Railway Reservation System

Course Title:System Analysis & Design Project
Course Code: SE 231

SUBMITTED BY : **Jahanara Islam**

ID: 192-35-2858

Section: B, 29th Batch

Department of Software Engineering,

Daffodil International University

SUBMITTED TO :**Mr. Khalid Been Badruzzaman Biplob**
Lecturer
Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

Table of Contents Table of
Contents..... List of contents

Abstract

In this paper, I define the project is about Railway Management. It's all about to solve the current problems of railway management. Through this you can check the schedule of trains from departure to arrival time and the stations from which the train has to pass by. You can reserve seats online, check the availability of seats also you can discriminate seats for male and females. Through this we can improve our system and our file system. File system will be finished and the system becomes online. By using databases I can arrange data properly according to our requirements.

Chapter 1

PROJECT PROPOSAL

1.1. Overview

1.1.1. Background

Railway reservation system is the most important way of transportation. It is very useful for business and trade purposes. The background of the railway management system is in 13 May 1861 the first railway system line was started for people and public transportation.

We find the problems in the current railway management system that we have not appropriate records of passengers and employees, though we thought that there should be something that can make records of all these things so we made our system more fast and easy to use.

1.1.2. Goals and Objectives

Our main objectives and goals of this project are railway reservation systems to make the railway system more efficient, easier, comfortable and reliable. This project is only for the use of administrators. In this project we will come to know how technology systems can solve our problems. The main goals of this project is to manage the arrivals and departures of trains on time, to manage the seats booking, buy tickets, buy pre-booked seats and also to manage the cargo tracking.
The objectives of this development efforts are:

- User will fill up a form which contains information about the user.
- Username and password for login to the system.
- It provides a new environment to make reservations.
- To provide an avenue for customers to get their tickets in a more convenient way.
- To regain control of the railway tickets sales to avoid sca lping and overselling of tickets.

- To implement a prototype of o scaled down version of the final system to test the solution and further develop requirements.
-
- To collect statistics in a more efficient manner for future railway development and construction.

- To increase efficiency of the railway.

The users will be-

1. System Administrator
2. User

1.1.3. Scope

The system will provide us electronic media content (it may be in the form of printed output) of the railway reservation system in Bangladesh. The system will be user friendly. This software is designed to aid the calculated planning. It will be more cost effective compared to the current non electronic media content of the reservation system.

The objectives of this development efforts are:

- It provides a new environment to make reservations.
- To provide an avenue for customers to get their tickets in a more convenient way.
- To regain control of the railway tickets sales to avoid scalping and overselling of tickets.
- To implement a prototype of a scaled down version of the final system to test the solution and further develop requirements.

- To collect statistics in a more efficient manner for future railway development and construction.
- It provides the printing of tickets.
- To increase efficiency of the railway.

1.1.4. Assumptions and Constraints

It is assumed that the user is comfortable with the computer. The System Administrator should know how to use a digital version of a ticket reservation. The users who are registered must have good knowledge on web surfing.

The user interface is in English as a result people lacking in English skill will face difficulty in using the system. Login and password is used for identification of users and there is no facility for guests.

1.1.5. Dependencies and Risks

The user must have web access in order to use the system. The main risk behind implementing the project is security. If somebody hacks the system then it will be a total disorder. So during development it will be one of our major concerns. Another concern is having common bugs such as the common users are having the same functionalities as the system admin.

1.2. Project Delivery

1.2.1 Deliverables

The following contents will be delivered with the project:

a) Project CD
   i. Project Demo
   ii. User manual along with Tutorial

b) Documentation

1.2.2 Timescales

The time frame for implementing the project is given in Figure 1.2.1.

1.2.3 Work Distribution

The work distribution of the project is given in Table 1.2.1.

1.2.4 Project Resources

The resources required to finish the project is given in Table 1.2.2.

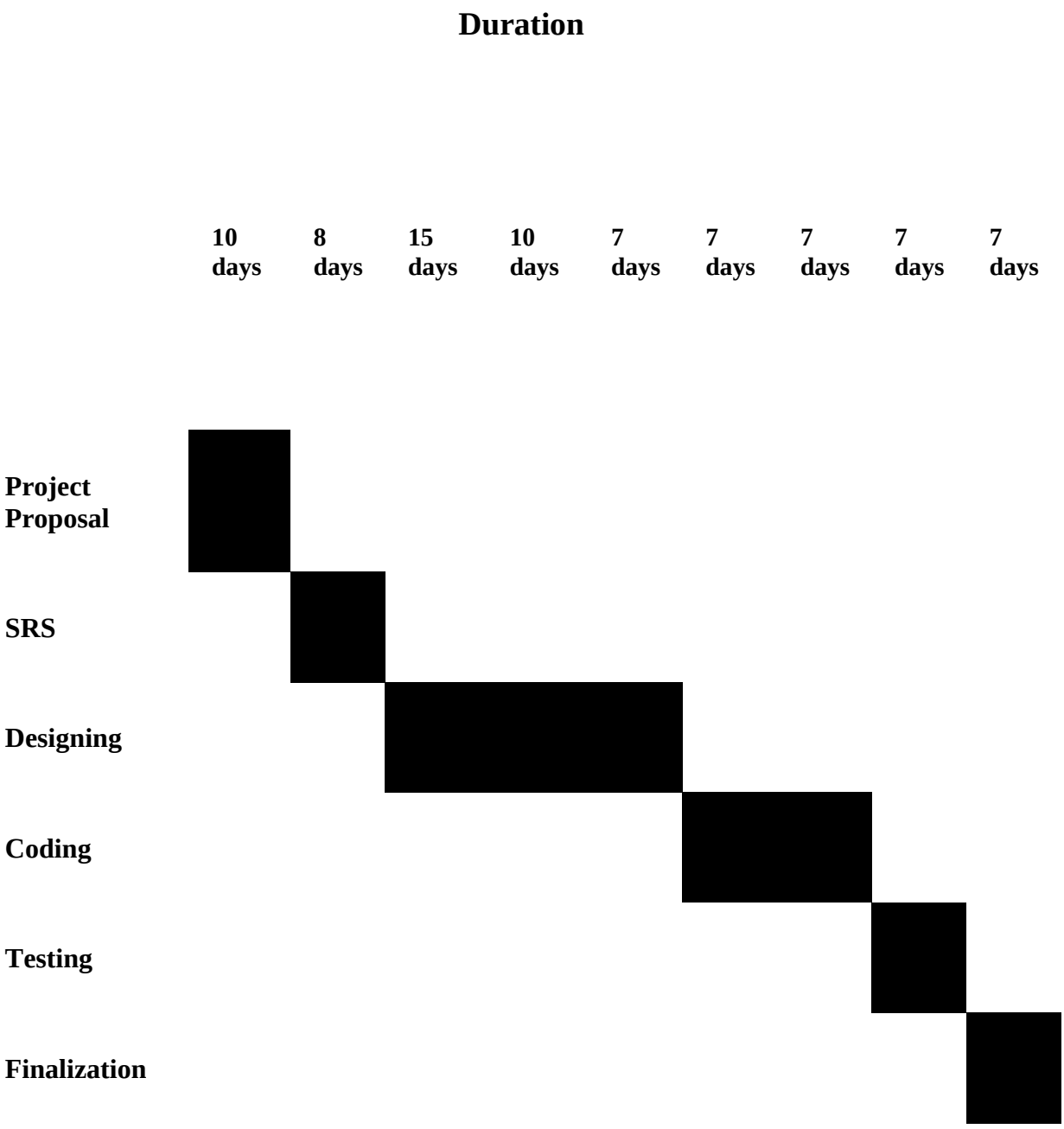


Figure 1.2.1: Time frames for project implementation

Project Proposal	**Jahanara Islam**	**7days**
Software Requirement Specification	**Jahanara Islam**	**7 days**
Software Design	**Jahanara Islam**	**21 days**
Coding	**Jahanara Islam**	**14 days**
Software Testing	**Jahanara Islam**	**7 days**
Project Finalization	**Jahanara Islam**	**7 days**

Table 1.2.1 Work Distribution

Hardware Requirements		
Processor	**RAM**	**Hard Disk Space**
Pentium II or higher	**64 Mb or higher**	**128 Mb or higher**
Software Requirements		
Operating System		**Database**
For users no specific OS is required. The server machine must have Windows XP/Vista/7 along with .NET framework 4 and IIS.		**SQL Server 2008**

Table 1.2.2 Project Resources

Chapter 2

SRS

Requirement Specification

The complete requirement specification based on the elicitation process is described in this section.

