



# Dream Destinations

Travel Agency

12.06.2024

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MAS Project

Group 13c English

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# Introduction

Dream Destinations is a web application designed for adventure seekers and travelers from all around the globe. The application's main goal is to be user friendly while being efficient during the process of selecting the most desirable trip.

## Key Goals

- **User-Friendly Interface** – create a website with an intuitive layout that makes it easy for users to find and plan their ideal tours.
- **Detailed Travel Descriptions** – provide detailed information about various destinations, including transport and accommodations.
- **Integrated Booking System** – integrate booking options for transports and lodgings for users to be able to take care of essential arrangements directly on our platform without a need to visit competitors' websites.

## Approach and Technologies

Dream Destinations website is utilizing technologies that are mentioned here:

- **Frontend Development** – the website benefits from Blazor functionality and MudBlazor component library to create good looking, responsive and a user friendly application.
- **Backend Development** – the web application leverages .NET with Entity Framework for efficient server-side operations and connection with a SQLite database.
- **User Experience Design** – principles of UX design are applied to ensure the website is easy to navigate and provides a positive user experience.

## Future Goals

Dream Destinations will be improved in the further development by adding some more features. The project will be utilized to gain practical experience in more advanced web development techniques.

# User Requirements

## Functional Requirements

### User Registration and Login

- The system should allow guests to register by providing their username and password (they will be used while logging in) and personal details like full name, phone, address and e-mail.

### Home Page Features

- The home page should display all of the available tours added by admins, it should be available to all of the users and guests (those that are not logged in).
- Users and guests should be able to click on any trip to view more information, including trip destination, all means of transport that will be used to get to destination, accommodation and other important details.
- It should be possible for all users and guests to search for more specific tours by using multiple filters.

### Booking and Purchase

- The website should provide customers with multiple travel plan options that can be only added by admins.
- Customers should be able to select a travel plan and be redirected to book a tour. In case they are not logged into the system, they should be redirected to the login.
- The system shall present a checkout window where users can choose their preferred payment method and complete the purchase.

### Online Tracking

- After purchasing a tour the system should allow customers to track all related travel information online.
- The system should check if the registered user has any scheduled tour, if this is the case e-mail with notification should be sent to the customer week before the trip's start date.

### Features for Admins

- Admins will have the same functionality as regular users.
- Admins should be able to add new trips, delete tours and update them.
- To create new tour admins will need to provide data.

# Non-functional Requirements

## Safety Measures

- The website should include authentication and authorization of users logging into the system as well as validation of all important details to ensure security of the web app.
- The system should perform validation on data provided by the user or a guest to prevent submitting data that can harm the website in any way.

## Design

- The web app should be implemented as a Single Page Application ensuring responsiveness to various interactions with users and most importantly work on different devices.
- The website should include a user interface that is easy to navigate and is very intuitive for new users.
- The design of the web app should be consistent throughout multiple pages.

## Error Handling

- The website should inform a user or a guest when invalid data was provided, with clear and informative messages.

## Localization and Internationalization

- The website should provide users or guests with a choice of the most important languages – English and Polish and display content based on the chosen language.

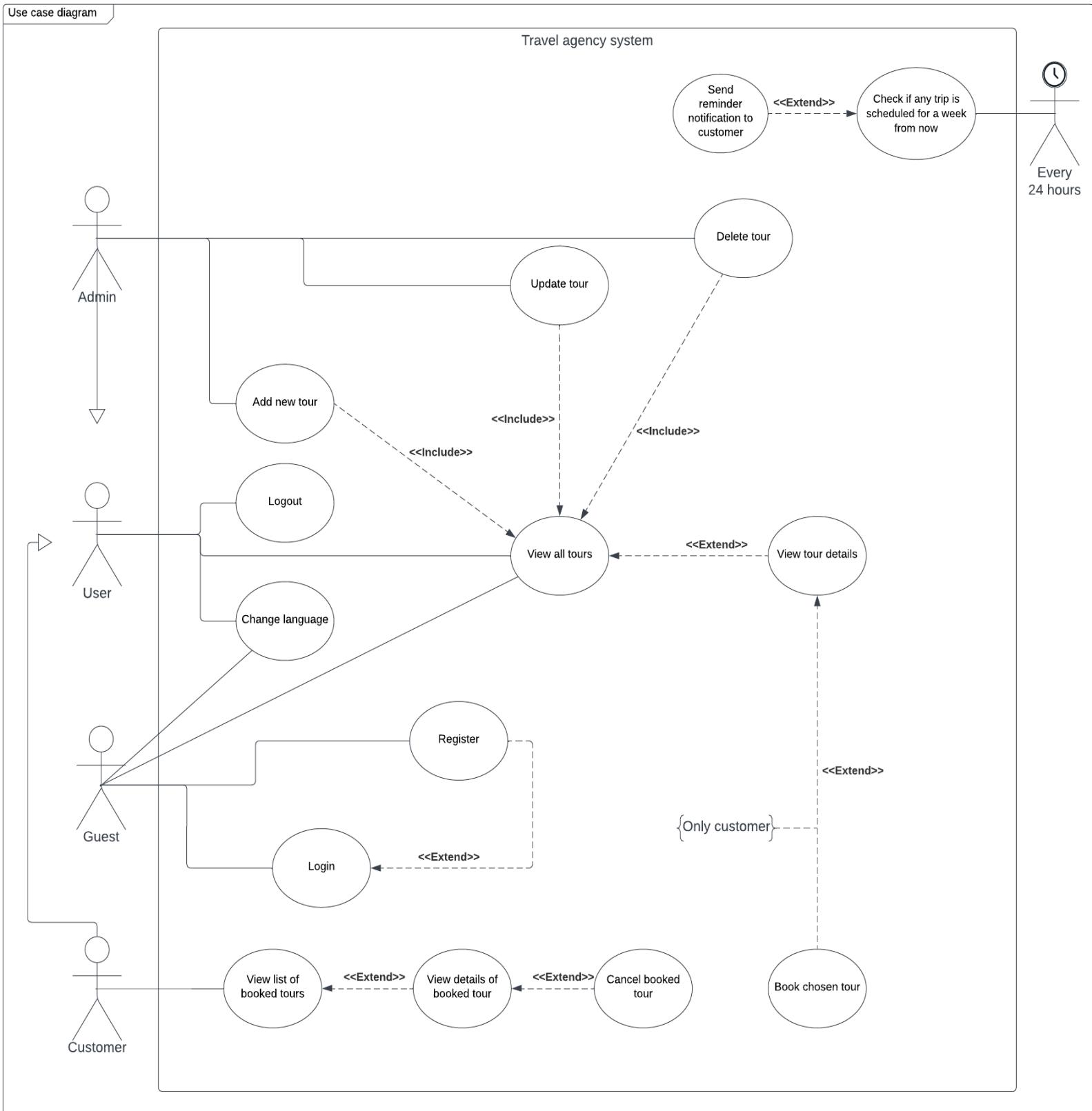
## Scalability

- The system should be able to handle an increasing number of data, especially new tours and users.

## Statistics

- The system should be able to collect data about the popularity of various tours.

# Use Case Diagram



# Scenario of Update Tour

## Brief Description

This use case allows an admin to update details of an existing tour in the Dream Destinations system. The updates may include changes to the tour's title, description, etc.

## Actors

Admin – the primary actor who has the authority to manage tour details.

## Preconditions

- User must be logged into the system as Admin.
- Tour chosen to be updated must exist in the system.

## Trigger

Admin clicks on update button that is placed on tour card

## Main Flow

1. The Admin logs into the travel agency system.
2. The Admin goes to the homepage where all of the tours are available.
3. The Admin chooses the specific tour they want to update from the list of existing tours.
4. The System shows the current details of the selected tour, including transport and lodging options.
5. The Admin modifies fields like title, description, images.
6. The Admin chooses to update existing transport.
7. The System displays a transport update dialog.
8. The Admin updates fields such as origin, destination, departure time and arrival time and clicks on a button to save them.
9. The System checks the updated information for completeness and correctness.
10. The System closes dialog and saves changes.
11. The Admin clicks on the button to update existing lodging.
12. The Admin updates fields such as address, description, phone etc. and submits the updated information.
13. The System checks the updated information for completeness and correctness.
14. The System closes dialog and saves changes to the chosen tour.
15. The Admin submits all of the changes by clicking the button.
16. The System checks the updated information for completeness and correctness.
17. The System updates every information about the chosen tour in a database.
18. The System displays a confirmation message indicating the tour has been successfully updated.

## Alternative Flows

- Main data about the tour like title, description, images, provided by Admin are not correct.

Ref. 16:

1. The System checks the updated information for completeness and correctness.
  2. The System displays an error message : "Incorrect data provided, try again".
  3. Return to point 5 from Main Flow.
- Data connected to transport like origin, destination, departure time and/or other, provided by Admin are not correct.

Ref. 8:

1. The System checks the updated information for completeness and correctness.
  2. The System displays error message "Incorrect transport data provided, try again" in transport's dialog window.
  3. Return to point 8 from Main Flow.
- Data connected to lodging like address, description, phone and/or other, provided by Admin are not correct.

Ref. 13:

1. The System checks the updated information for completeness and correctness.
  2. The System displays error message "Incorrect transport data provided, try again" in transport's dialog window.
  3. Return to point 12 from Main Flow.
- The Admin clicks delete on chosen transport.

Ref. 5:

1. The Admin modifies fields like title, description, images.
2. The Admin clicks on the delete button next to chosen transport.
3. The System displays the message "Transport was successfully deleted".
4. Go to point 11 from Main Flow.

- The Admin clicks delete on chosen lodging.

Ref. 10:

1. The System closes dialog and saves changes.
  2. The Admin clicks on the delete button next to chosen lodging.
  3. The System displays information about successful deletion of lodging.
  4. Go to point 15 from Main Flow.
- The Admin clicks Add Transport to add new transport.

Ref. 5:

1. The Admin modifies fields like title, description, images.
  2. The Admin clicks on the add button under all available transports.
  3. The System displays the Add Transport dialog window.
  4. The Admin fills all fields with data and clicks on submit.
  5. The System checks the updated information for completeness and correctness.
  6. The System closes the dialog window and adds new transport to the tour.
  7. Go to point 11 from Main Flow.
- The Admin clicks Add Lodging to add new lodging.

Ref. 10:

1. The System closes dialog and saves changes.
2. The Admin clicks on the add button under all available lodgings.
3. The System displays the Add Lodging dialog window.
4. The Admin fills all fields with data and clicks on submit.
5. The System checks the updated information for completeness and correctness.
6. The System closes the dialog window and adds new lodging to the tour.
7. Go to point 15 from Main Flow.

