<<Ticketing System>>

Group Number:CSSE_WE_47

Batch: WEEKEND

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Individual Contribution

Name	ID Number	Contribution
Illandara T.S	**IT17051644**	**Scenario 4(use case diagram,class diagram,sequence diagram,wireframes)**
Dayasena B.R.D	**IT17006644**	**Scenario 3(Use case scenario,use case diagram,class diagram,sequence diagram,wireframes)**
Madurawala K.S.H	**IT17000154**	**Scenario 2(Use case scenario,use case diagram,class diagram,sequence diagram,wireframes)**
De Silva H.L.H	**IT17067966**	**Scenario 1(Use case scenario,use case diagram,class diagram,sequence diagram,wireframes)**

Introduction

A major problem faced by public Transport system today is the delay when collecting fares in buses and operating costs for this process. As a solution for this we have built a design for a ticketing system that manages bus fares automatically for passengers and also tools for transport managers to manage finances and make plans for the future system based on statistics. The overall System is categorized into 4 main scenarios.

1. Passenger can present digital token (smart card, mobile QR code, bar code in physical ticket) when getting in/out. If read successfully give audio/visual feedback to user. System will check if sufficient credit is available to permit journey. Visitors like foreigners are issued a temporary token. After the required journey has been made he/she has to pay in cash according to the distance travelled to the bus operator.

2. Personal Account will be available for each passenger (Create using public transport provider). Each account will have a unique token and an initial balance. Passengers have to Add credits to the account using cash, debit or credit cards at pay stations. Passengers can add credit online by visiting the transport service provider's website or via mobile. Passenger's are also able to look up the journeys they have taken and the fares they have paid from the system.

3. Transport managers are able to get information from the digital ticketing system to plan timetables, identify potential overcrowding on parts of the network, how many passengers use different parts of the network at different times of day and on different days of the week.

4. Transport Managers are able to plan the finances by getting information about the fares collected from passengers and how these relate to journeys that have been taken.
They can also view information about how often the ticket inspectors discover people travelling without a valid ticket to check whether additional inspectors should be employed.
They are also able to generate statistical reports to analyse different situations.

Use Case Scenarios

Use case scenario for scenario 1

Priority – 1 – low, 5-high

Use case number	1	
Use case name	Local passenger get in/out to/from the bus	
Summary	Local passenger pays his bus fare from his/her account	
Priority	5	
Pre-conditions	Local passenger should have token with him	
Primary Actor(s)	Local passenger	
Main scenario	steps	Action
	1	Passenger presents his token to the reader when get in to the bus
	2	System display the passenger details and account balance with Successful audio and visual feedback
	3	Passenger presents his token to the reader when get in to the bus
	4	System calculate the distance to deduct the fare from the account and display the account balance
Extensions	steps	Branching actions

	2a	System notify that the account has not enough credit to permit journey
	4a	System notify that the account has not enough credit to set the payment

Use case scenario for scenario 2

Use case id	2	
Use case name	Add Credit to Account	
Priority	4	
Pre-conditions	Local Passenger should have an Account with Public Transport Provider	
Primary Actor(s)	Local passenger	
Main scenario	steps	Action
	1	User access the system
	2	User logins to his/her account using a valid username and password
	3	The user chooses the 'Add Credit' option
	4	The user chooses cash or card as payment method
	5	User enters the payment details and select 'Confirm and Pay'
	6	System verifies the payment
	7	System update the credit balance
	8	User is notified about the successful payment with the available Credit balance

| Extensions	steps	Branching actions
	2a	If the login credentials are incorrect the system will display the login Screen again to enter the valid credentials
	5a	If the payment details are incorrect, the user will be prompted to Enter payment details again

Use case scenario for scenario 3

Use Case Number: 3
Use Case Name: Plan timetables and View Crowd Details
Summary: Transport manager can view/plan time tables, overcrowd details, passenger details.
Priority: 3
Pre-condition: :   User should logged into the system
Primary Actor: Transport Manager
Main Steps: 1. Transport manager logging to the system. 2. Transport management service Interface will display to the user.