Functional Requirements

The Functional Requirements Specification is designed to be read by a general audience. Readers should understand the system, but no particular technical knowledge should be required to understand the document.

SRS001	Login and registration
Description	After entering unlink any internet browser in the software index page the user must have to register himself first.After every time of access he has to big-in-first before entering the main page.
Stakeholder	User,Administrator

SRS002	List of reservation and cancellation on intimation,searching route
Description	After login, customers can search the details and reserve the tickets and cancel.
Stakeholder	User ,Admin

SRS003	Select button
Description	After finding the expected route customer can select the on that to find the details.
Stakeholder	User ,Admin

SRS004	Match result
Description	After specification of the route the match will soon .
Stakeholder	User, Admin

SRS005	View route details
Description	Admin, as well as customers, can view the route.
Stakeholder	Admin,customers

SRS006	Email notification
Description	After reservation a notification will be sent to the customer by the admin.
Stakeholder	Admin,customer.

SRS007	Reservation and Delete reservation
Description	After the reservation is confirmed, the customer can delete the reservation again if he wants.
Stakeholder	Admin ,customer

SRS008	Payment method
Description	After the reservation will be able to make their payment through Bkash,cash & card.
Stakeholder	User, Administrator

SRS009	Logout
Description	When the work is done, the customer can log out if he wants or automatically log out after 30 minutes in this system.
Stakeholder	Admin,user

Non-functional Requirements

Nonfunctional Requirements define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs. They ensure the usability and effectiveness of the entire system.

1. Performance Requirements:

A requirement that specifies a performance characteristic that a system or system or system component must possess for example, speed, accuracy, frequency.

2. Dependability Requirements:

The flexibility of current frameworks encourage system architects to enable reconfiguration mechanisms that refocus the available, safe resources to support the most critical services rather than over-provisioning to build failure-proof systems. Therefore, these requirements are essentials.

SRS001	The system must be available 24x7
Description	• The system must be available 24 hours in a day. • The system must be updated regularly.
Stakeholder	Admin,user

3. Maintainability and Supportability:

Supportability is the degree to which system design characteristics and planned logistics resources meet system requirements. Supportability is the capability of a total system design to support operations and readiness needs throughout the life-cycle of a system at an affordable cost.

4. Security Requirements:

There are no access requirements beside those that have been outlined in the below:

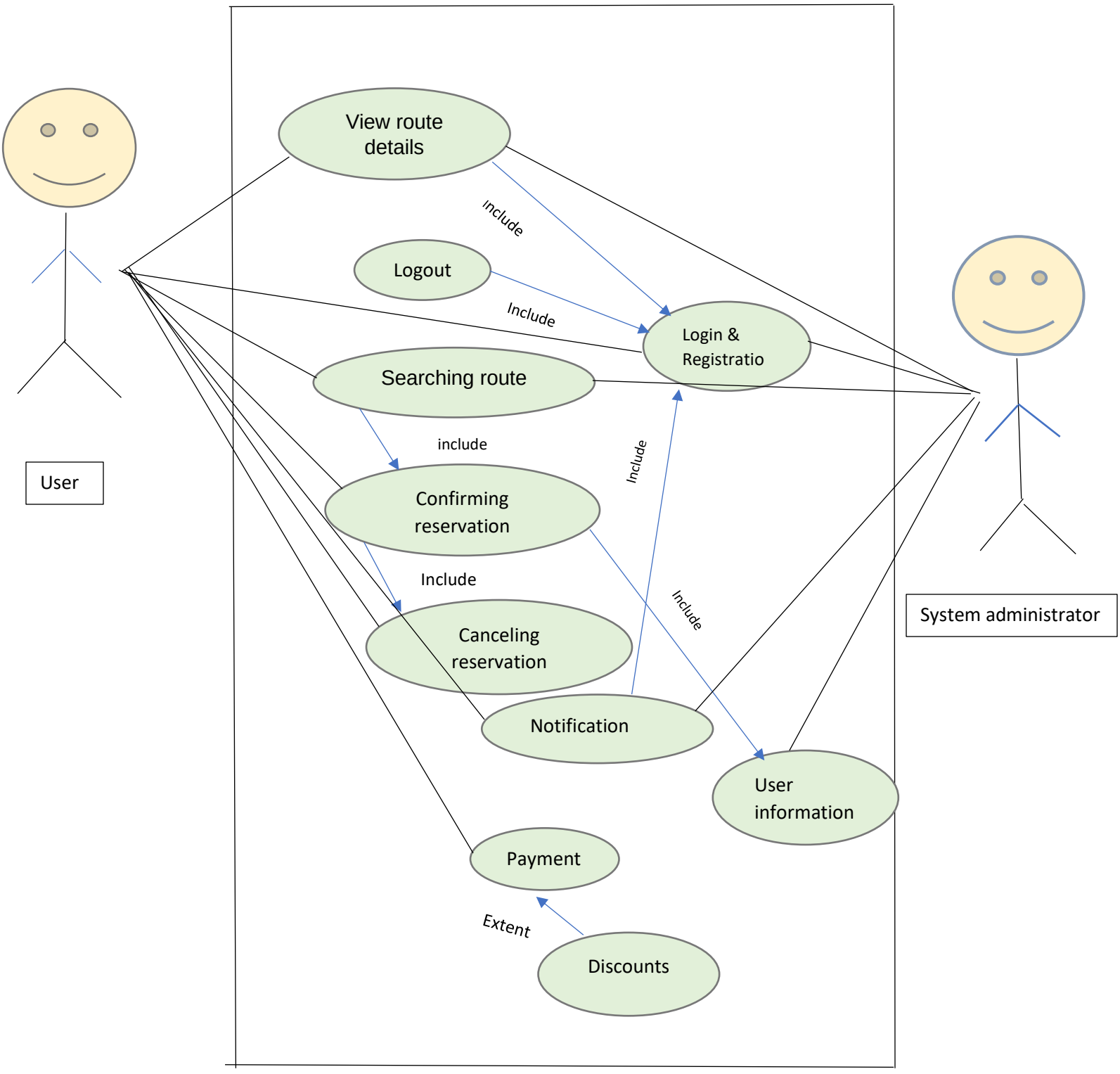
- The software must validate all user input to ensure it does not exceed the size specified for that type of input.
- The server must authenticate every request accessing the restricted Web pages.
- After authenticating the browser, the server must determine whether that browser is authorized to access the requested restricted Web pages.
- The system must have security controls to protect against denial-of-service attacks
- The system must encrypt sensitive data transmitted over the Internet between the server and the browser.

To get access to this system or a specific module the system must provide a central authentication mechanism. In order to prevent anyone from being stolen all users' passwords must be encrypted in the hash process.

Chapter 3

USE CASE

Use Case



Railway Reservation System

Chapter 4

USE CASE DESCRIPTION

Use Case	Login & Registration	
Goal	User successfully enter the railway reservation system web home page.	
Preconditions	The user information must be in server database. And the user given their right details to access the system.	
Success End Condition <the state of the world upon successful completion>	User entered the home page.	
Failed End Condition	User given wrong information about their account. Cause of server down user couldn't login into the system.	
Primary Actors: **Secondary Actors:**	Customer System administrator.	
Trigger	Click on Login button.	
Description / Main Success Scenario	**Step**	**Action**
	1	User click on the login / sing in option.
	2	System asks for user username/email and password.
	3	User enter the username/email and password.
	4	System check the user authentication and display the home page.
Alternative Flows	Step	Branching Action
	1	The system may notify the user in case any incorrect information is entered.
	2	If the user not registered, system will open the registration page for the user.
Quality Requirements	**Step**	**Requirement**
	1	The client will be able to see home page within few seconds.
	2	The system pop up message if the user click on the wrong option.

Use Case	Confirming reservation	
Goal	User can directly confirm the booking ticket. Expects good services.	
Preconditions	User must have to login first in to the system.	
Success End Condition	Customer has booked the ticket.	
Failed End Condition	Customer has not booked the ticket.	
Primary Actors: **Secondary Actors:**	Customer System administrator.	
Trigger	Click on confirming ticket button.	
Description / Main Success Scenario	**Step**	**Action**
	1	User request to the system for booking ticket.
	1.1 1.2	User calls in-via phone Client submits web booking form, etc.
	2	System captures user name, address, requested ticket /all info.
Alternative Flows	**Step**	**Branching Action**
	1	Renegotiate booking.
	2	Buyer cancel booking.
Quality Requirements	**Step**	**Requirement**
	1	Get confirmation massage from system within 30seconds.
	2	The system pop up message if the user click on the wrong option.