- Invalid data is provided in Add Transport dialog window

Ref. 5:

1. The Admin modifies fields like title, description, images.
2. The Admin clicks on the add button under all available transports.
3. The System displays the Add Transport dialog window.
4. The Admin fills all fields with data and clicks on submit.
5. The System checks the updated information for completeness and correctness.
6. The System displays error message “Incorrect transport data provided, try again” in transport’s dialog window.
7. Go to point 4 from current flow

- Invalid data is provided in Add Lodging dialog window

Ref. 10:

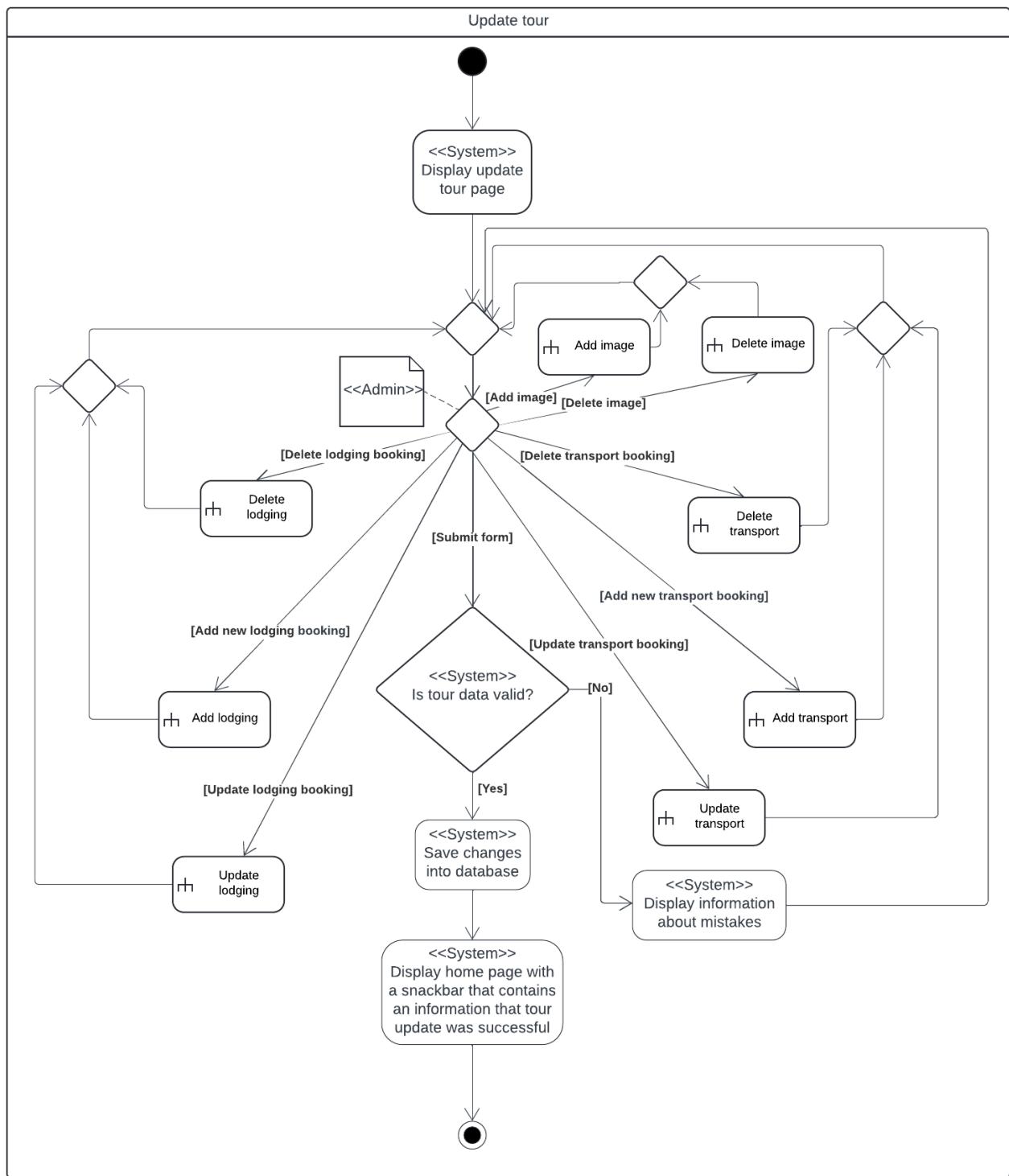
1. The System closes dialog and saves changes.
2. The Admin clicks on the add button under all available lodgings.
3. The System displays the Add Lodging dialog window.
4. The Admin fills all fields with data and clicks on submit.
5. The System checks the updated information for completeness and correctness.
6. The System displays error message “Incorrect lodging data provided, try again” in lodging’s dialog window.
7. The System closes the dialog window and adds new lodging to the tour.

### **Postconditions**

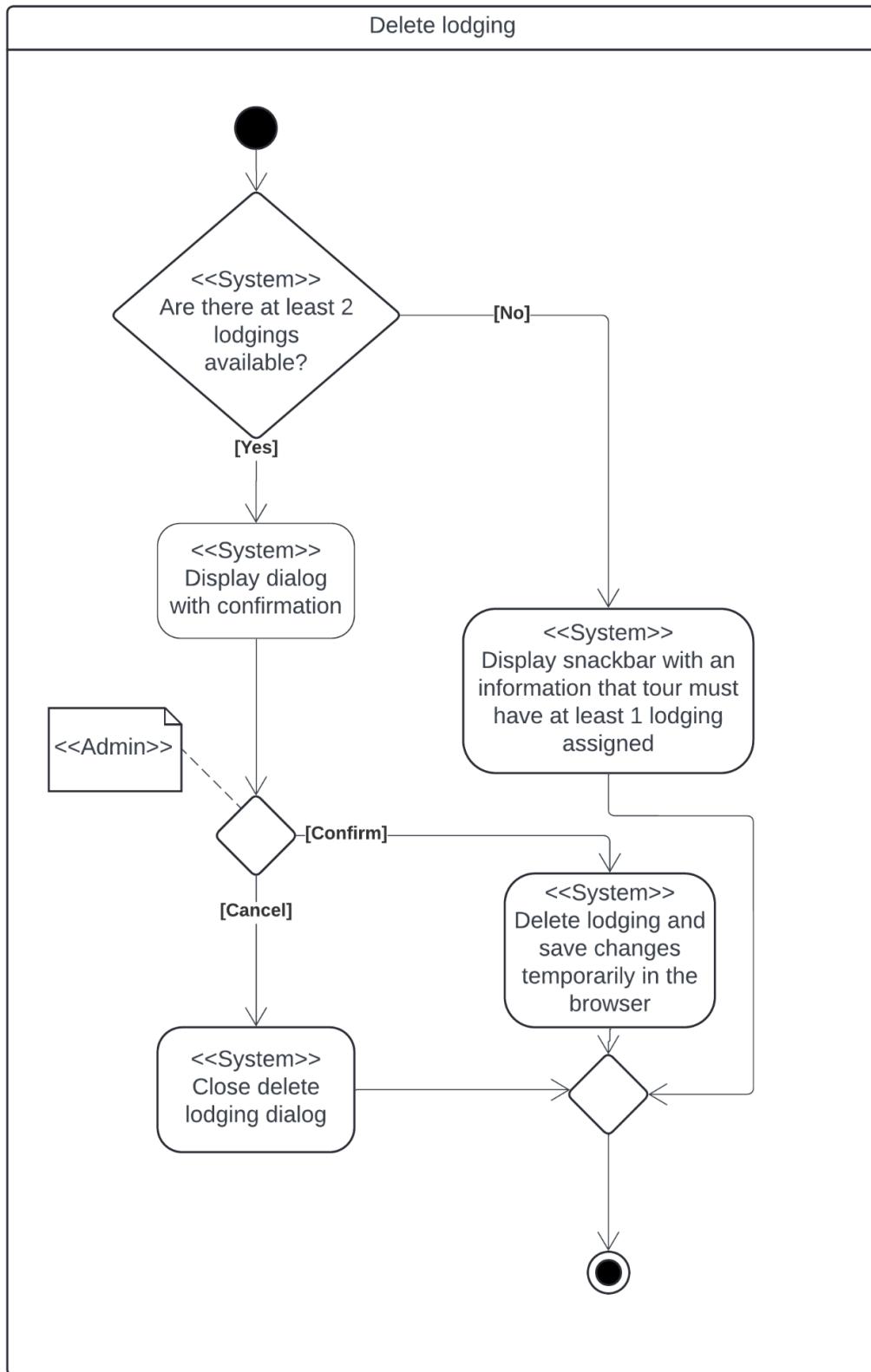
- The tour information is updated in the system.
- Users and customers viewing the tours will see the updated information.

