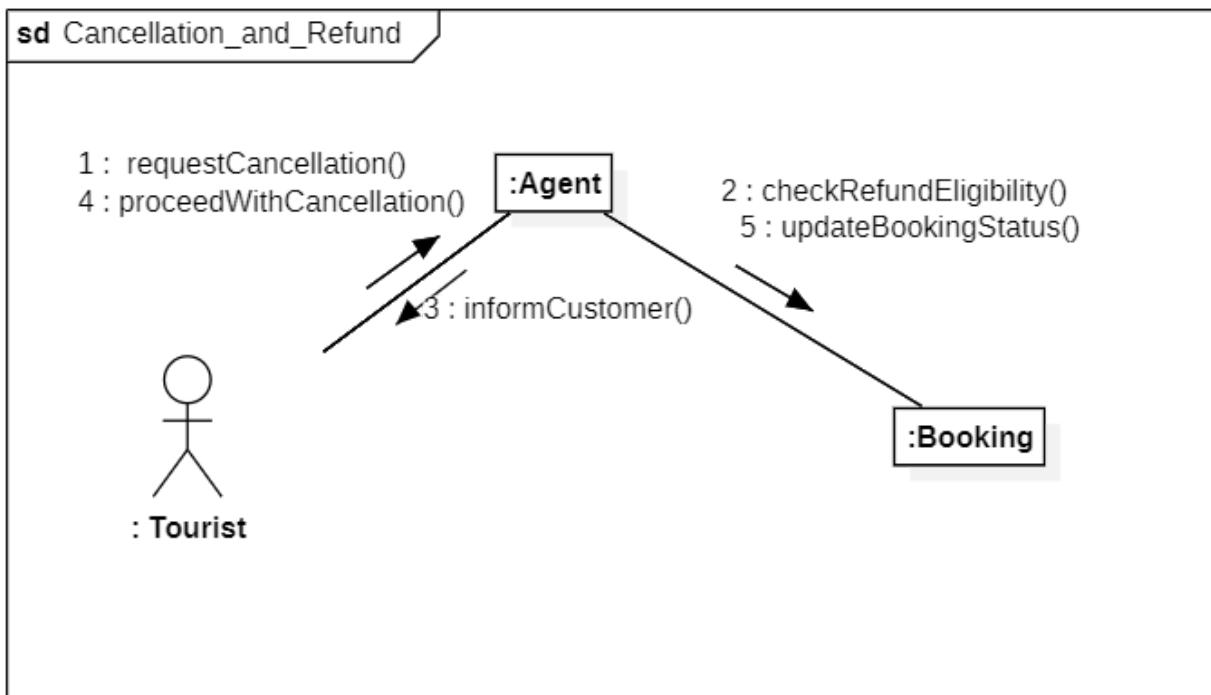


## **Postpayment Tour Activities**

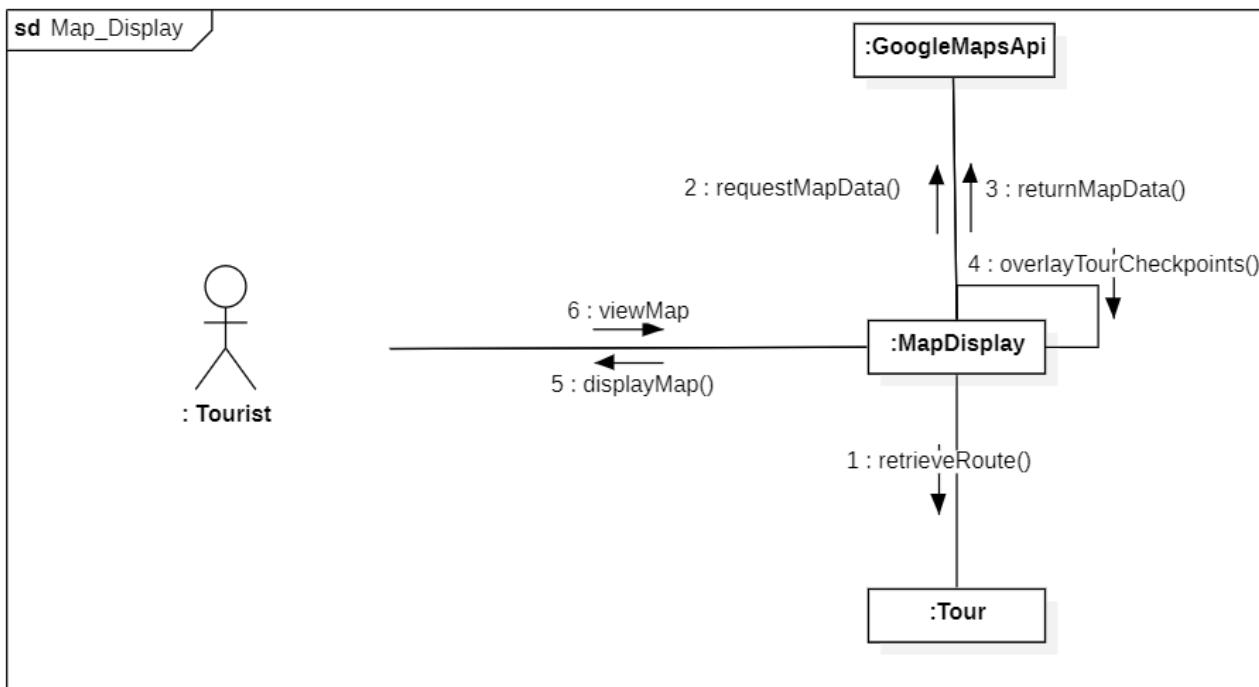
CD-15: Weather\_Alert



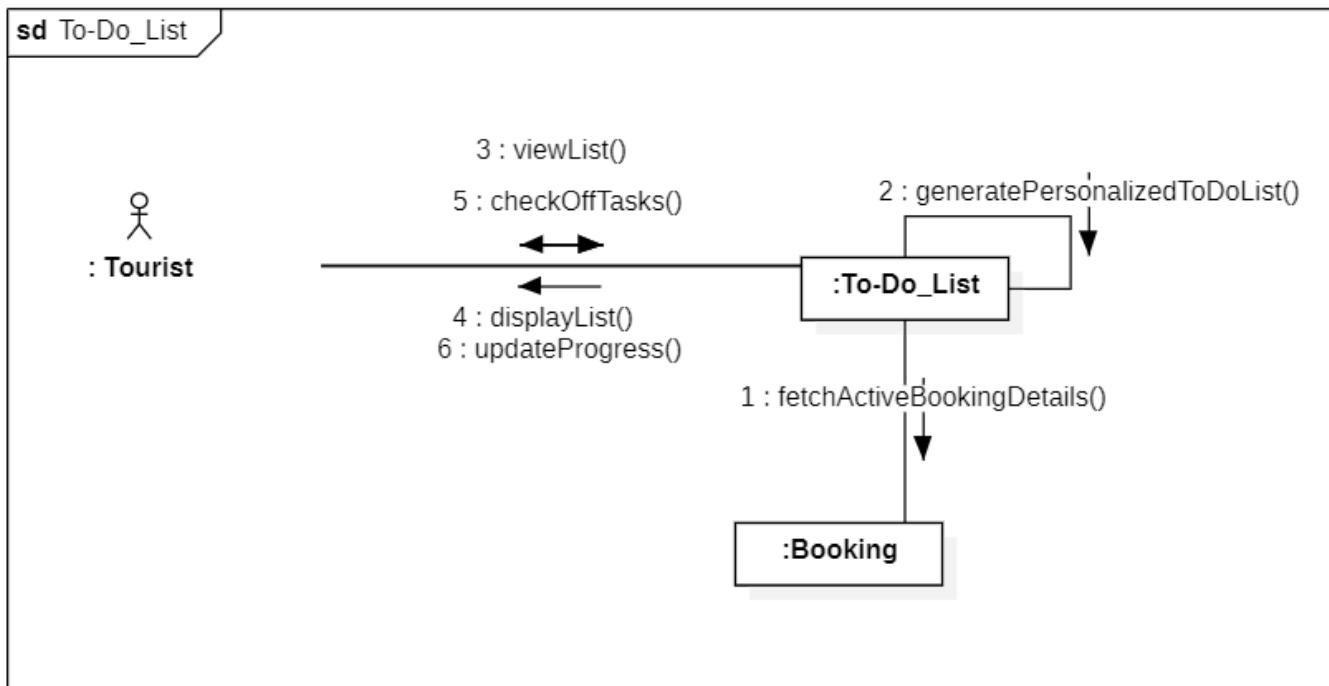
CD-16: Cancel\_And\_Refund\_Customer\_Trip