Use Case	Canceling reservation	
Goal<a longer statement of the goal in context if needed>	User issues request directly to the system, expects smoothly cancel execution.	
Preconditions <what we expect is already the state of the world>	The user will have to confirm a ticket.	
Success End Condition	Customer has booked the ticket.	
Failed End Condition	System has not return money and cancelled booking. User has not received money.	
Primary Actors: **Secondary Actors:**	Customer System administrator.	
Trigger <the action upon the system that starts use case>	Click on the cancelling button.	
Description / Main Success Scenario <the steps of the scenario from trigger to goal delivery and any clean up after>	**Step**	**Action**
	1	User calls in with a cancelled request.
	1.1 1.2	User calls in-via phone User sends web massage, etc.
	2	System captures cancel request. System cancelled the requested booking ticket
Alternative Flows	**Step**	**Branching Action**
	1	System is not cancelling requested booking ticket.
	2	Renegotiate cancelled ticket.
Quality Requirements	**Step**	**Requirement**
	1	The user should confirm cancelled by clicking cancelled button within 10 seconds.
	2	The system pop up message if the user click on the wrong option.

Use Case	Searching route	
Goal <a longer statement of the goal in context if needed>	User directly searching packages and the company employee also can search info, expects find info easily and smooth execution.	
Preconditions <what we expect is already the state of the world>	User/admin have to login first in to the system.	
Success End Condition <the state of the world upon successful completion>	Admin/user employee has searching results.	
Failed End Condition	System has not sent the searching information, has not got the search information.	
Primary Actors: **Secondary Actors:**	Customer System administrator.	
Trigger	Click on the search button.	
Description / Main Success Scenario <the steps of the scenario from trigger to goal delivery and any clean up after>	**Step**	**Action**
	1	User or admin with a searching info request.
	2	System captures clients requested searching info.
	3	System gives user or admin information on which they were searching.
	4	Click on button that for details.
	5	System display the information to User.
Alternative Flows	**Step**	**Branching Action**
	1	System's out of the searching information.
	2	Renegotiate searching.
Quality Requirements	**Step**	**Requirement**
	1	Should select desire one within 5 seconds.

Use Case	Payment	
Goal <a longer statement of the goal in context if needed>	Use will send the payment and the company will get money.	
Preconditions	The User will have to confirm a ticket.	
Success End Condition <the state of the world upon successful completion>	User has good and secure tour ticket. System has money for the services.	
Failed End Condition <the state of the world if goal abandoned>	System has not booked ticket after received money. User has not spent the money.	
Primary Actors:	Customer	
Trigger <the action upon the system that starts use case>	Click on the payment button.	
Description / Main Success Scenario <the steps of the scenario from trigger to goal delivery and any clean up after>	**Step**	**Action**
	1	User send confirm booking request.
	2	System captures client confirm booking ticket request.
	3	System gives a confirmation massage to user.
	4	User signs for order.
	5	System creates requested packages list with price.
	6	Customer pays by cash, bKash, and bank account online transaction.
Alternative Flows <a: condition causing branching>	**Step**	**Branching Action**
	1	System is out of one of the available ticket.
	2	Renegotiate booking.
Quality Requirements	**Step**	**Requirement**
	1	The system should send invoice within 50 seconds to user.

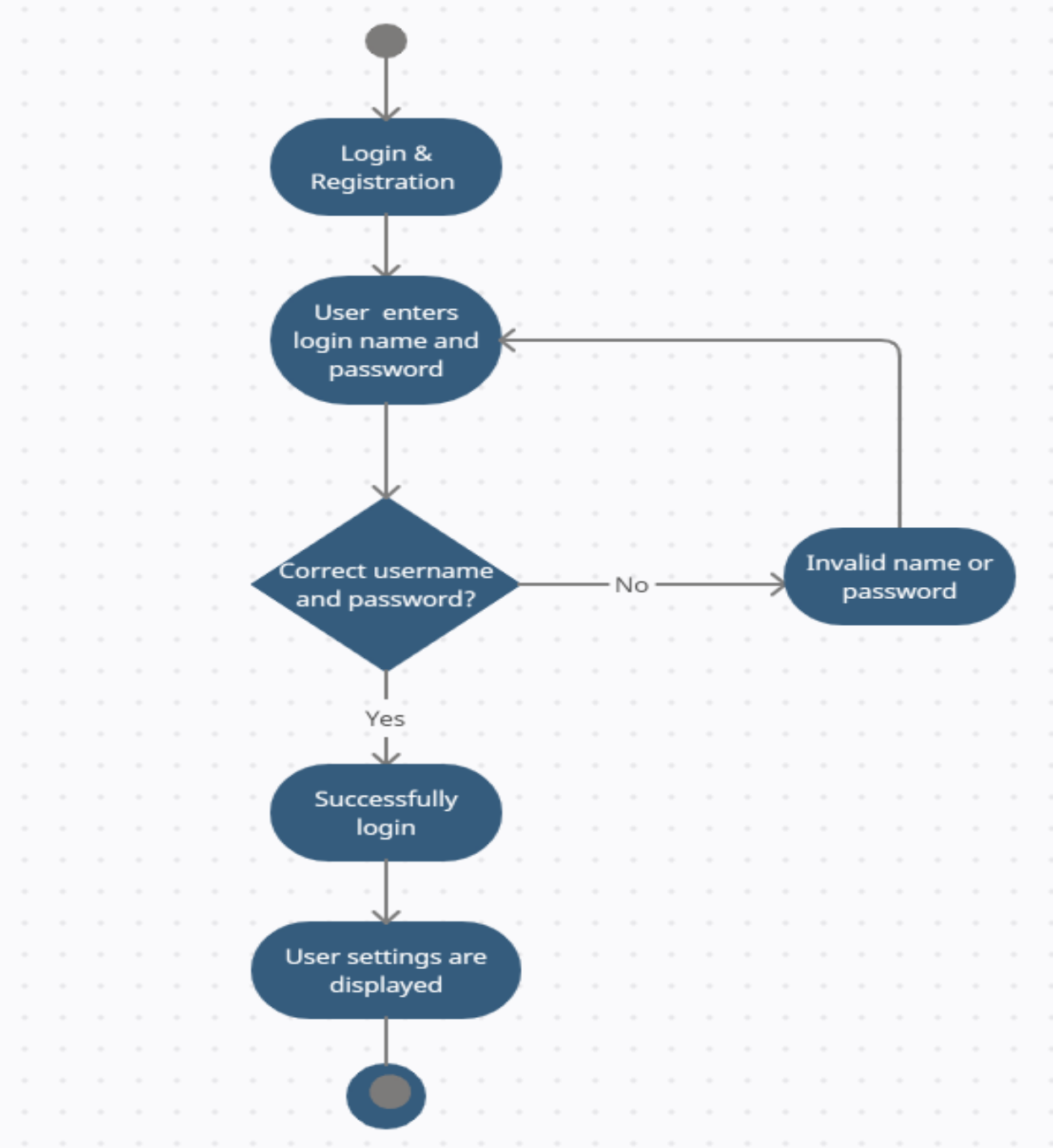
Use Case	Discounts	
Goal	User have to booked ticket and logged in to the system.	
Preconditions	User has got discount. System provide good service.	
Success End Condition	System has not given the discount to user. User has not used the code for get the discount.	
Failed End Condition	User have to booked ticket and logged in to the system.	
Primary Actors: **Secondary Actors:**	Customer System administrator.	
Trigger	Discount request comes in/any coupon	
Description / Main Success Scenario <the steps of the scenario from trigger to goal delivery and any clean up after>	**Step**	**Action**
	1	User directly request for discount to the system.
	1.1 1.2	User calls in-via phone User sends massage from web page.
	2	System capture user request.
	3	System gives clients information on discount, last dates of discount.
	4	User signs for discount.
	5	System creates new booked ticket list with discount price to user.
Alternative Flows <a: condition causing branching>	**Step**	**Branching Action**
	1	System has not confirm discount request.
	2	Renegotiate discount request.
Quality Requirements	**Step**	**Requirement**
	1	The user should request for the discount within valid date.
	2	The discount pop up message will stay no later than 30 seconds after it is sent by the System