# Activity Diagram/s for Update Tour

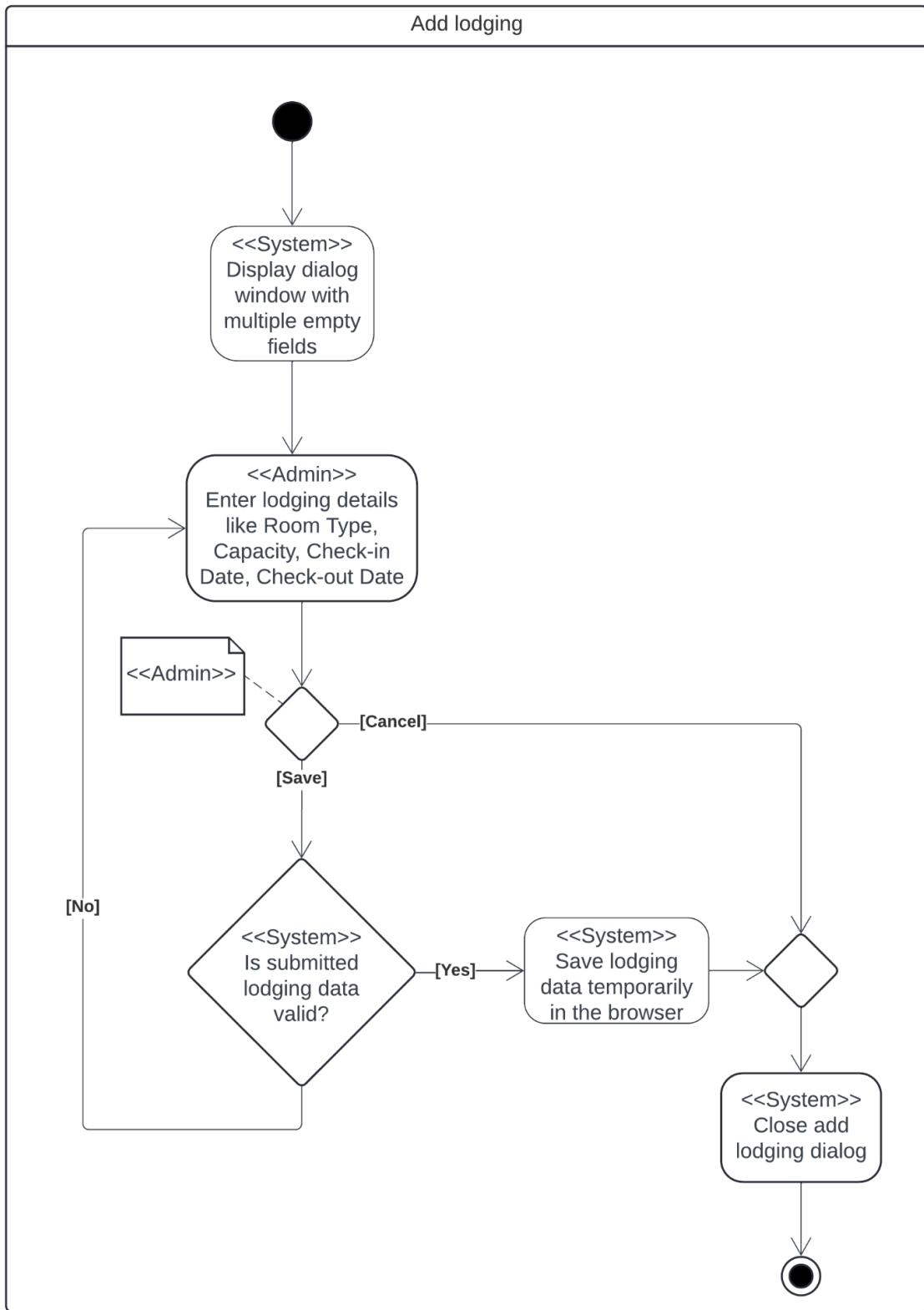
## Main Activity Diagram



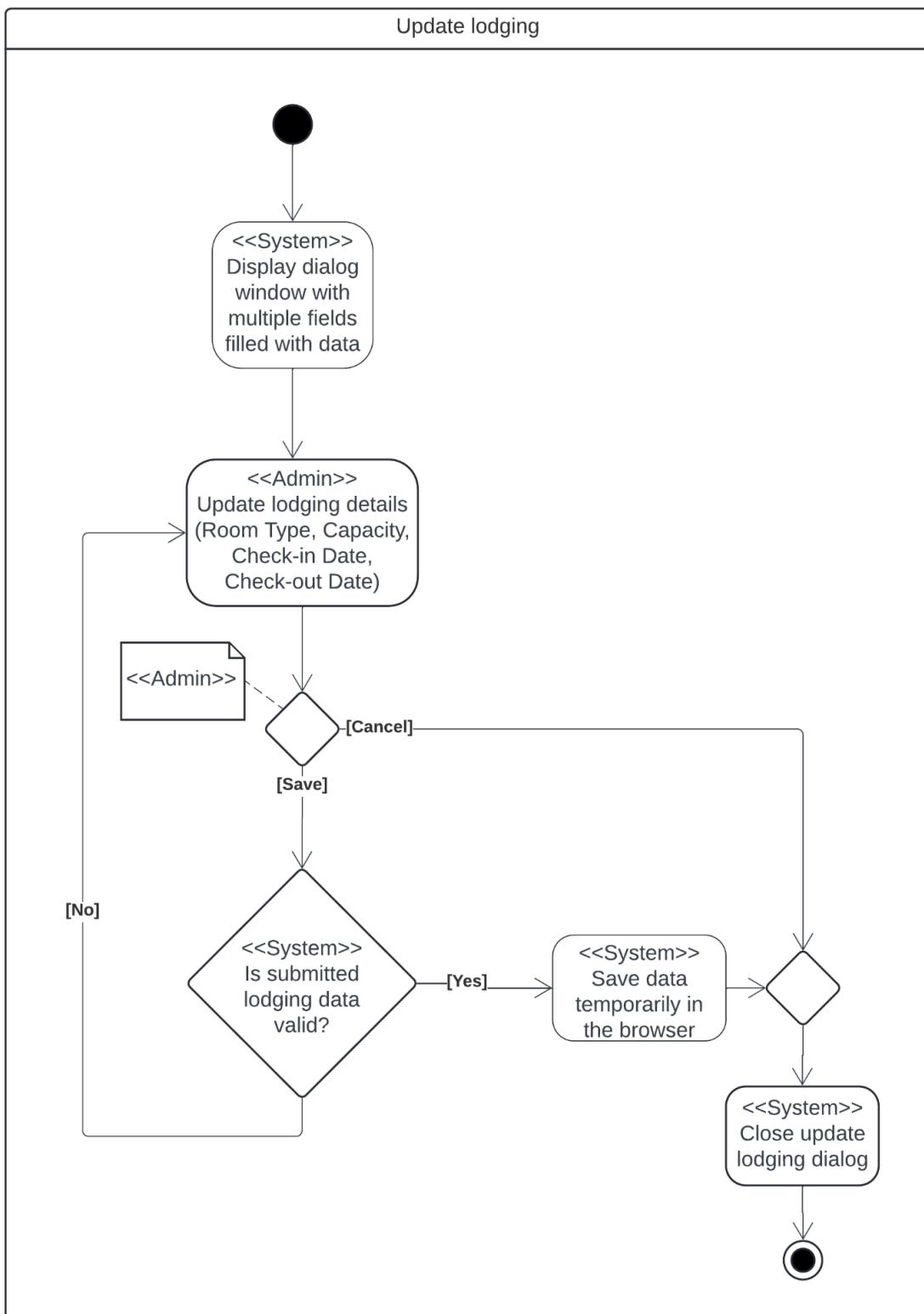
## Delete Lodging



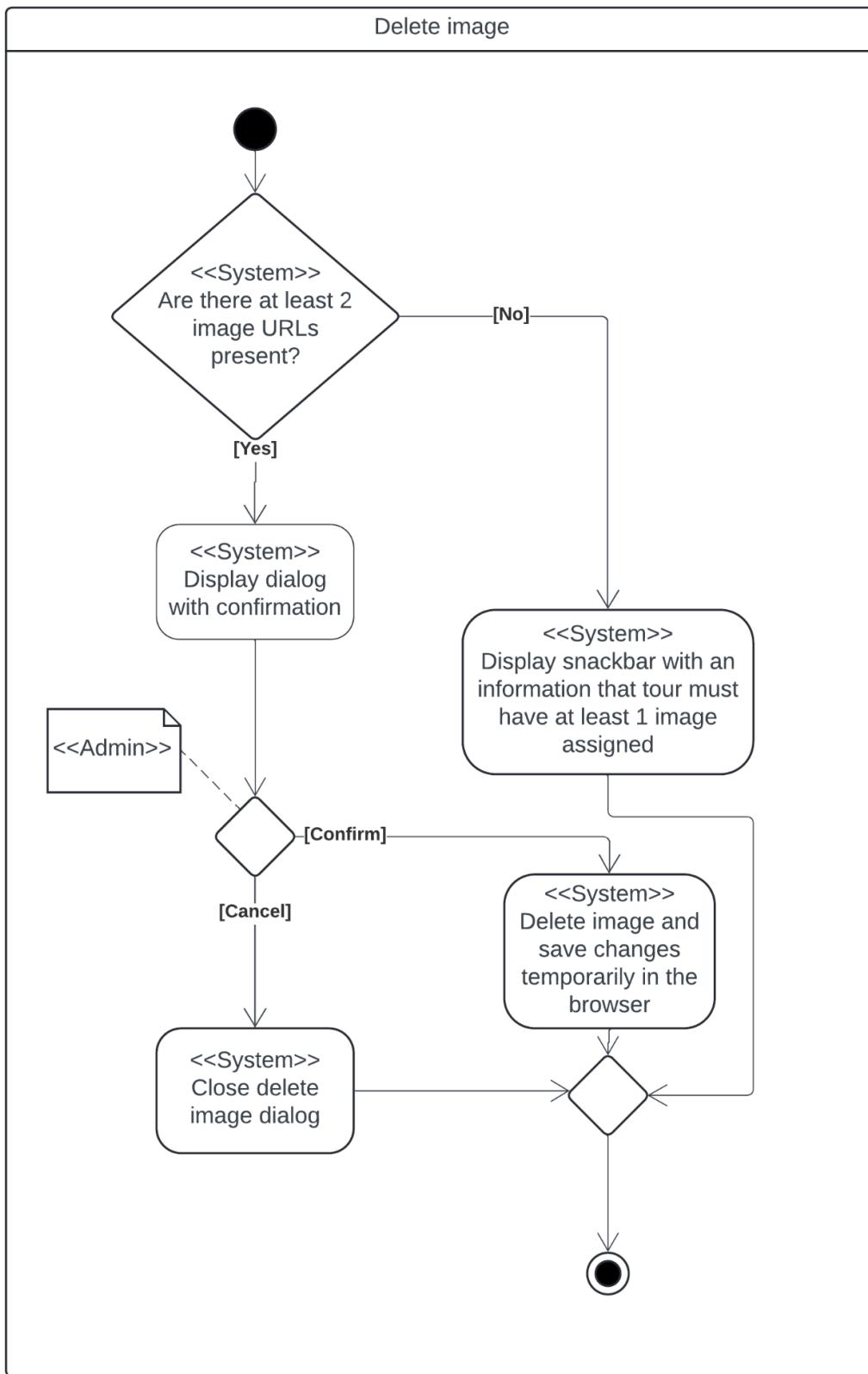