SD-17: Map\_Display

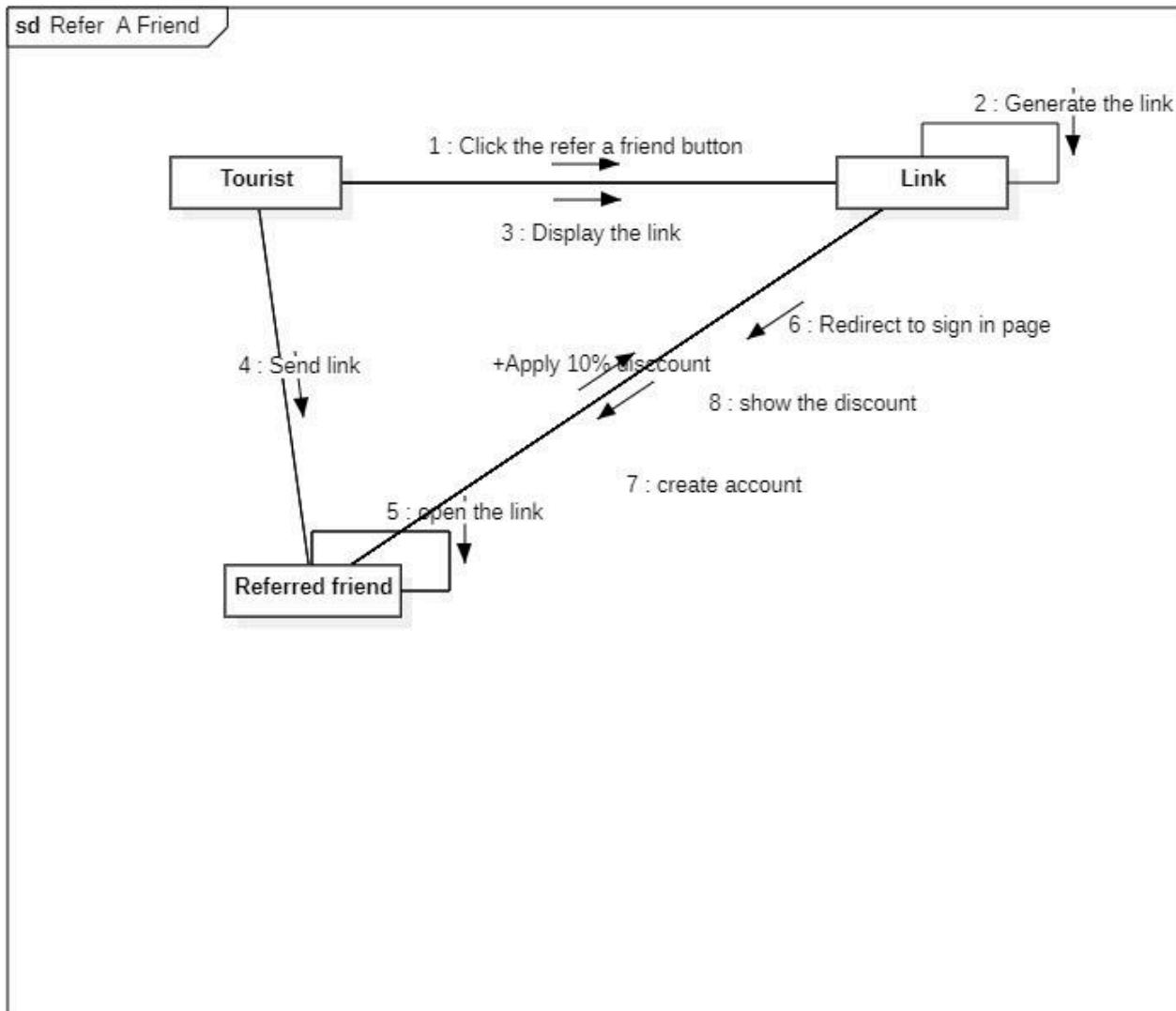


CD-18: To-Do\_List



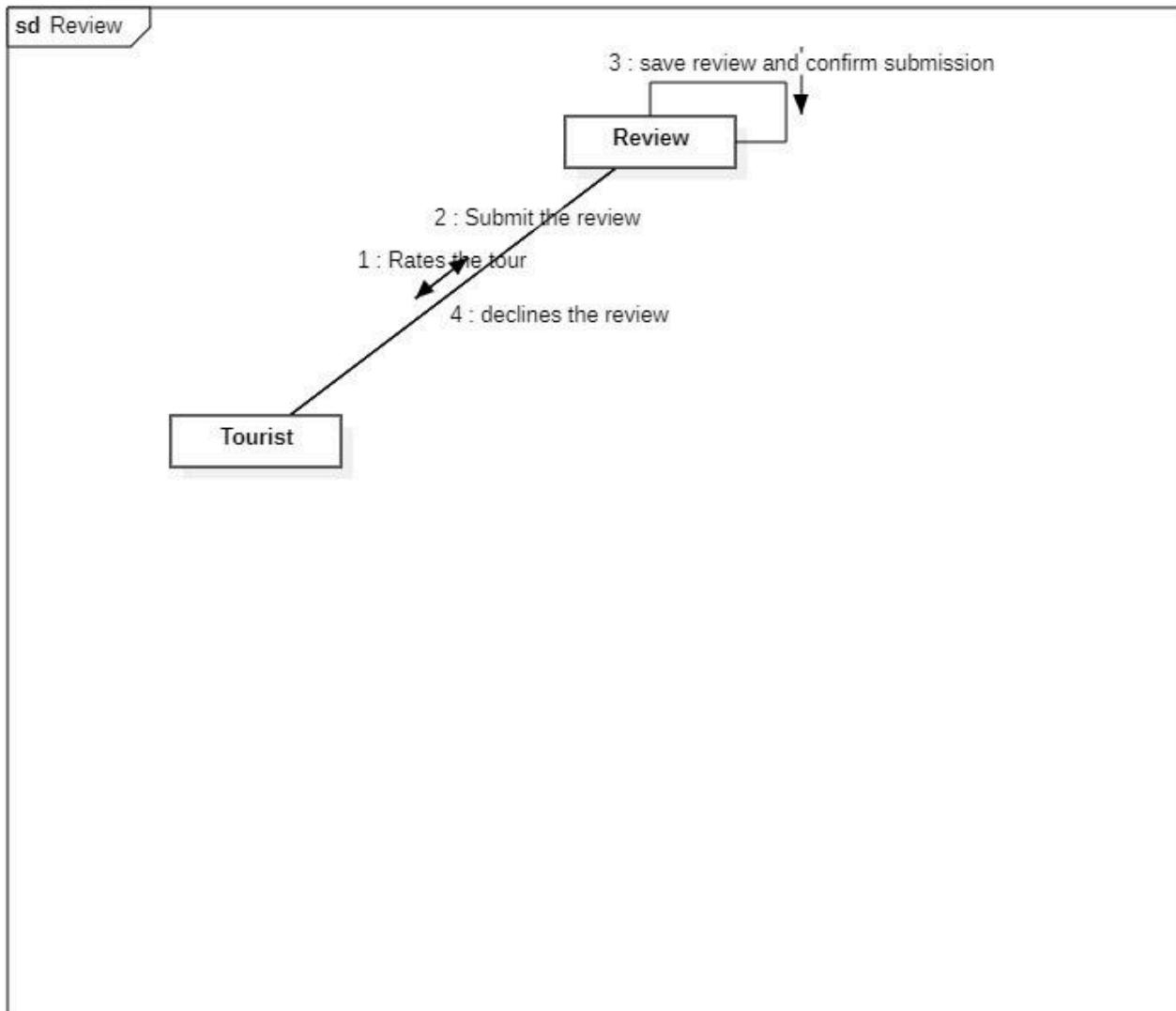
## **Post Tour Activities**

## CD-19: Refer a Friend



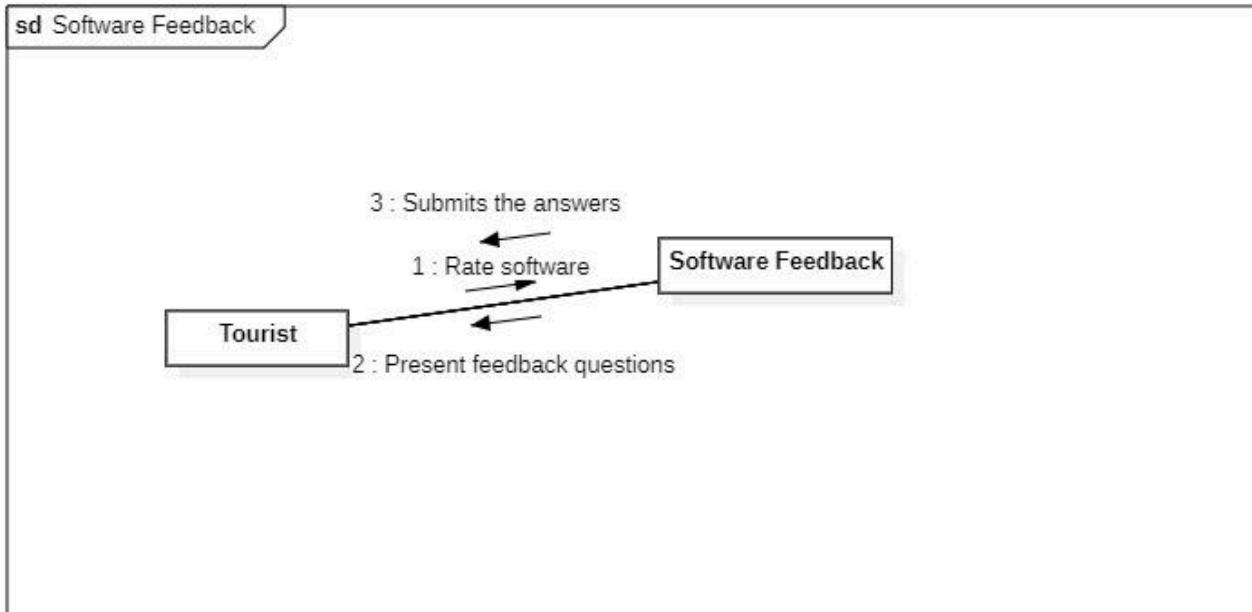
CD-20: Review

*Travel Agency System Requirements Specification*