Use Case	Logout	
Goal	User or admin request directly to the system, expects smoothly logout from the page.	
Preconditions <what we expect is already the state of the world>	User must have to log in to the system.	
Success End Condition	Logout successfully.	
Failed End Condition <the state of the world if goal abandoned>	Logout unsuccessfully	
Primary Actors: **Secondary Actors:**	Client , admin	
Trigger <the action upon the system that starts use case>	Click on the logout button.	
Description / Main Success Scenario <the steps of the scenario from trigger to goal delivery and any clean up after>	**Step**	**Action**
	1	Click on the logout button.
	2	System captures user request.
	3	Then system execute the logout process
	4	Logout successfully.
Alternative Flows <a: condition causing branching>	**Step**	**Branching Action**
	1	System auto logout within 30min.
	2	Renegotiate logout.
Quality Requirements	**Step**	**Requirement**
	1	The system should execute the process within 30 seconds

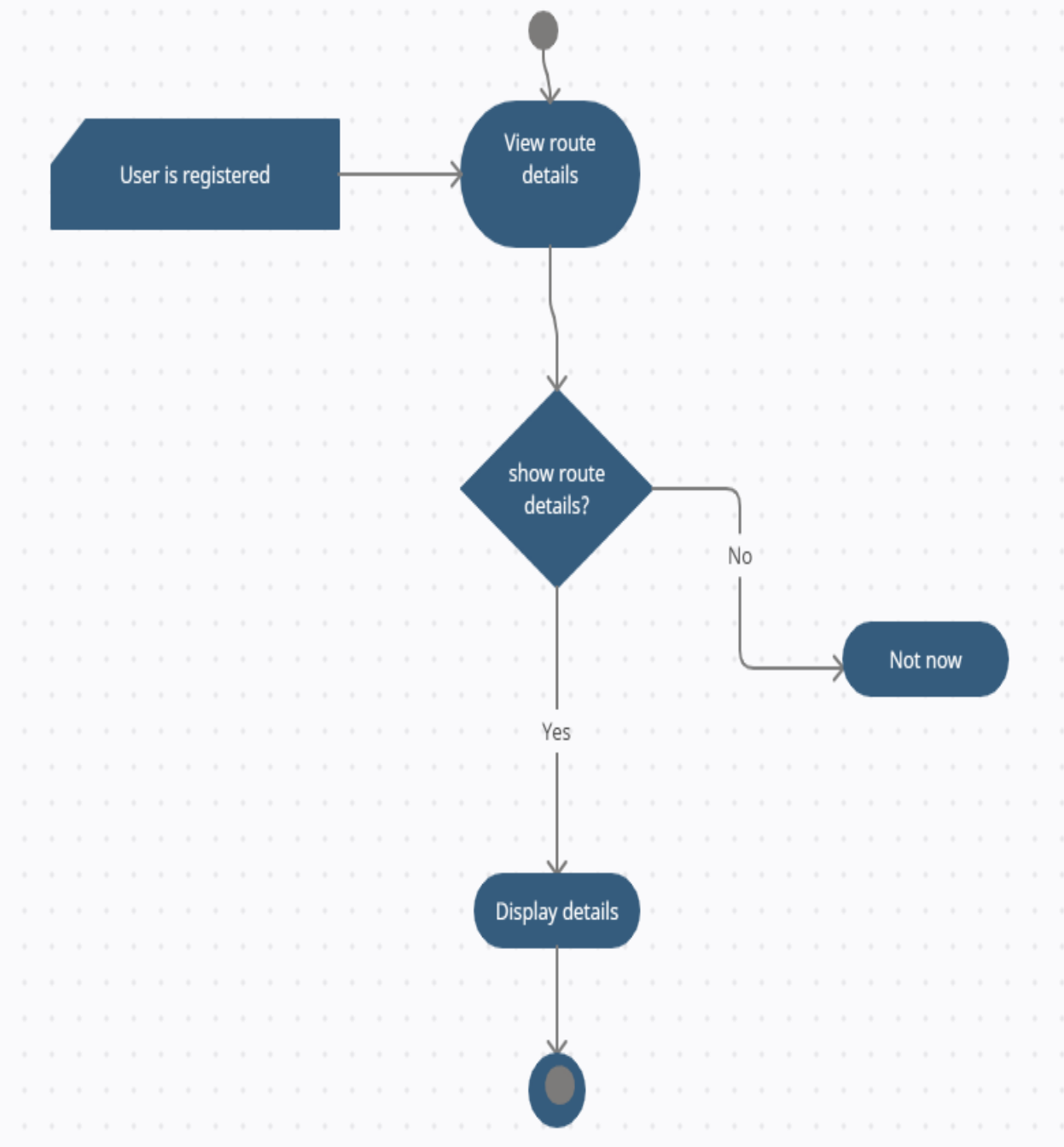
Chapter 5

ACTIVITY DIAGRAM

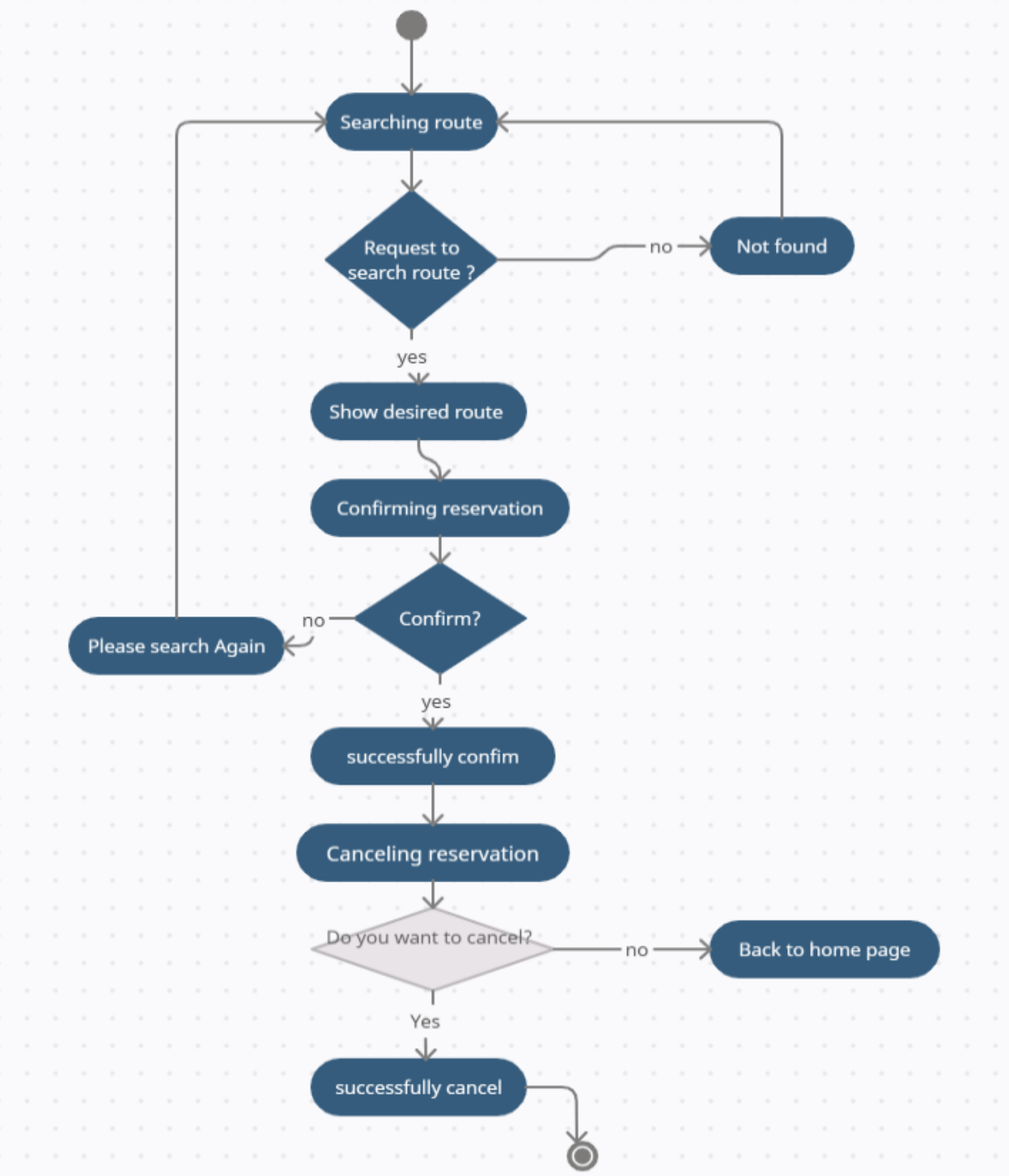
Login


Login & Registration
User enters login name and password
Correct username and password?
No
Invalid name or password
Yes
Successfully login
User settings are displayed