## Add Lodging



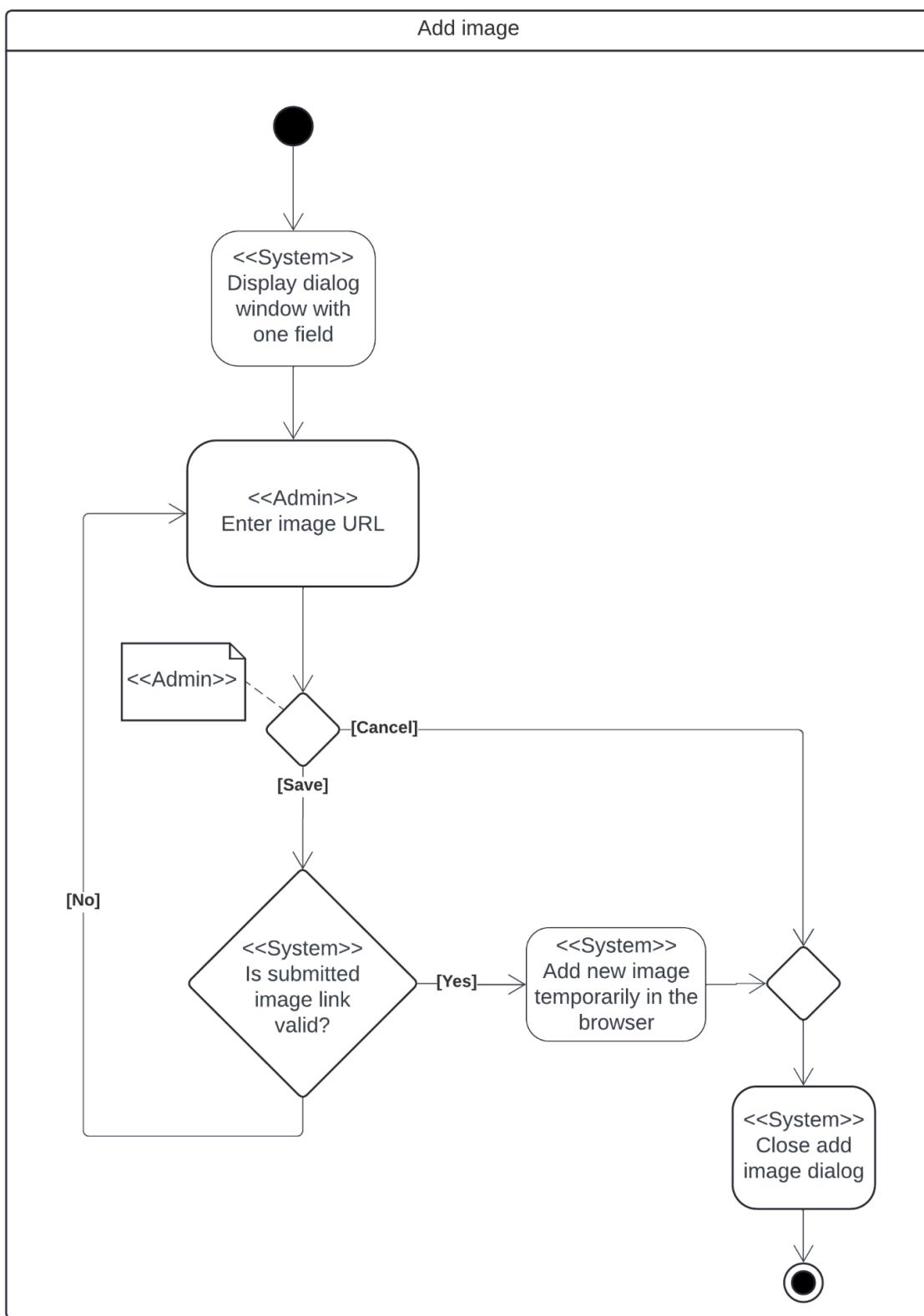
## Update Lodging



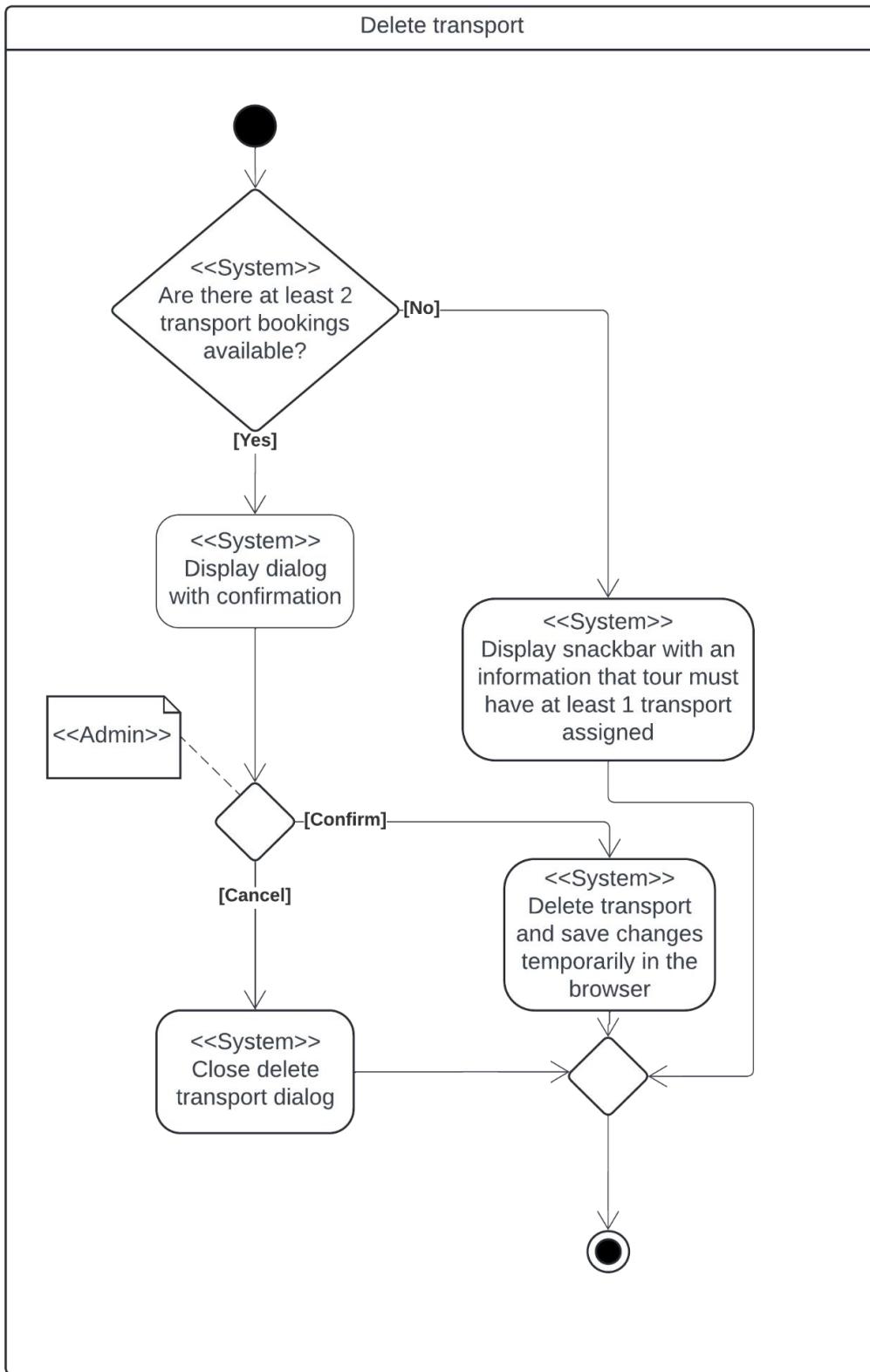
## Delete Image



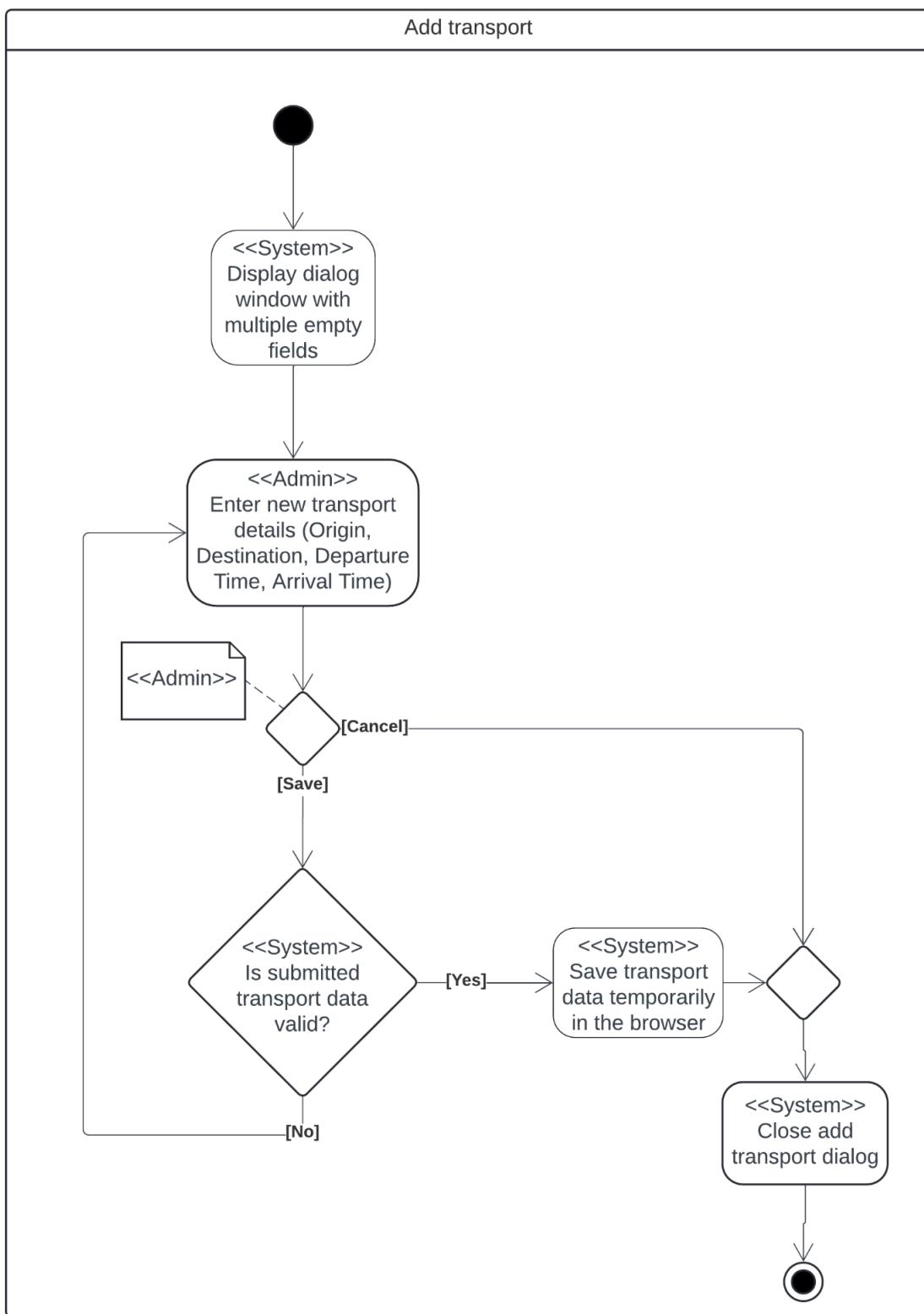
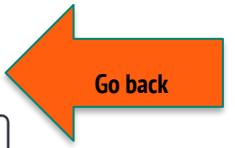
## Add Image