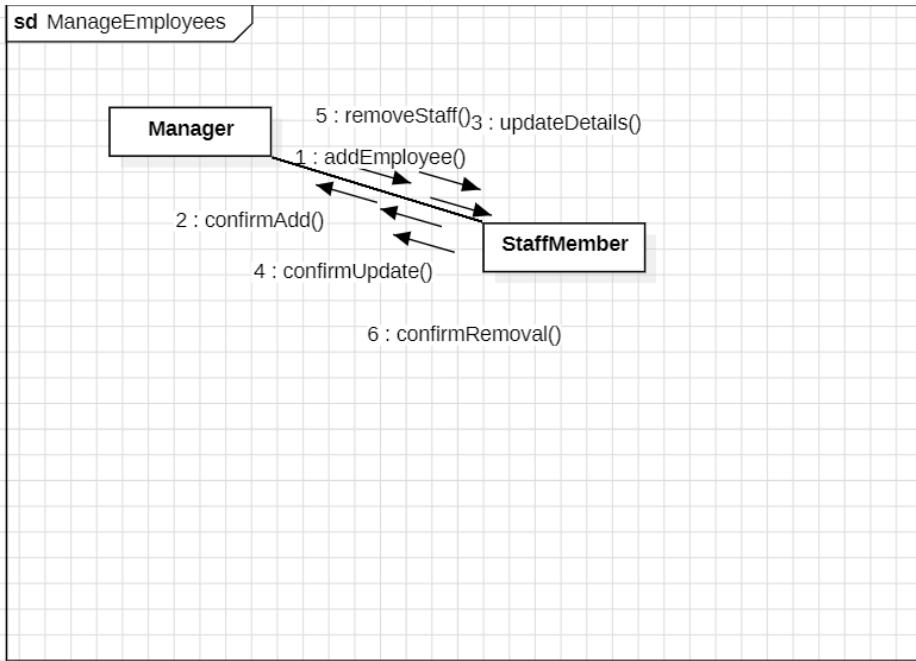
CD-21: Software Feedback

*Travel Agency System Requirements Specification*

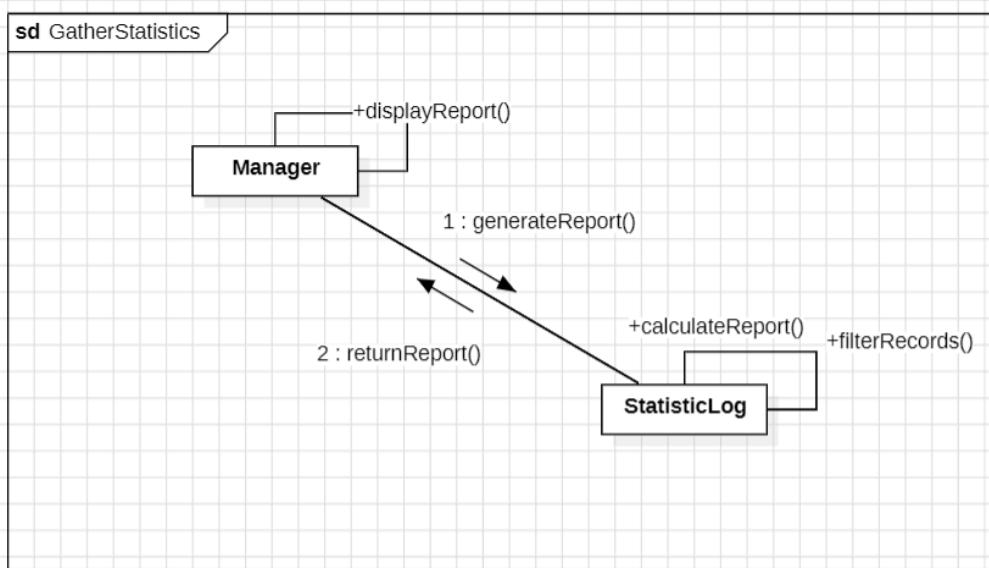


## **Manager Activities**

CD-22:ManageEmployees



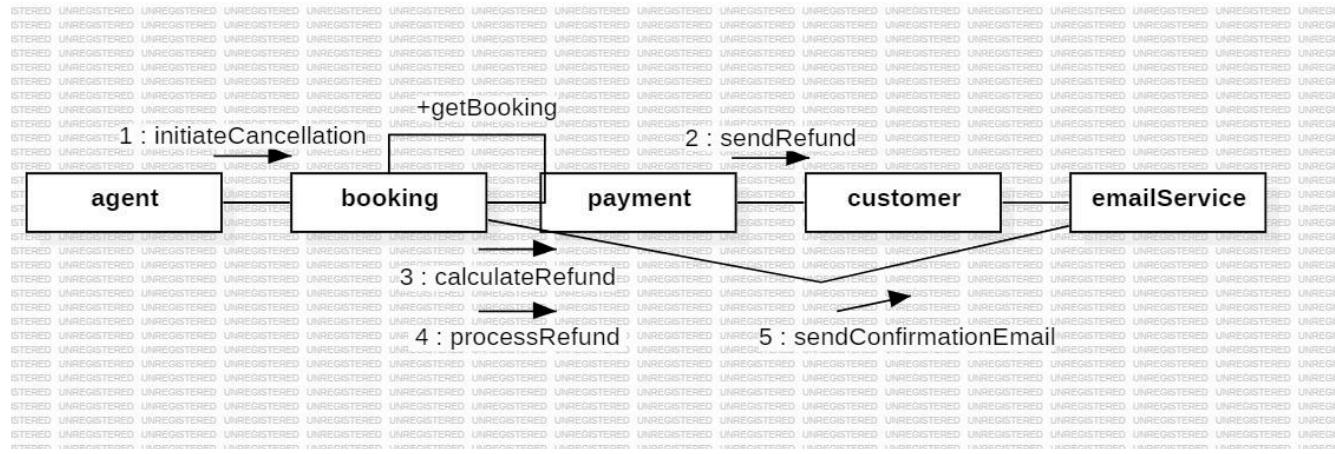
CD-23: GatherStatistics



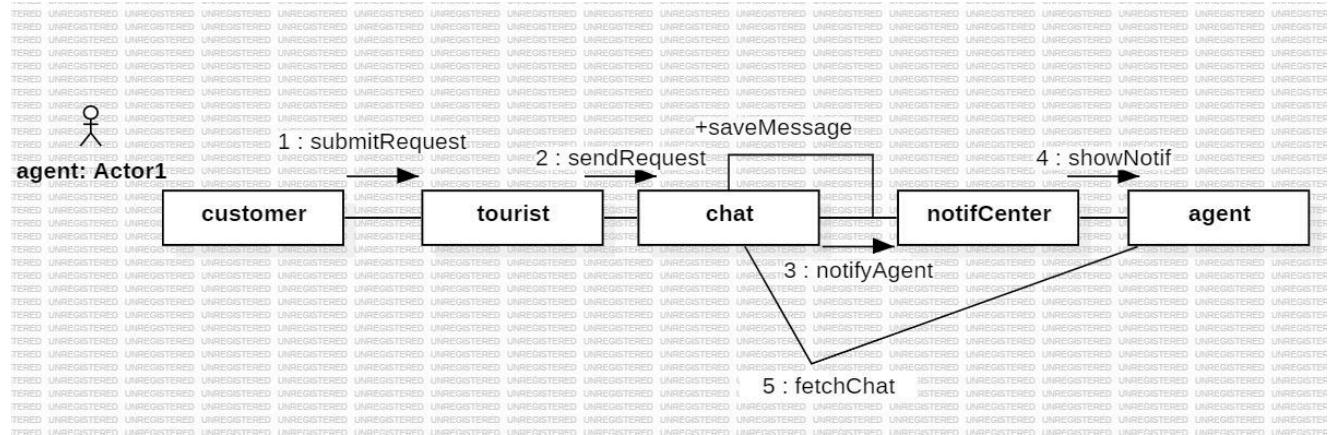