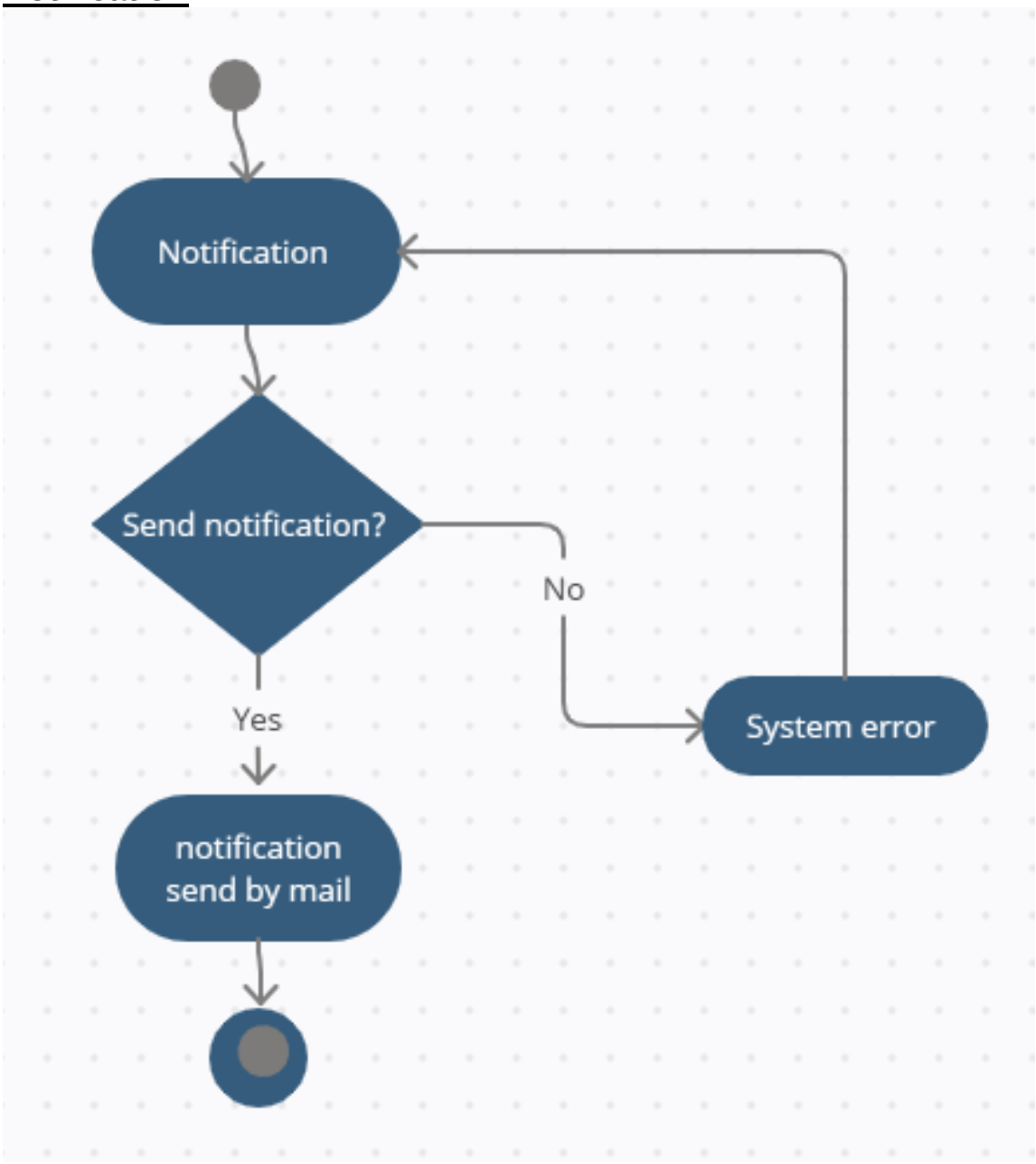
View route details



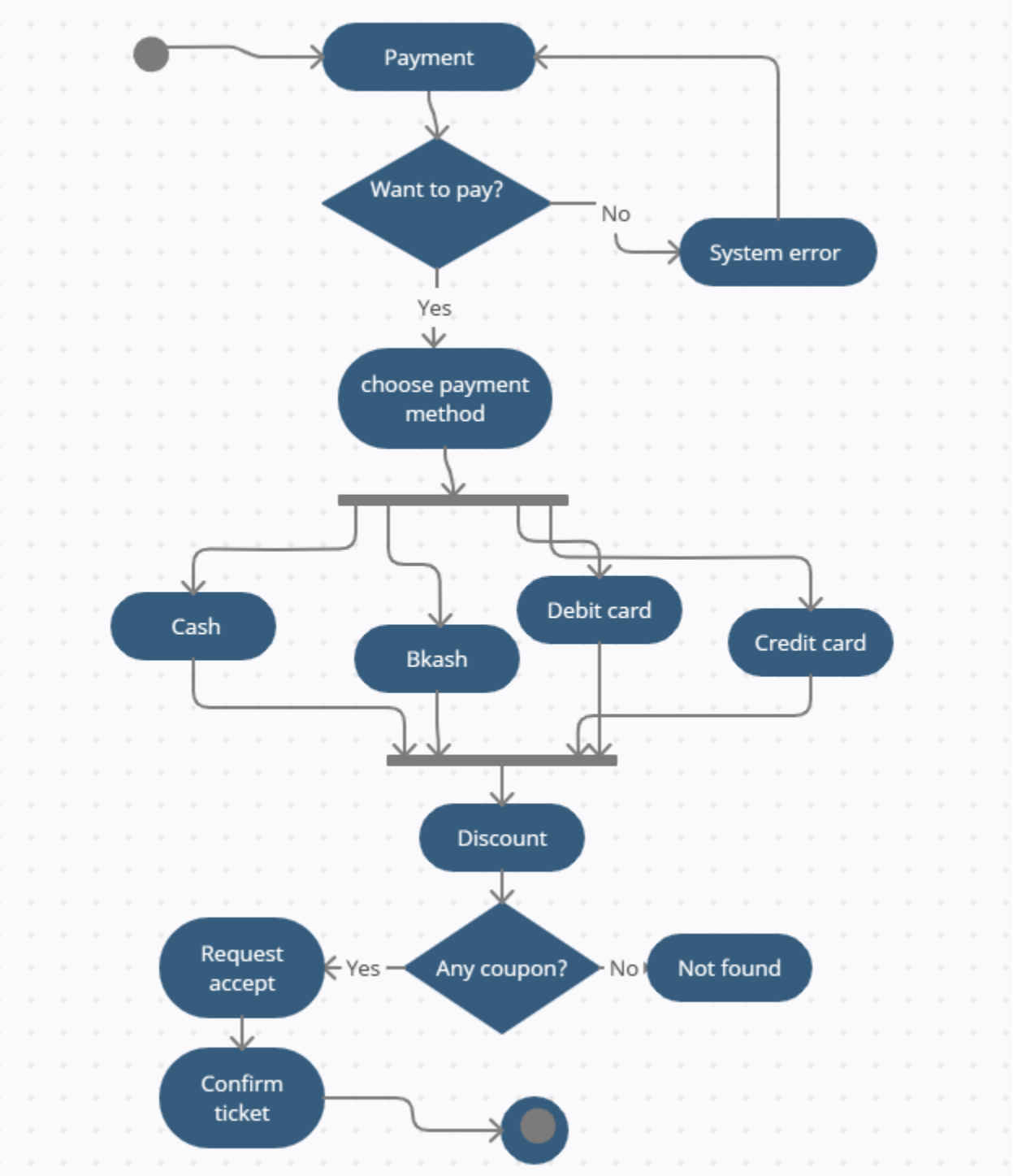
Searching route, confirming reservation Canceling reservation