## Delete Transport

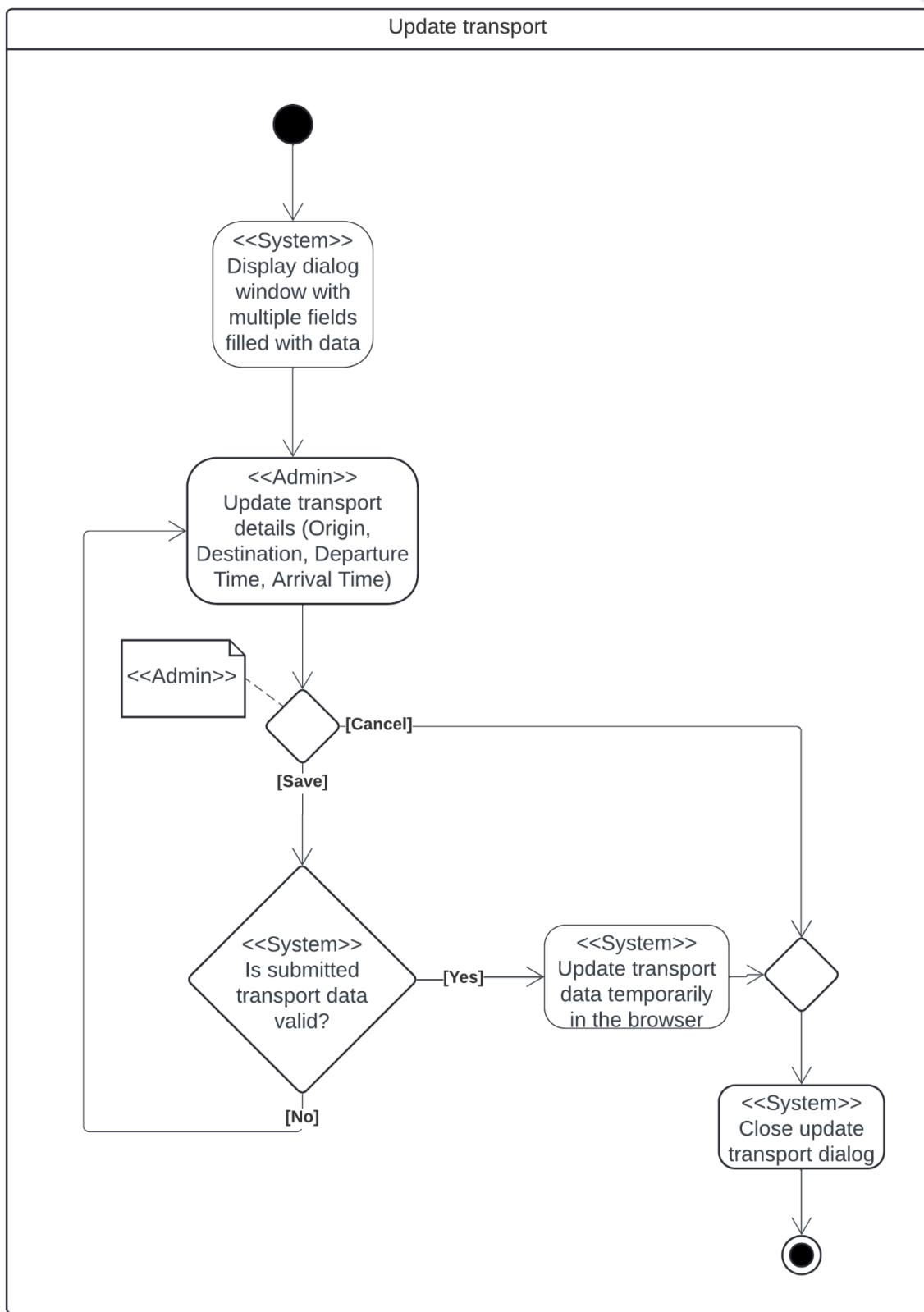


## Add Transport

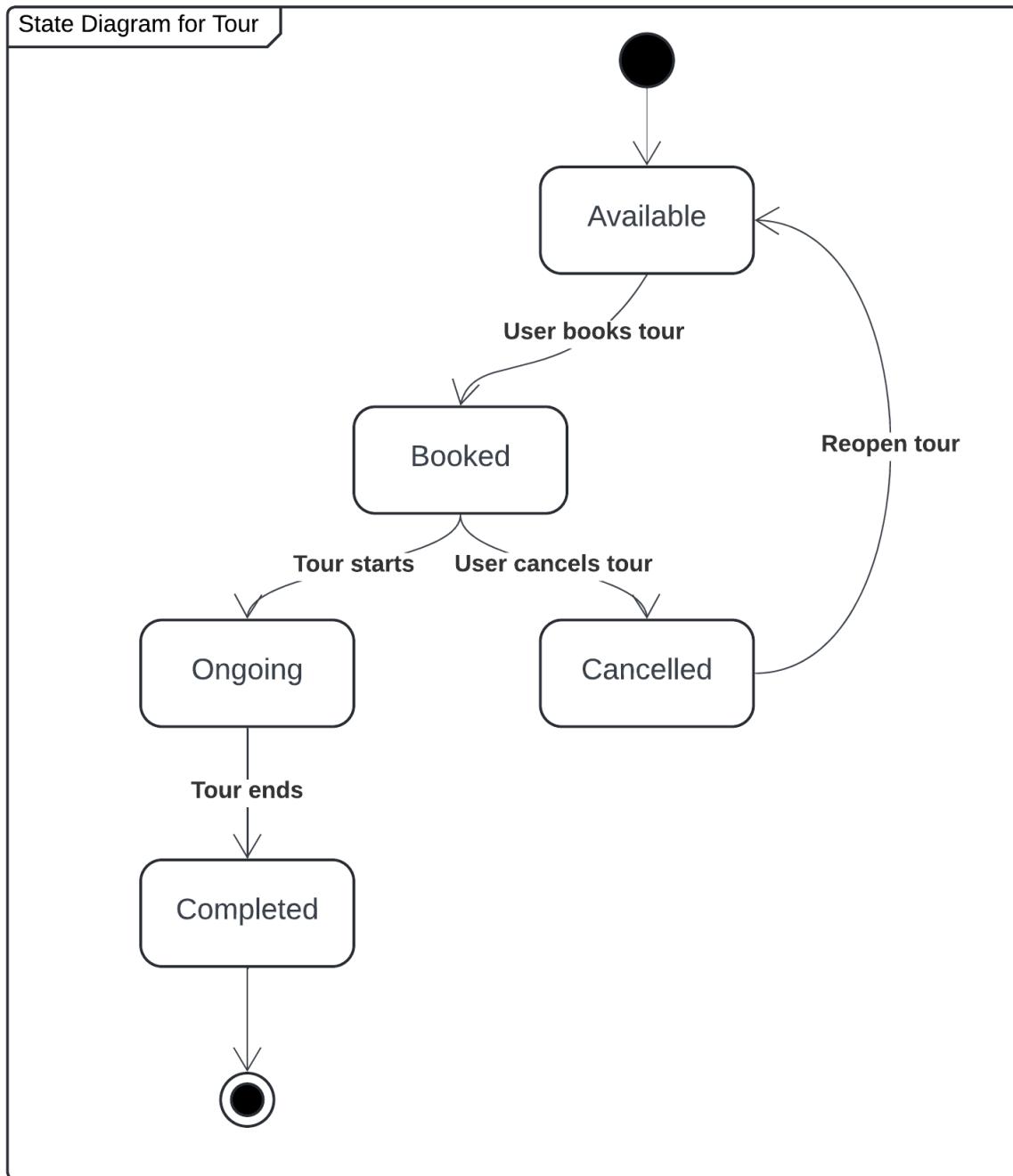


## Update Transport

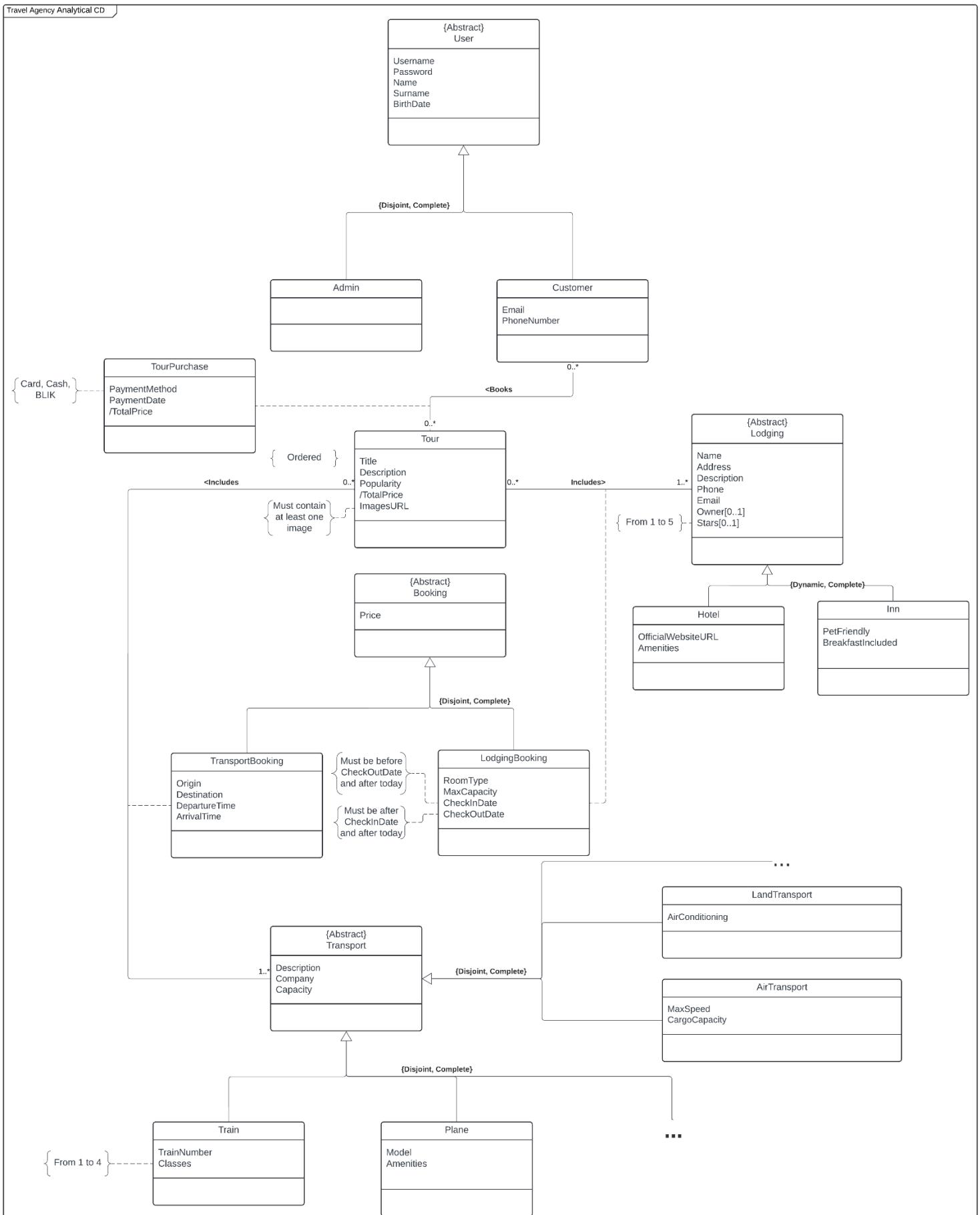
Go back



# State Diagram for Tour



# Analytical Class Diagram



# Dynamic Analysis and Design Decisions

## Activity Diagram/s Analysis

The activity diagram for updating a tour shows the detailed flow of actions when an admin updates tour details. This has several implications on the final class diagram (added new methods):

- GetAllTours(): List<Tour>
- GetTour(int id): Tour
- UpdateTour(Tour tour): bool
- DeleteTour(Tour tour): bool
- AddTour(Tour tour): bool
- AddBooking(Booking booking): bool
- DeleteBooking(Booking booking): bool
- UpdateBooking(Booking booking): bool



Those 3 methods will be overridden by child classes of Booking