## Travel Agency System Requirements Specification

### Live Assistant Agent Activities

#### UC-24: Cancellation and Refund

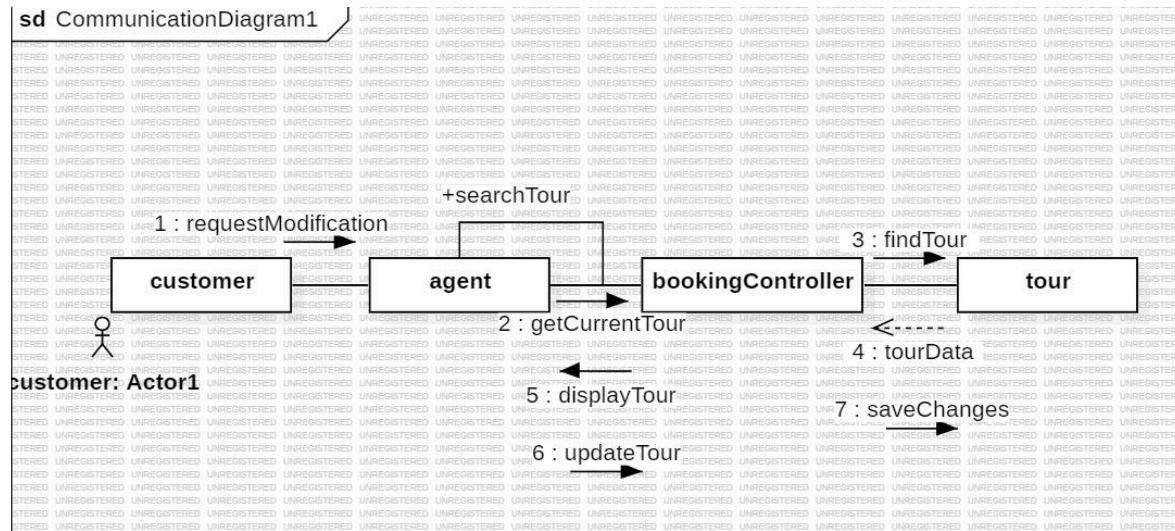


#### UC-25: Communicate with Tourist



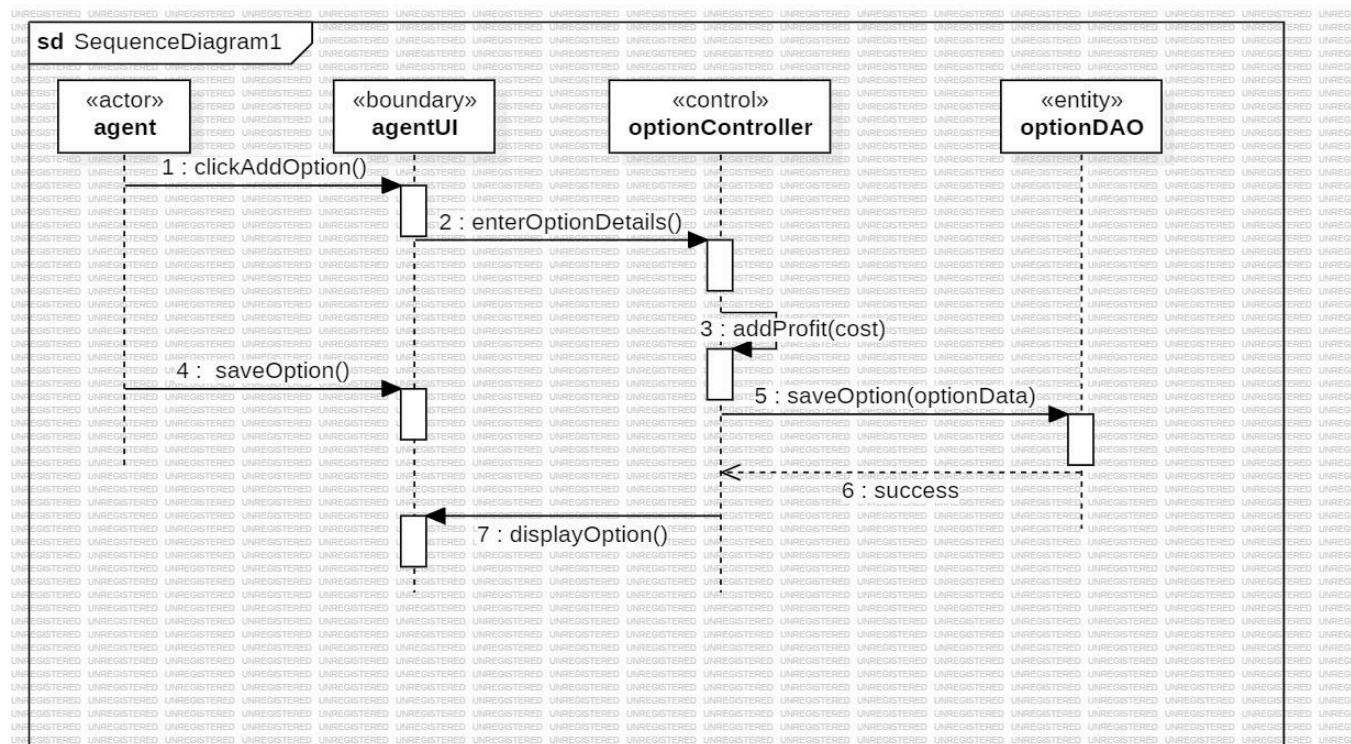
## Travel Agency System Requirements Specification