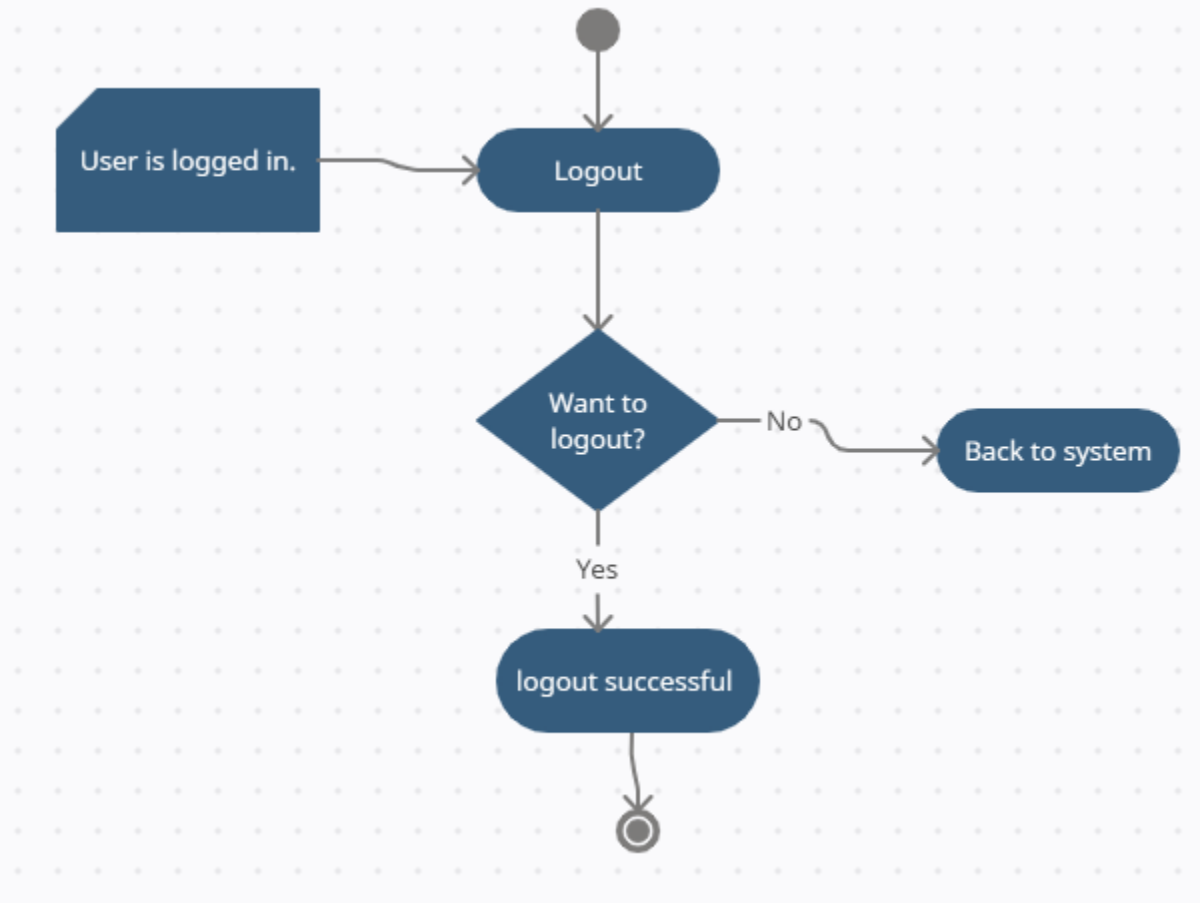
Notification



Payment and discount



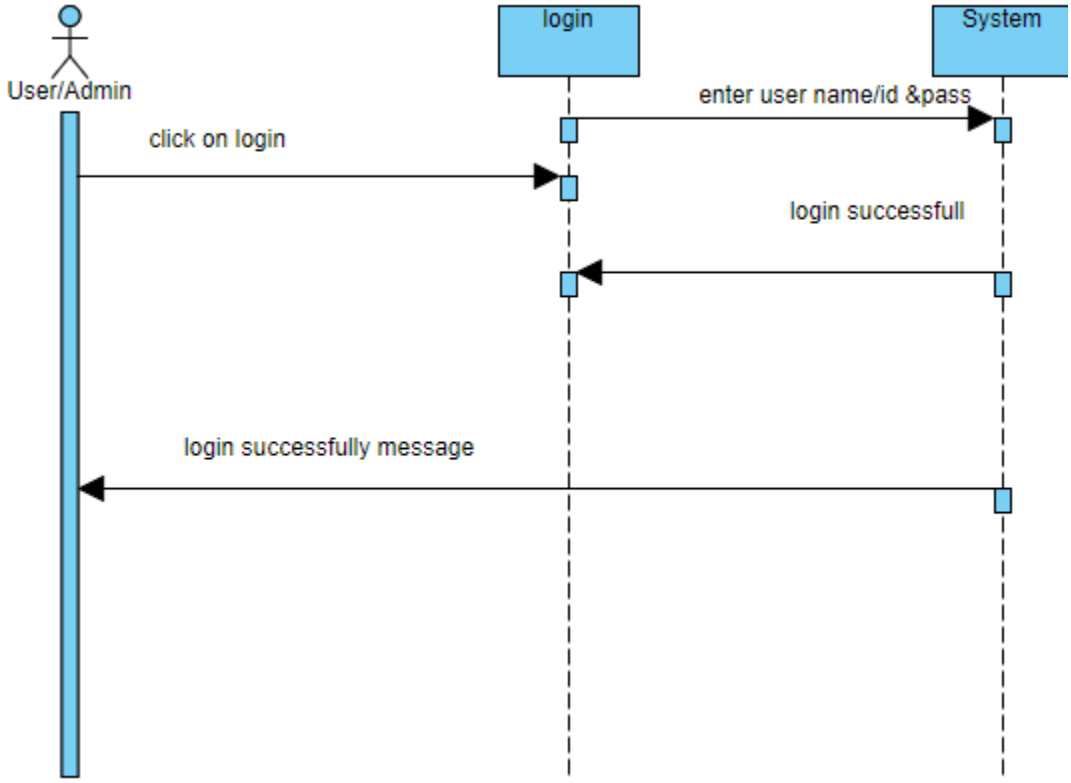
Logout


User is logged in.
Logout
Want to logout?
No
Back to system
Yes
logout successful