## State Diagram Analysis

The state diagram provides a clear view of the different states a tour object can be in during its lifecycle. Creation of state diagram led to the following changes to final diagram:

New methods:

- BookTour(): bool
- GetAllBookedTours(): List<Tour>
- GetAllBookedTours(bool sortByDate): List<Tour>
- CancelTour(): bool

New attributes:

- TourStatus: TourStatus

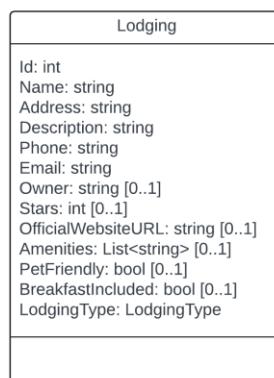
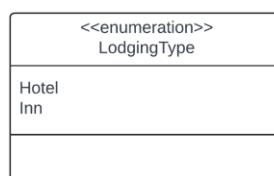
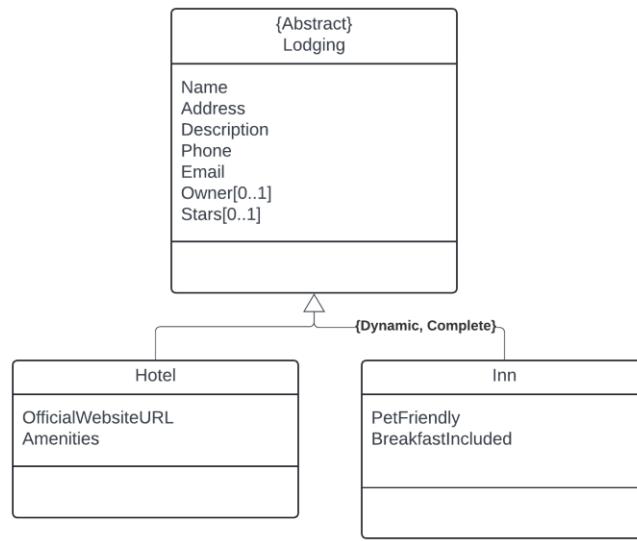
New enumerated type:

- TypeStatus:
  - Available
  - Booked
  - Ongoing
  - Cancelled
  - Completed

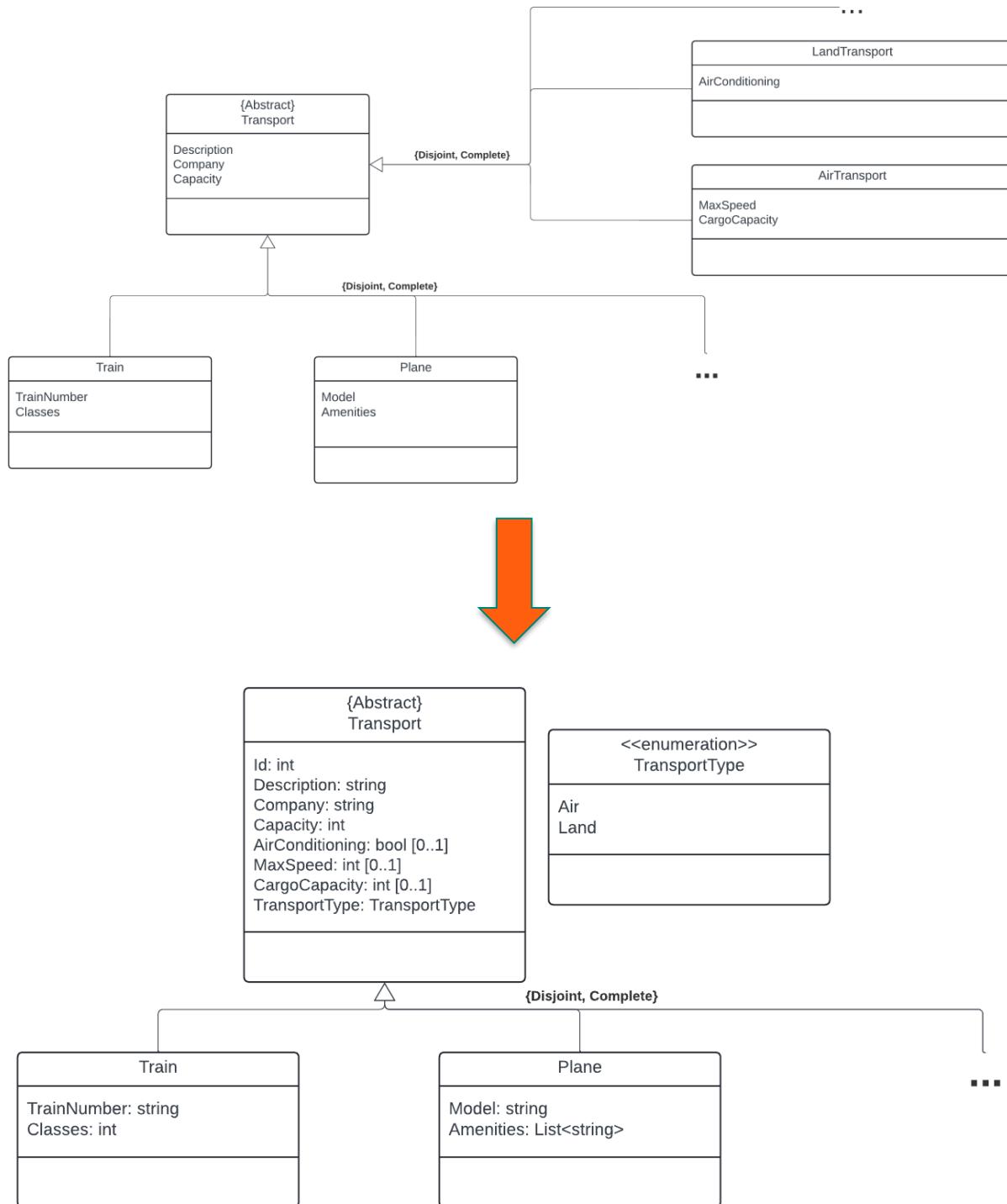
## Design Decisions

Design decisions were made to make sure that the final class diagram will be implementable in C# programming language. To the most important decisions belongs:

### Transformation of dynamic inheritance by flattening the class hierarchy

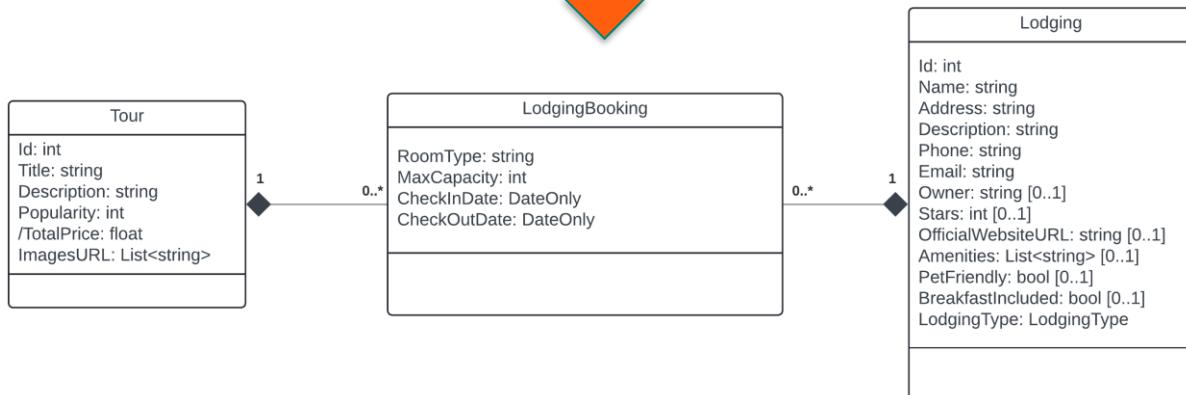
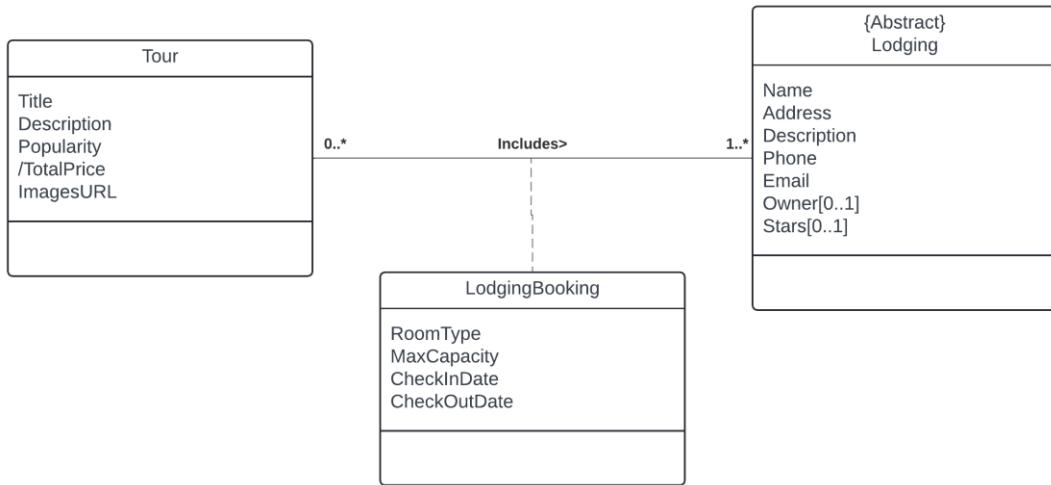