### UC-26: Modify Customer Trip



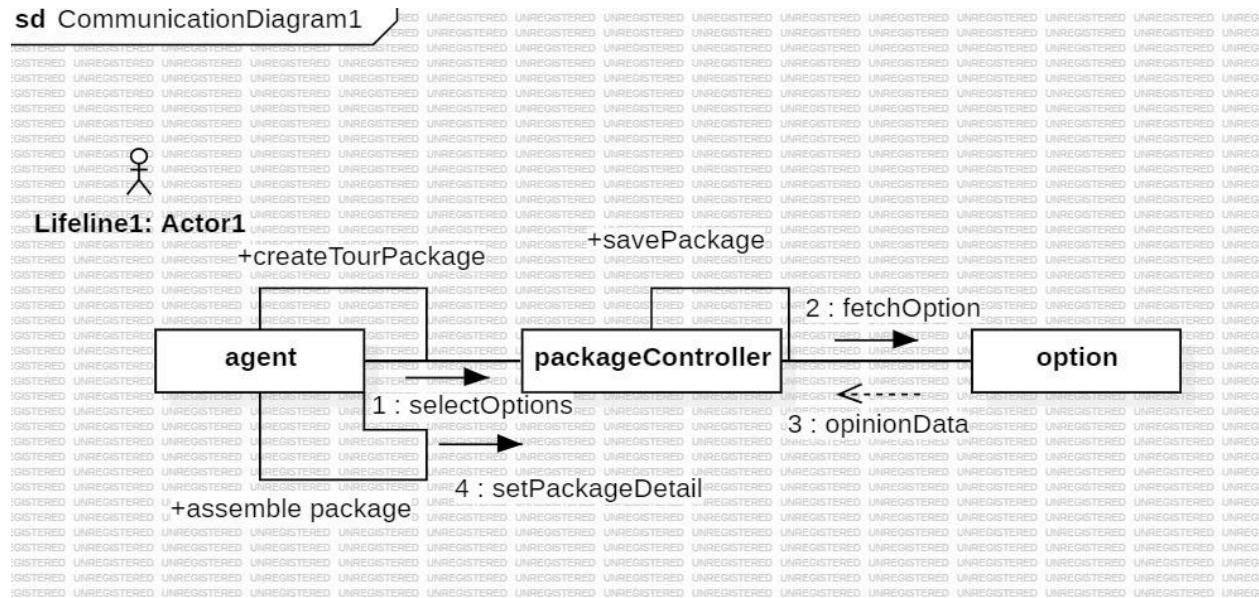
## Travel Agent Activities

### UC-27: Add new option



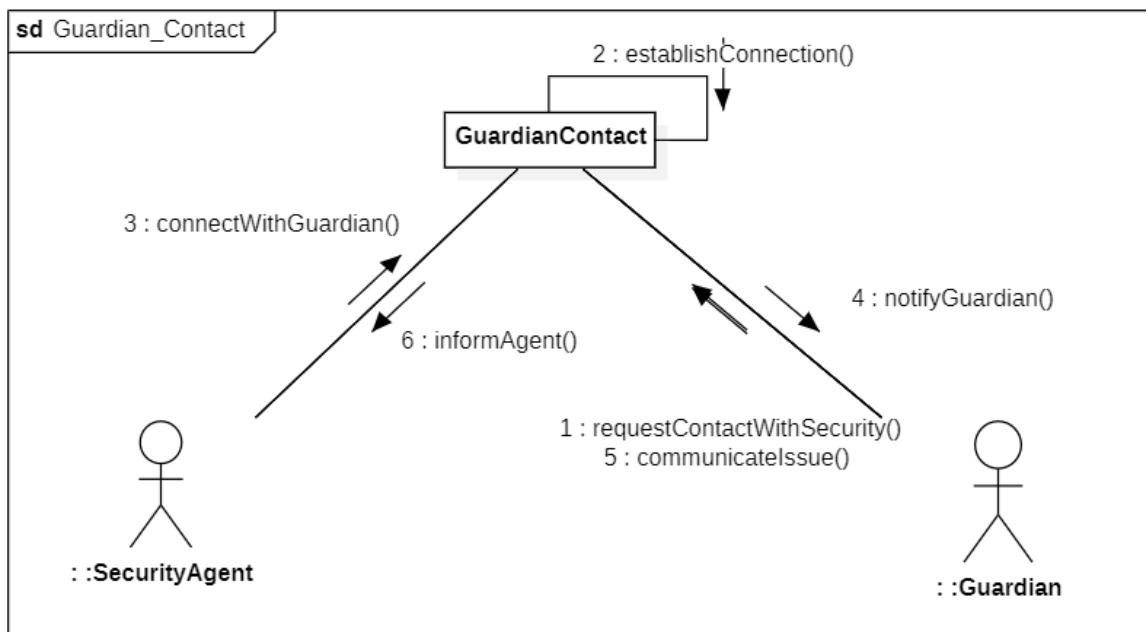
## Travel Agency System Requirements Specification