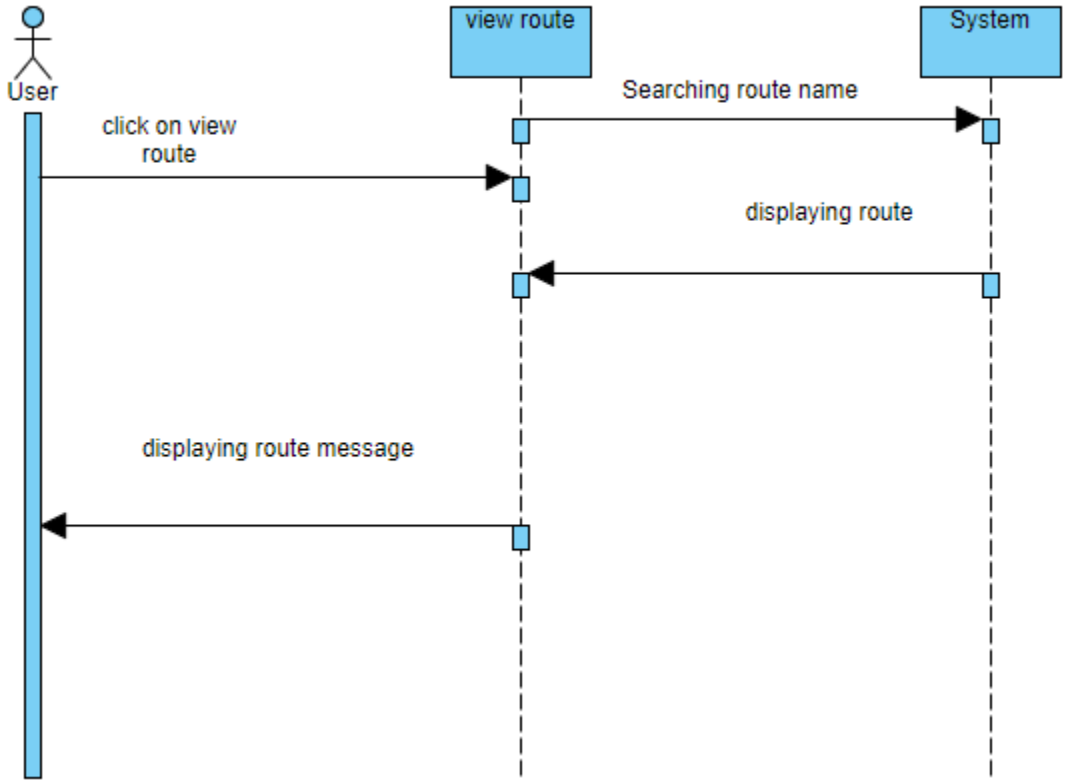
Chapter 6

SEQUENCE DIAGRAM

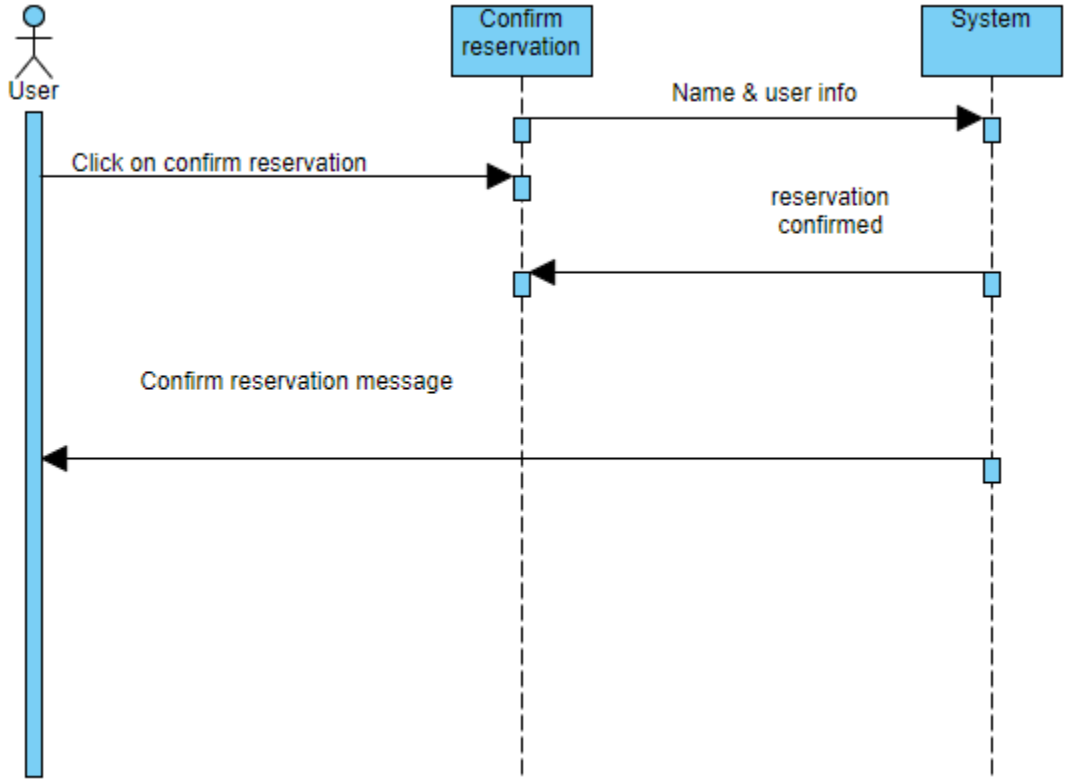
LOG IN:


User/Admin
login
System
enter user name/id &pass
click on login
login successfull
login successfully message

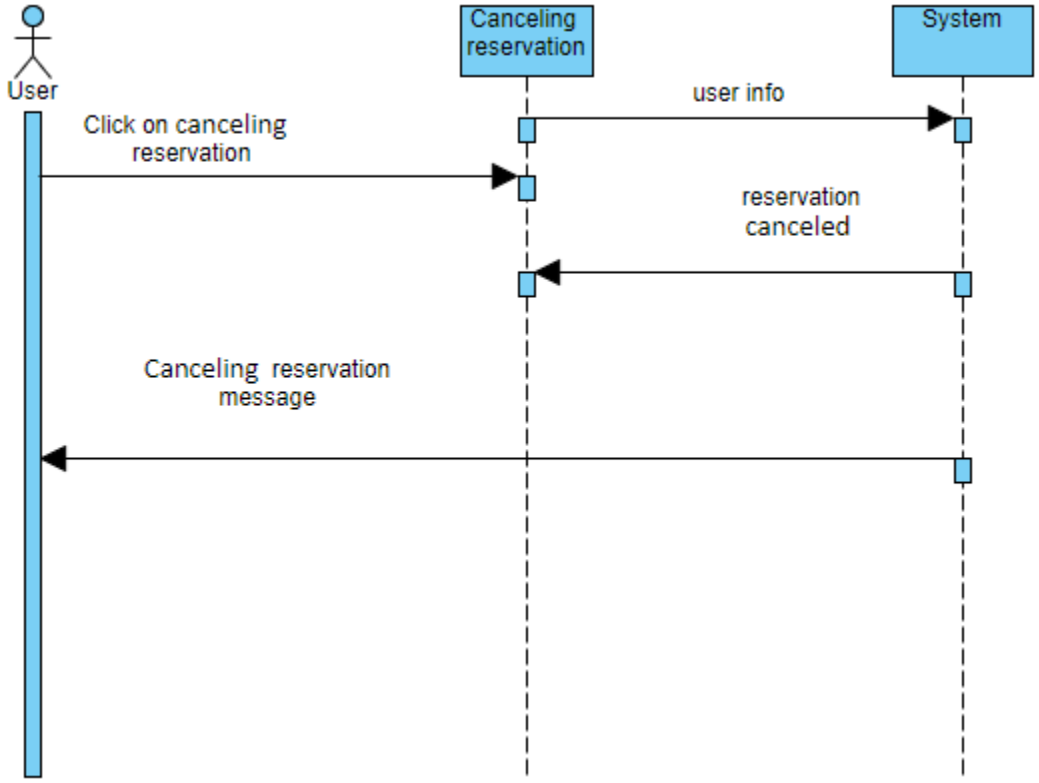
View route:


User
view route
System
Searching route name
click on view route
displaying route
displaying route message

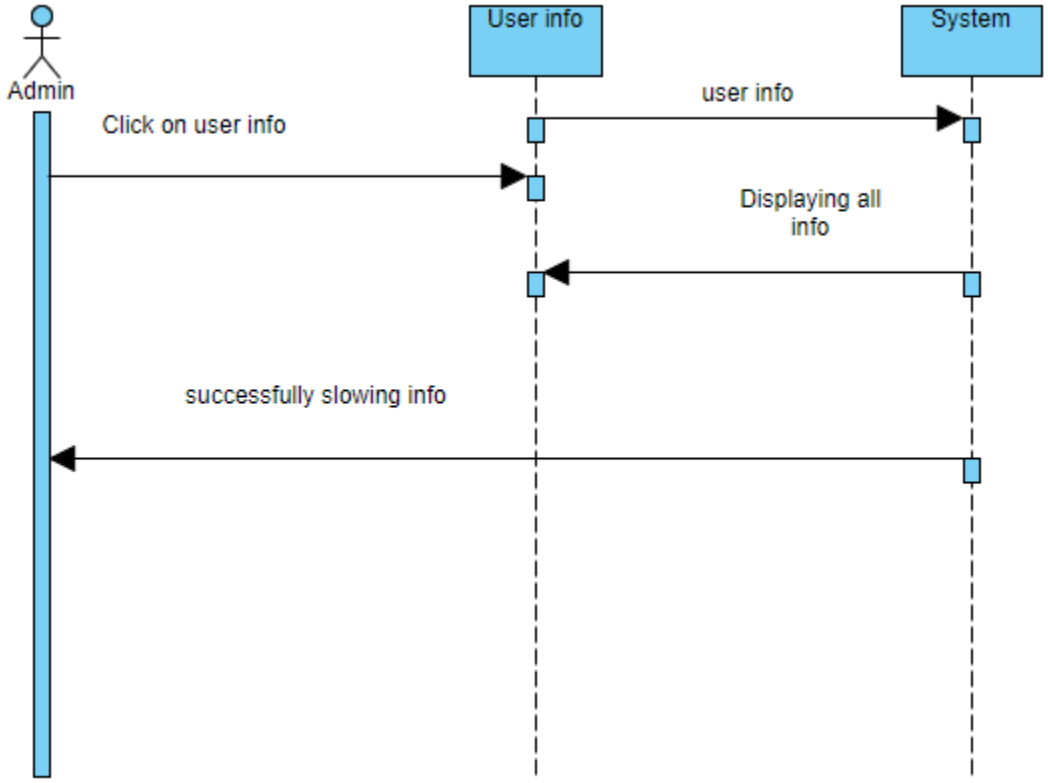
Confirm reservation:



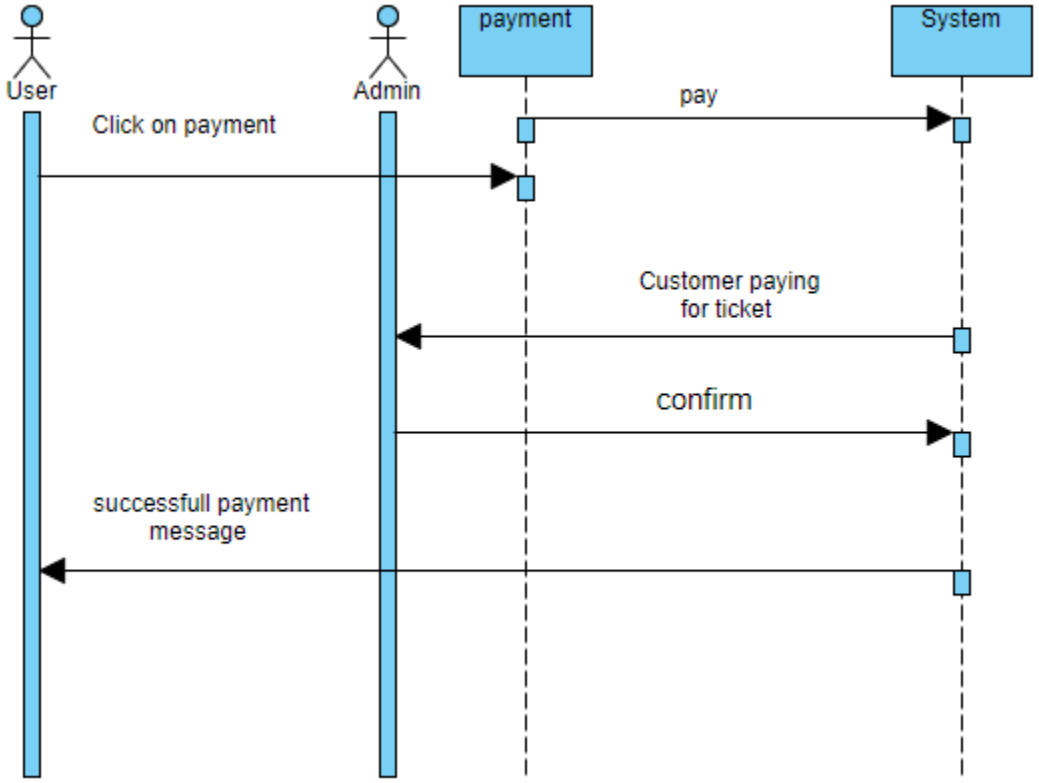
Canceling reservation:



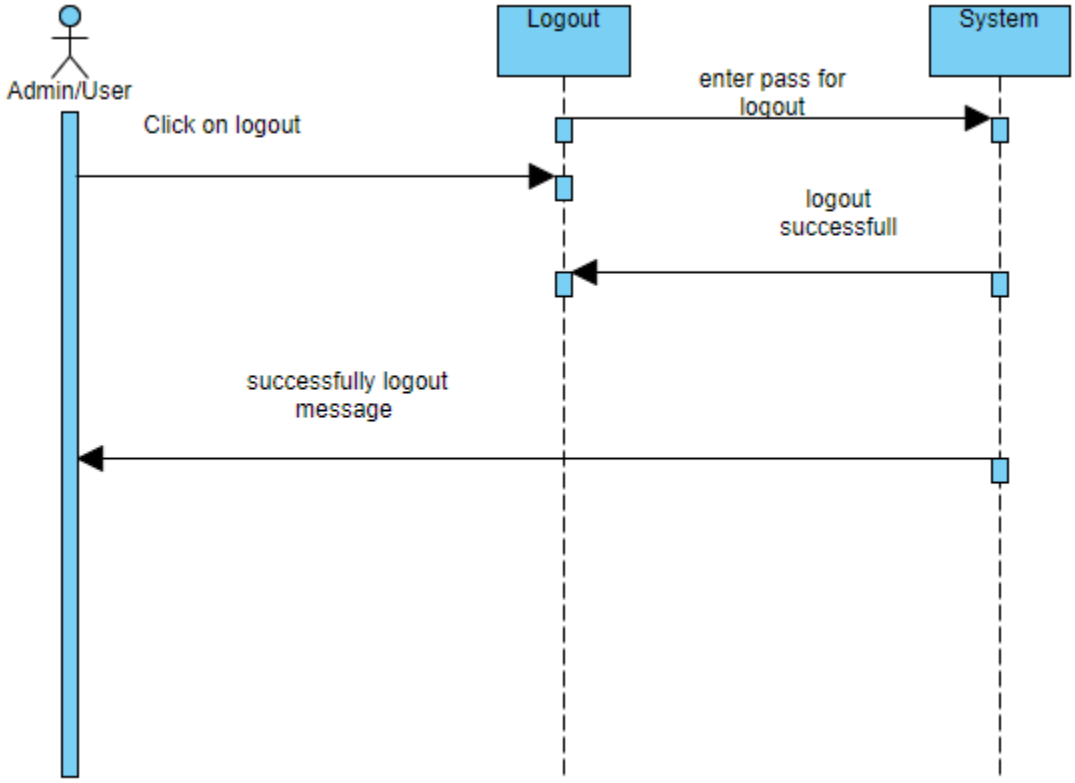
User info:


Admin
User info
System
user info
Click on user info
Displaying all
info
successfully slowing info

Payment :

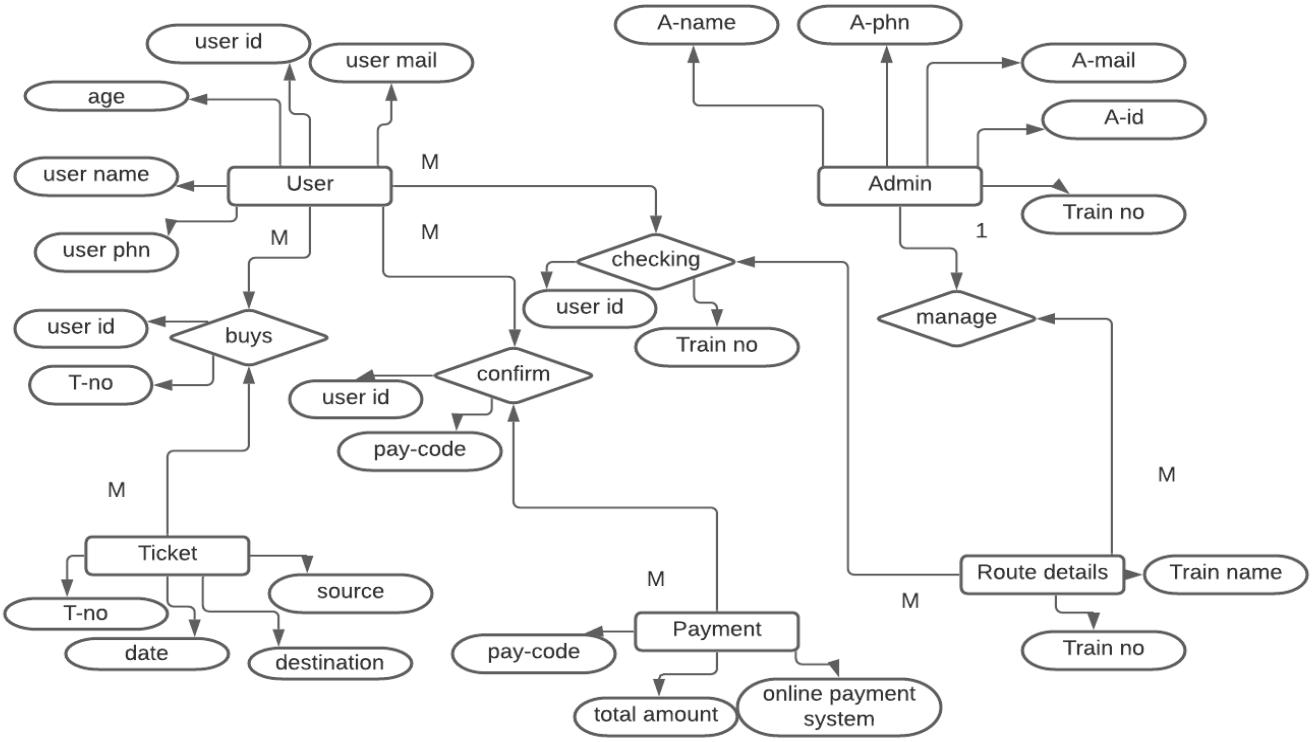

User
Admin
payment
System
Click on payment
pay
Customer paying
for ticket
confirm
successfull payment
message

Logout:


Admin/User
Logout
System
enter pass for logout
Click on logout
logout successfull
successfully logout message

Chapter 7

ER DIAGRAM



ID:192-35-2858
Name:Jahanara Islam Mridula
Sec:B

Railway Reservation System