## Transformation of multi-aspect inheritance by flattening class hierarchy



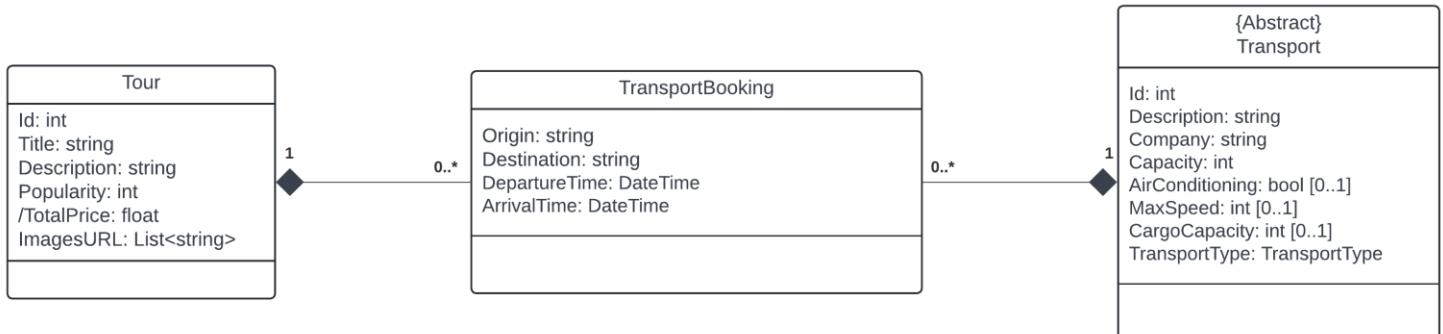
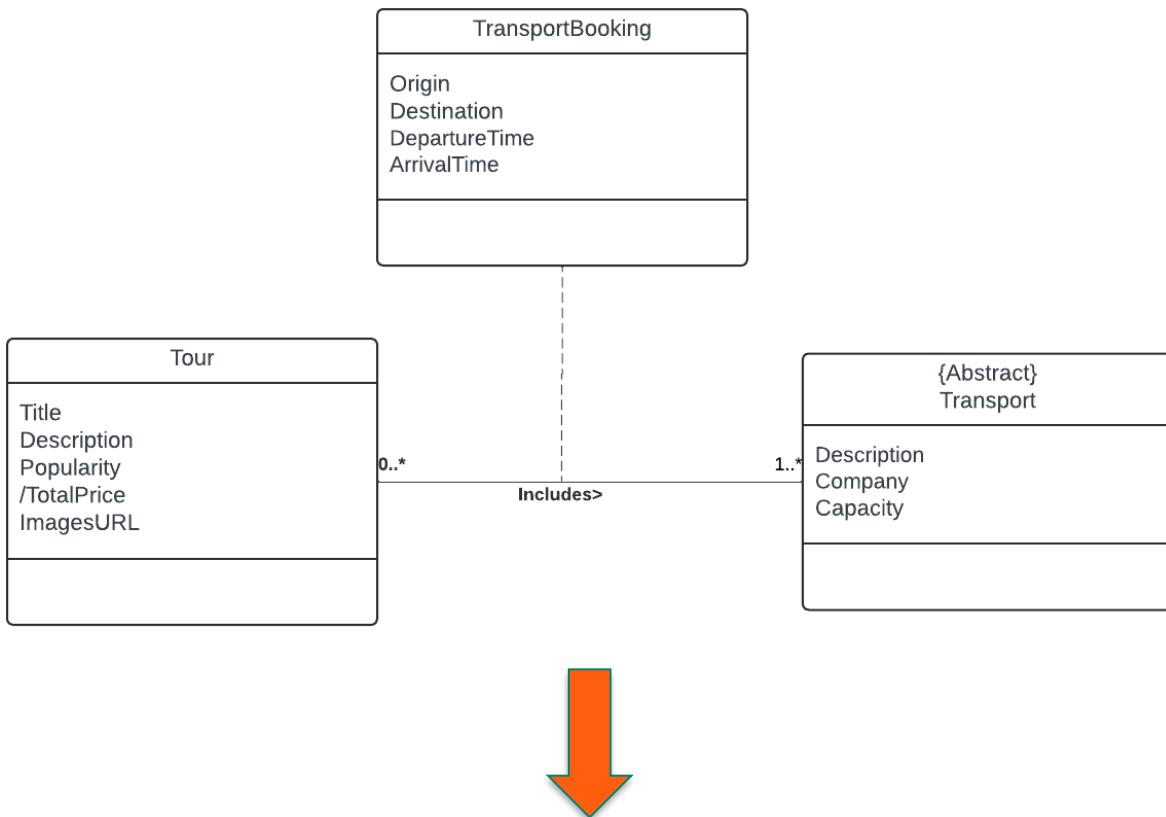
### Transformation of association class was needed in three cases:

- Association class for Tour and Lodging  
1 to 1..\* relationship cannot be directly implemented in C# therefore it was changed to relationship 1 to 0..\*, however constraints on the client side will be added.

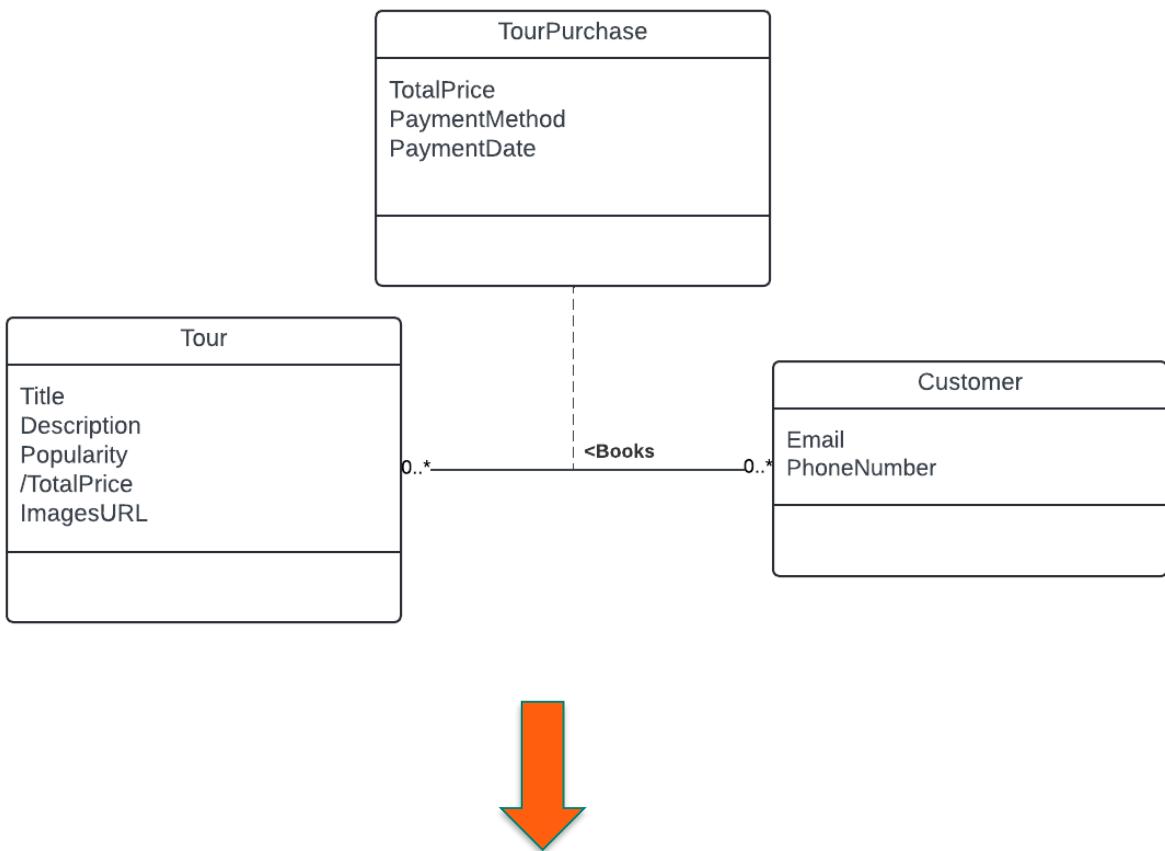


- Association class for Tour and Transport

Same as previously 1 to 1\* relationship will be implemented as 1 to 0..\* relation.



- Association class for Tour and Customer



### Design decision regarding methods in class diagram

All methods that are currently placed inside classes should be moved to appropriate services during the implementation phase. It should be done by following good practices and C# coding standards. Instead of getters and setters, properties will be utilized as specified on both class diagrams.

### Design decision regarding constraints in class diagram

All of the constraints should be implemented by using validation functionalities available in .NET framework.

## Implications on Final Class Diagram

### Enhanced Functionality

The added methods for booking and cancelling tours enhance the functionality of the Tour class and gives more freedom to customers.

The additional methods for managing images, lodging, and transport bookings provide more extensive capabilities for admins.