### UC-28: Create Tour Packages



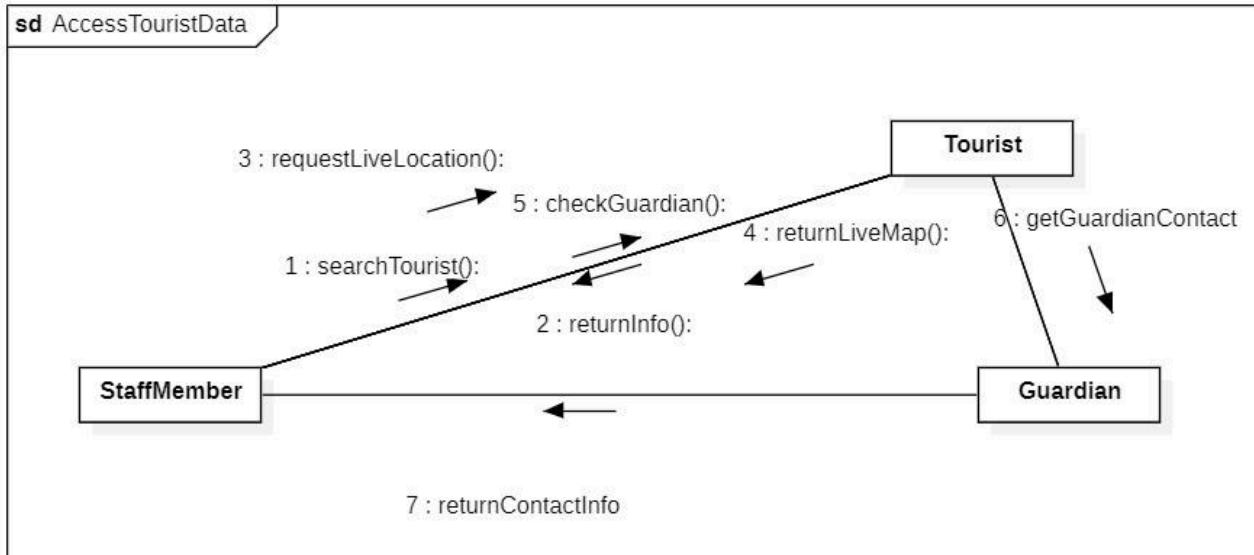
### Security Agent Activities

#### CD 29: Guardian\_Contact



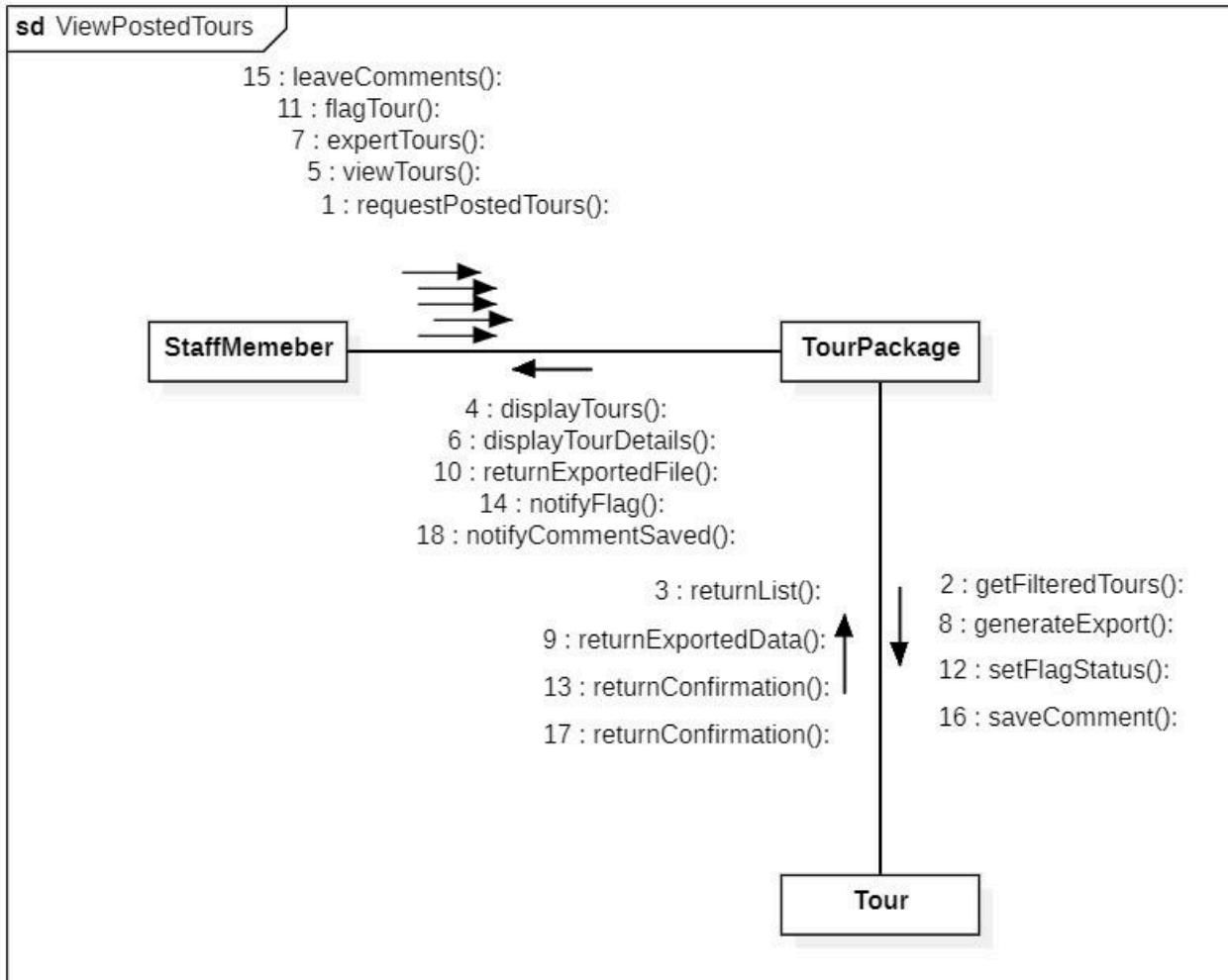
## All Staff Members

CD:30: Access All Tourist Data



CD:31: View Posted Tours

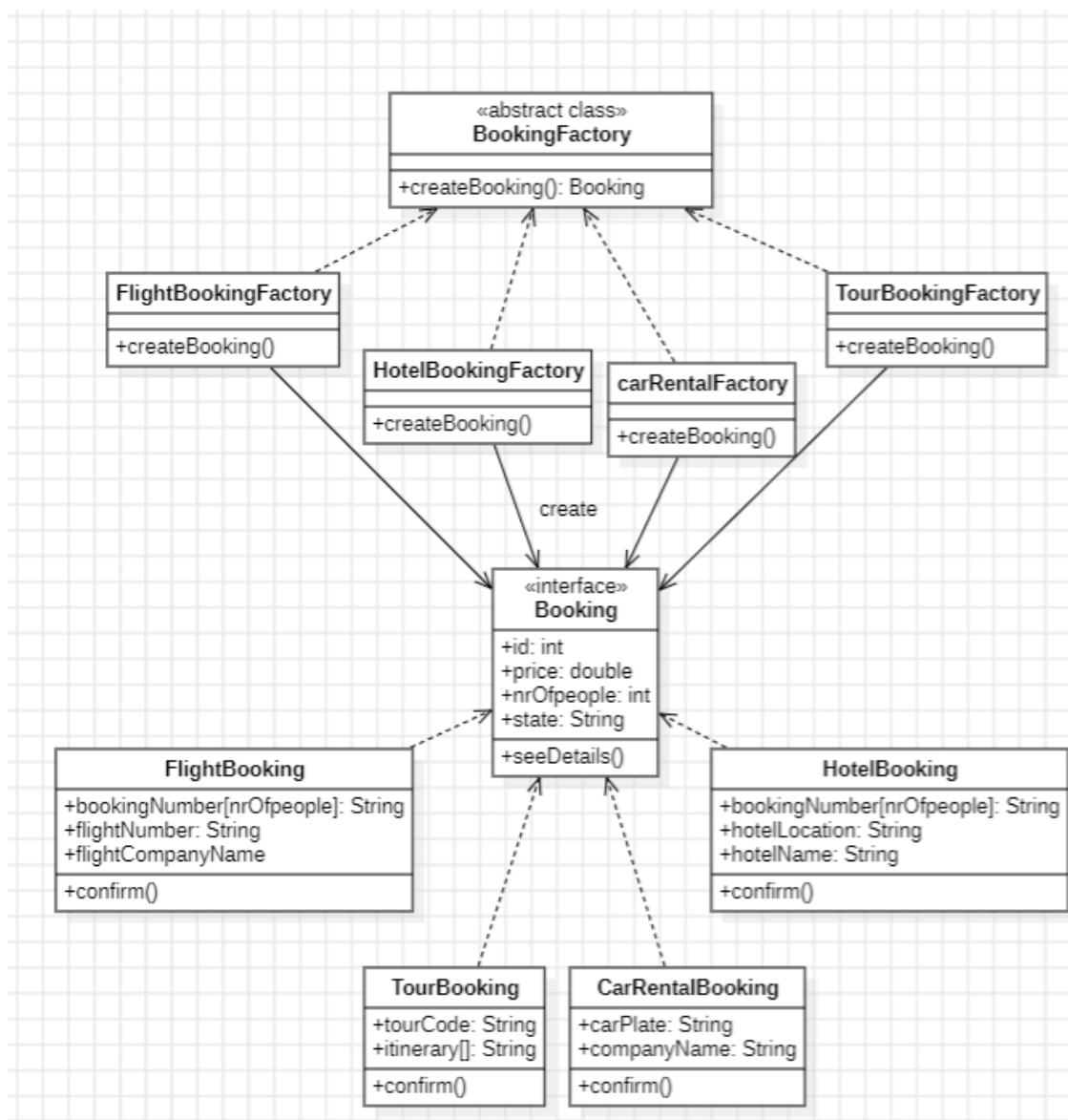
## Travel Agency System Requirements Specification