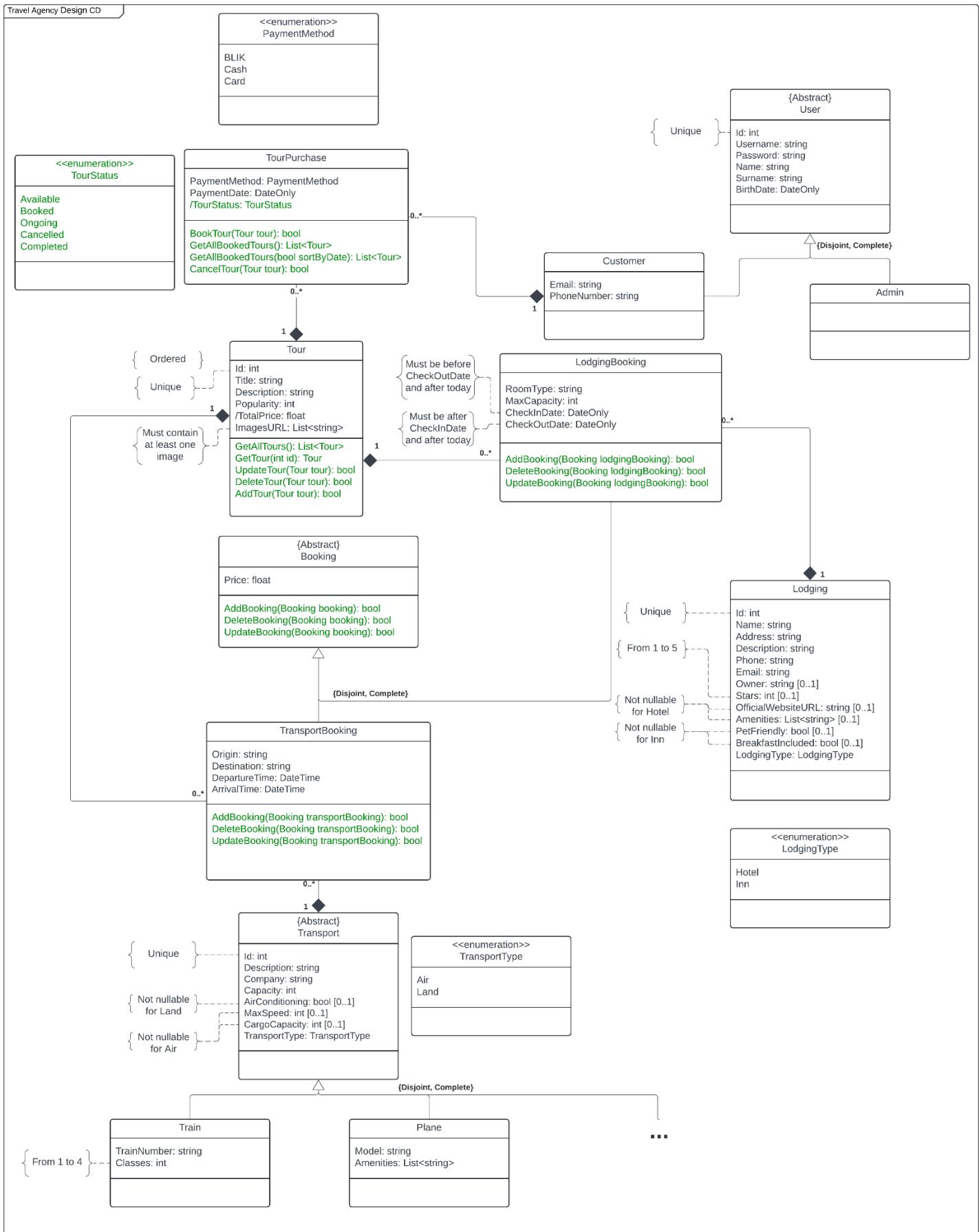
### Improved State Management

The status attribute allows the system to keep track of the tour's lifecycle, making sure that state transitions are handled correctly and the customer is informed. Moreover it can be used to track the status of a tour for time actor that handles notifications.

### Transformations

Transformations were needed to make class diagram achievable in programming language like C#. After those needed changes any developer can implement given specifications.

# Design Class Diagram



# Graphical User Interface

## Update Tour

### Standard Page View

English ▾
 Dream Destinations 
 LOGOUT

### Update Tour

Title\*  
Yellowstone Tour

Description\*  
Explore the breathtaking beauty of Yellowstone National Park, a UNESCO World Heritage site. Experience the geothermal wonders at Old Faithful, witness the grandeur of the Grand Canyon of the Yellowstone, and marvel at the diverse wildlife roaming the park. This tour offers a comprehensive adventure through one of America's most iconic national parks.

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Images\*  

(1)(1)(1)(1)(1)(1)

 ADD IMAGE

---

Transports\*

**Flight from Warsaw, Poland to Jackson Hole, USA**  
 Departure: 6/25/2023 10:00:00 AM  
 Arrival: 6/25/2023 1:00:00 PM
 

[EDIT](#) [DELETE](#)

**Car from Jackson Hole Airport to Yellowstone National Park**  
 Departure: 6/25/2023 2:00:00 PM  
 Arrival: 6/25/2023 4:00:00 PM
 

[EDIT](#) [DELETE](#)

 ADD TRANSPORT

Lodgings\*

**Old Faithful Inn**  
 Room Type: Standard Room  
 Capacity: 4  
 Check-In: 6/25/2023  
 Check-Out: 6/28/2023
 

[EDIT](#) [DELETE](#)

**Mammoth Hot Springs Hotel**  
 Room Type: Suite  
 Capacity: 2  
 Check-In: 6/28/2023  
 Check-Out: 6/30/2023
 

[EDIT](#) [DELETE](#)

 ADD LODGING

 UPDATE TOUR

## Add Image Dialog

Add New Image X

Image URL

SUBMIT CANCEL

## Add/Update Transport Dialog

Add Transport X

Select transport\*  
Enum

Origin\*

Destination\*

Departure Time\*  
 mm / dd / yyyy , - : -- -- CALENDAR

Arrival Time\*  
 mm / dd / yyyy , - : -- -- CALENDAR

SAVE CANCEL

## Add/Update Lodging Dialog

Update Lodging X

Select lodging\*  
Old Faithful Inn

Room Type\*  
Standard Room

Max Capacity\*  
 4 DOWN ARROW

Check-In Date\*  
 06 / 25 / 2023 CALENDAR

Check-Out Date\*  
 06 / 28 / 2023 CALENDAR

SAVE CANCEL

# Extra GUI Components

## Home Page – User View

English ▾

Dream Destinations

LOGIN

### Lower Antelope Canyon

Discover the lesser-traveled depths of Antelope Canyon on a walking tour through the lower portions of this colorful sandstone slot canyon.

### Niagara Falls

Discover the highlights of several cities in the Northeast on this 4-day sightseeing tour by bus or minivan from Boston.

### Grand Canyon

Ideal for travelers short on time, this tour covers the Grand Canyon's South Rim in one day of sightseeing from Las Vegas.

### Horseshoe Bend

Journey to Horseshoe Bend on a guided tour that includes all your entrance fees, round-trip transport from Flagstaff, and a picnic lunch.

### Lake Powell

This man-made reservoir, located in northern Arizona and southern Utah, is a great spot for travelers seeking nature and outdoor adventure.

### Yellowstone Tour

Avoid crowds and maximize your wildlife-viewing experience on this private Yellowstone tour led by a naturalist guide.

### Yosemite Valley

Immerse yourself in the majestic beauty of Yosemite National Park on this 2-day overnight adventure from San Francisco. Great way to spend holidays.

### The Narrows

Explore the Incredible Narrows portion of Zion National Park without the risk of getting lost on this private full-day tour. A fun day out for travelers.

< 1 2 3 4 >

## Login Page

English ▾

Dream Destinations

**Login**

Username

Password

LOG IN

Don't have an account?

REGISTER

## Register Page

English ▾

Dream Destinations

**REGISTER**

Name Surname

Username Email

Password Confirm password

Phone number E-mail

Date of birth  
6/11/2024

REGISTER

Already registered?

LOG IN

## Booked Tours Page

English ▾

Dream Destinations

LOGOUT

### Booked Tours

A photograph showing the interior of Lower Antelope Canyon, featuring vibrant orange and red sandstone rock formations with intricate, layered textures.

**Lower Antelope Canyon**

25 Jun 2023 - 28 Jun 2023

\$2,769.30

[VIEW DETAILS](#)

A photograph of Niagara Falls, with a small red boat visible in the misty spray at the base of the falls.

**Niagara Falls**

20 Aug 2023 - 27 Aug 2023

\$4,162.00

[VIEW DETAILS](#)

A photograph of the Grand Canyon at sunset, showing the sun's rays illuminating the deep red and orange rock walls of the canyon.

**Grand Canyon**

15 Sep 2023 - 20 Sep 2023

\$3,500.00

[VIEW DETAILS](#)

An aerial photograph of Horseshoe Bend, showing the Colorado River flowing through a narrow, U-shaped cut in the red rock cliffs.

**Horseshoe Bend**

10 Jul 2023 - 17 Jul 2023

\$2,999.99

[VIEW DETAILS](#)

< 1 2 3 4 >

## Booked Tour Details

English ▾

Dream Destinations ▾

LOGOUT

### Booked Tour Details



#### Lower Antelope Canyon

Dates: 25 Jun 2023 - 28 Jun 2023

Total Price: \$2,769.30

#### Payment Information

Payment Method: Card

Payment Date: 25 Jun 2023

[BACK TO BOOKED TOURS](#)

[CANCEL](#)

# Sources and References

## Diagrams

Diagrams were done personally using Lucidchart web app.

- [Use Case Diagram](#)
- [Activity Diagram/s](#)
- [State Diagram](#)
- [Transformations](#)
- [Analytical Class Diagram](#)
- [Design Class Diagram](#)

## Images

Images were taken from [TripAdvisor](#) website:

- <https://media-cdn.tripadvisor.com/media/attractions-splice-spp-720x480/07/7f/67/da.jpg>
- <https://dynamic-media-cdn.tripadvisor.com/media/photo-o/0d/46/b6/9c/20161010-133807-largejpg.jpg>
- <https://media-cdn.tripadvisor.com/media/attractions-splice-spp-720x480/07/bb/db/35.jpg>
- <https://dynamic-media-cdn.tripadvisor.com/media/photo-o/17/56/c1/06/horseshoe-bend-az.jpg>
- <https://dynamic-media-cdn.tripadvisor.com/media/photo-o/0e/91/5b/02/morning-at-the-lake-powell.jpg>
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- <https://media-cdn.tripadvisor.com/media/attractions-splice-spp-720x480/0f/2c/fb/9e.jpg>
- <https://dynamic-media-cdn.tripadvisor.com/media/photo-o/0b/eb/d2/10/grand-canyon-of-yellowstone.jpg>
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