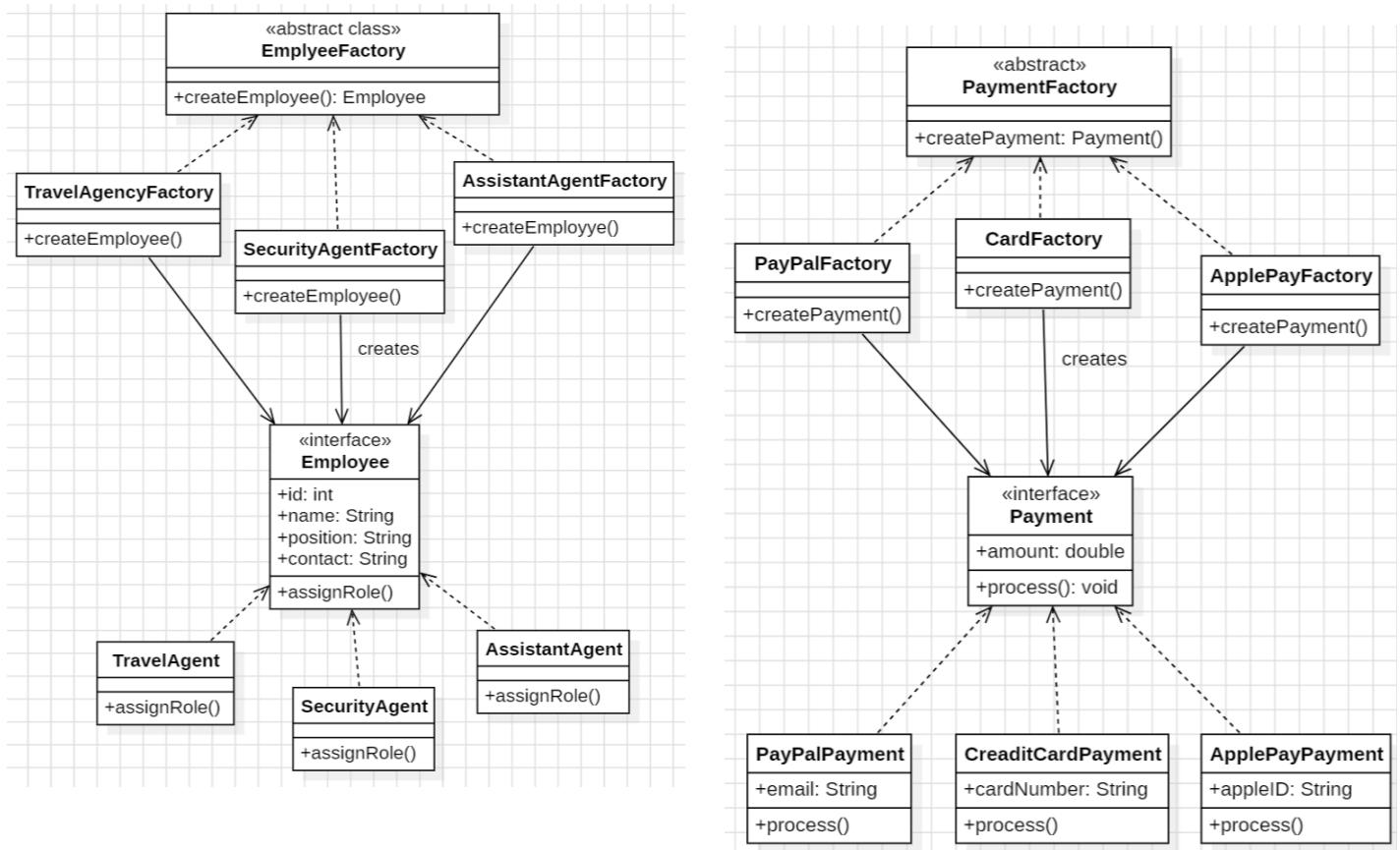
## Design Patterns

### Factory Method Pattern

The factory method pattern can be used in several components of our software: booking (flight, hotel, car rental, tour); employees(Travel Agent, Security Agent, Assistant Agent); Payment (PAyPal, CreditCard, Apple Pay); Tours (Custom, Package). These cases benefit from the Factory Method Pattern because we need to encapsulate the creation logic for flexibility and reuse, we will need to extend each module in the future with new features and we want to decouple object creation from business logic.

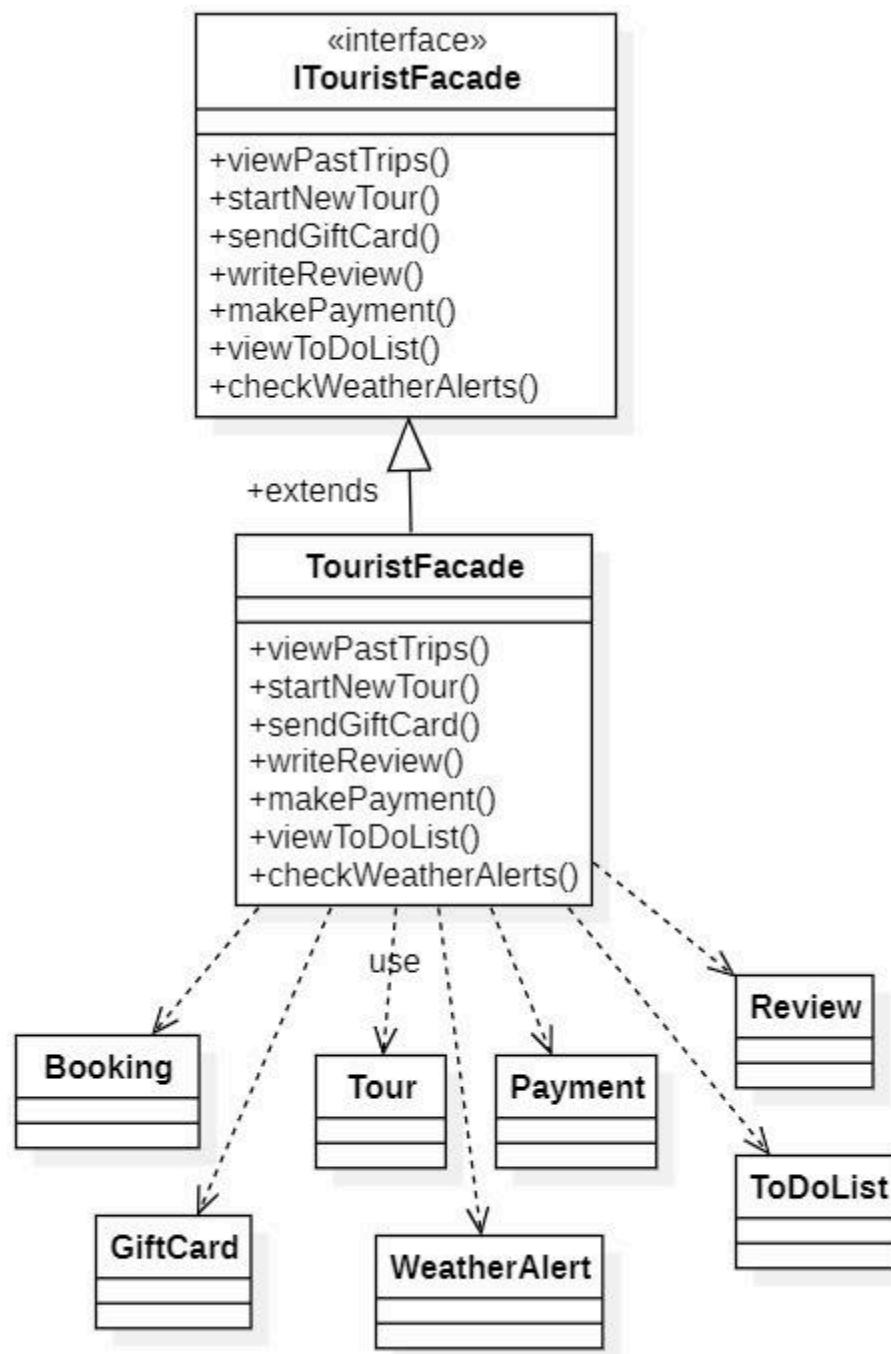


## Travel Agency System Requirements Specification



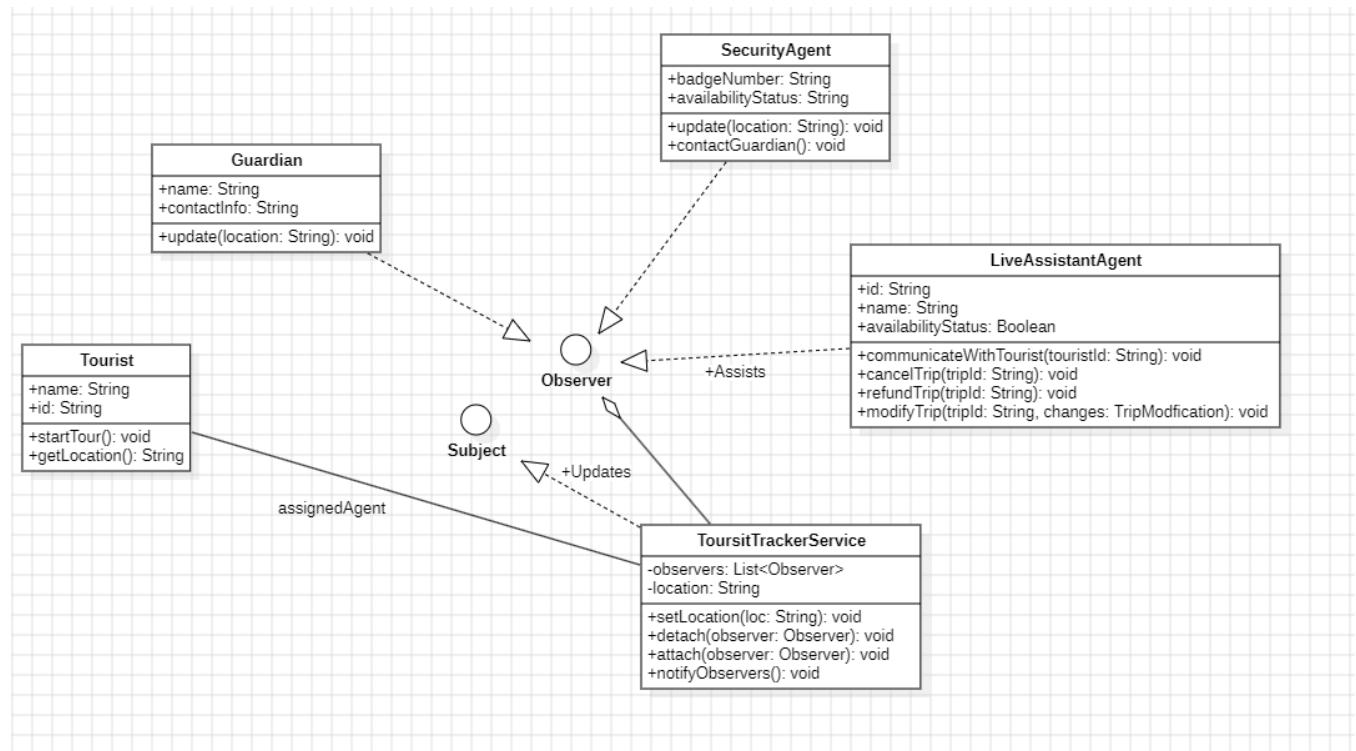
## **Facade Design Pattern**

The Facade design pattern can be used to provide a unified, simplified interface for complex interactions between subsystems across the entire application. Instead of letting boundary classes (such as HomePage, LiveChat, TouristDashboard etc.) directly coordinate multiple DAOs, controllers, and services, a facade layer handles everything. It prevents UI classes from depending on multiple subsystems; improves code readability, modularity, and testability; and it also makes the system follow clean architecture principles.



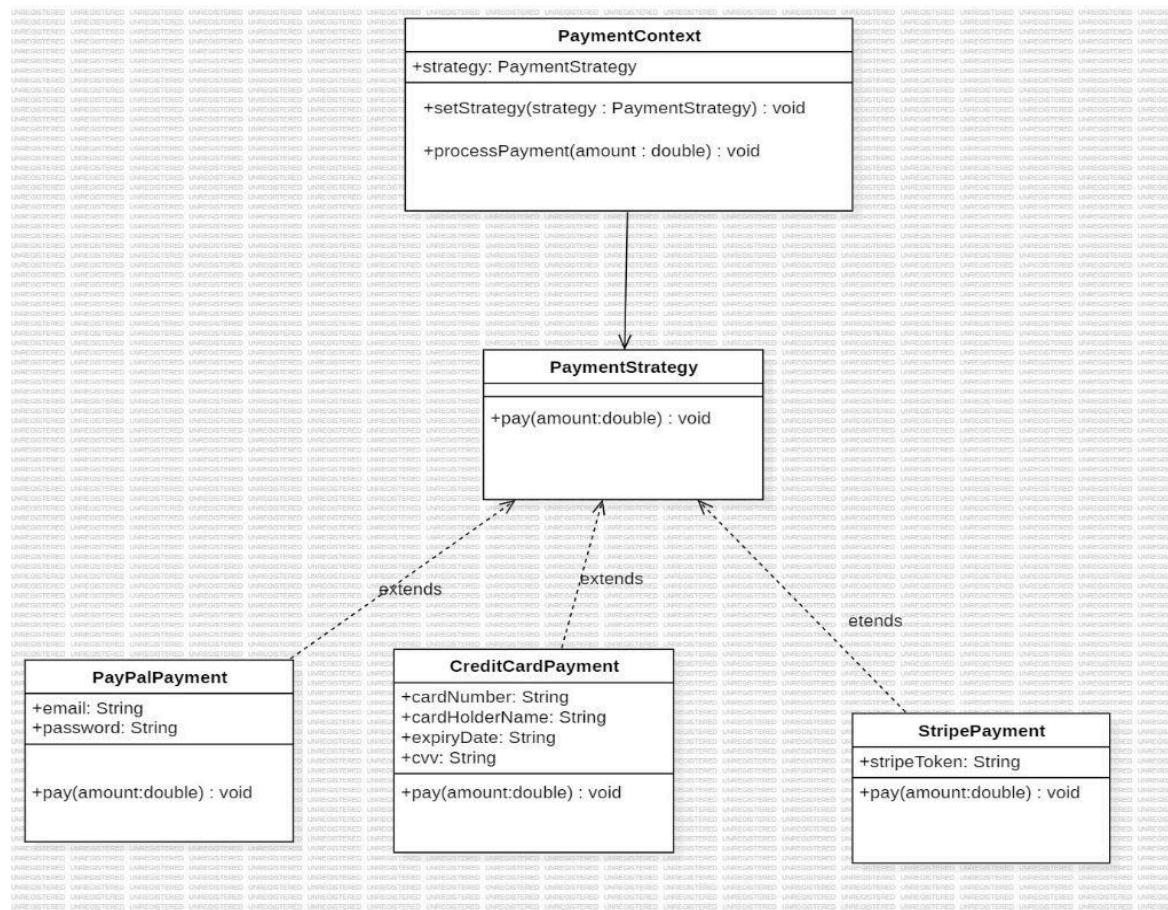
## Observer Design Pattern

The Observer Pattern can be used to implement live, event driven mechanisms across our Tourist Agency platform. This pattern enables real time responses and updates in components such as (**Guardian Tracking**, **Live Chat**, and potentially **Weather Alerts**) eliminating the need for constant manual checks. By doing so, it significantly reduces dependencies between modules. Moreover, it aligns with clean architecture principles by allowing high level components such as security panels to remain independent of lower level logic. Additionally, it enhances testability and modularity by isolating the publisher logic from the subscribers, which can be easily extended or replaced without impacting other parts of our system. The *subject* in our design diagram here is the core component in holding important state information while it also manages the objects, in which we call the *observers*. This ensures they stay updated in live time. Pattern promotes **TouristTrackerService** (the subject) with observers like **Guardian** and **SecurityAgent**. They are tightly binding and relevant in our platform.



## Strategy Design Pattern

The Strategy Design Pattern is used on our software to provide flexible and interchangeable ways of handling core operations such as tour planning, transport selection, accommodation choices, and payment processing. For example, the system can dynamically choose between different tour planning strategies like budget, luxury, or adventure based on a customer's preferences and budget. Similarly, transport options like public transportation or car rental can be selected using specific strategies that prioritize cost, speed, or convenience. By encapsulating these behaviors into separate strategy classes, the software remains clean, modular, and easy to maintain or expand.



## **Statistic Log**

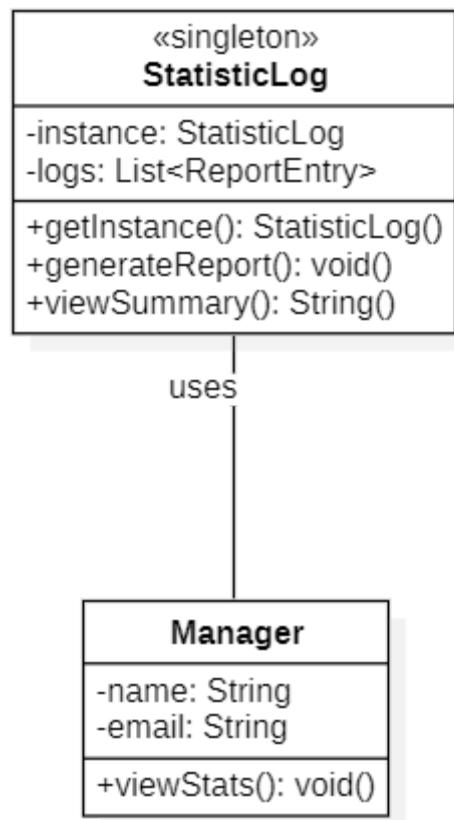
In the Travel Agency System, certain classes represent globally used resources. For example, components like StatisticLog- for global reports and MapDisplay-for route tracking, need to maintain a consistent single state throughout the entire application.

The Singleton Design Pattern ensures that a class has:

- Only one instance throughout the system.
- A global access point to this instance.
- It's especially useful for coordinating activities that rely on shared resources, like statistics or maps.

## ***Statistic Log***

- StatisticLog is a Singleton used by the Manager.
- getInstance() ensures only one StatisticLog exists.
- generateReport() is called to summarize data for decision-making.



### *Map\_Display*

- MapDisplay provides the city map with checkpoints for each trip.
- There should only be one active map per session, so using a Singleton avoids duplicates.
- The Tourist uses MapDisplay.getInstance() to view or update maps during the tour.