3. 3. User can view all the ride details and plan the time tables.
4. User can identify all the overcrowd situations in overcrowd identity interface.
5. User can view all the details of passenger count by specific network, time and day.
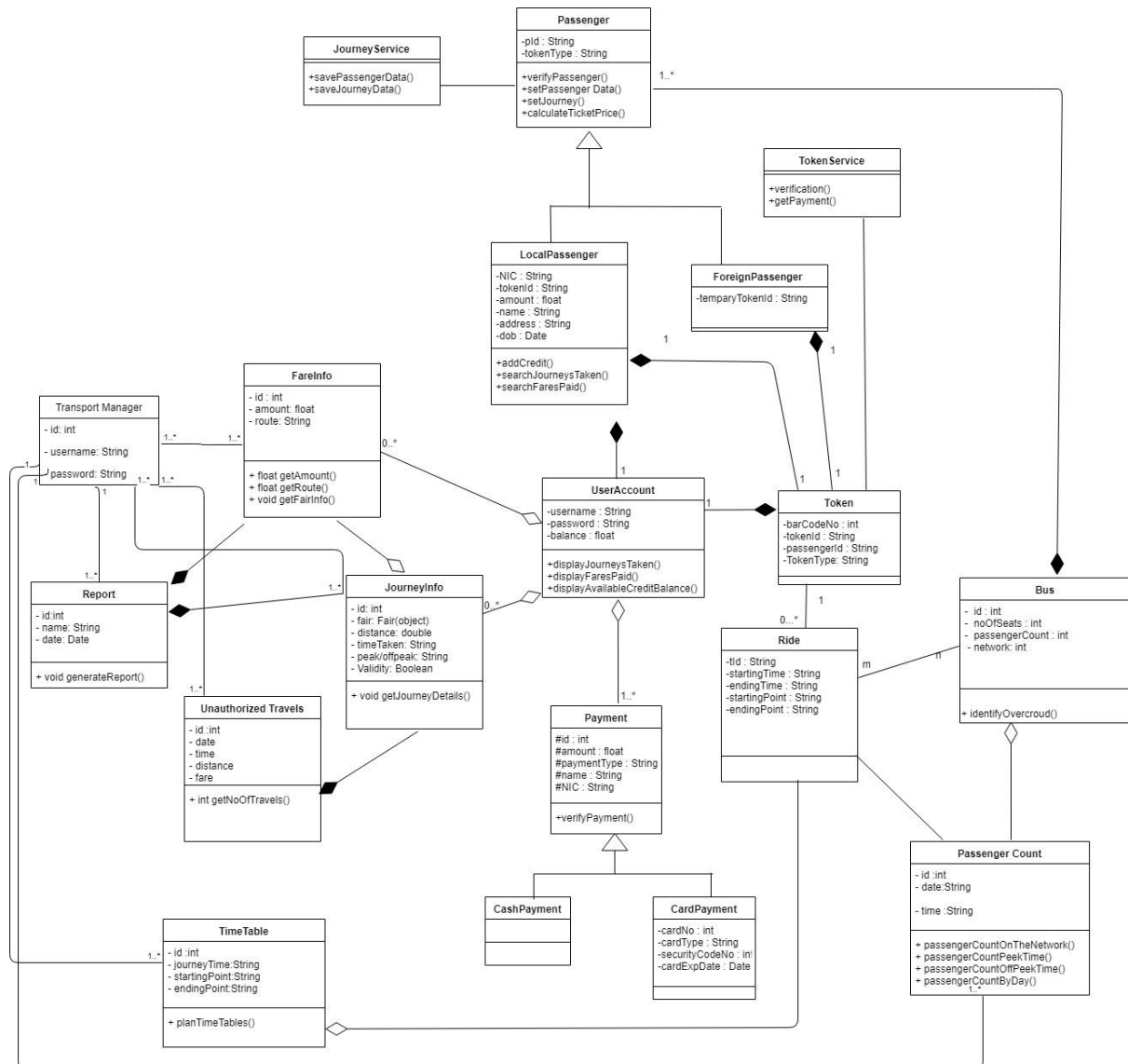
Extensions:

1. If username or password is incorrect.

  5a. display Error message and user can try again, register or reset the password .

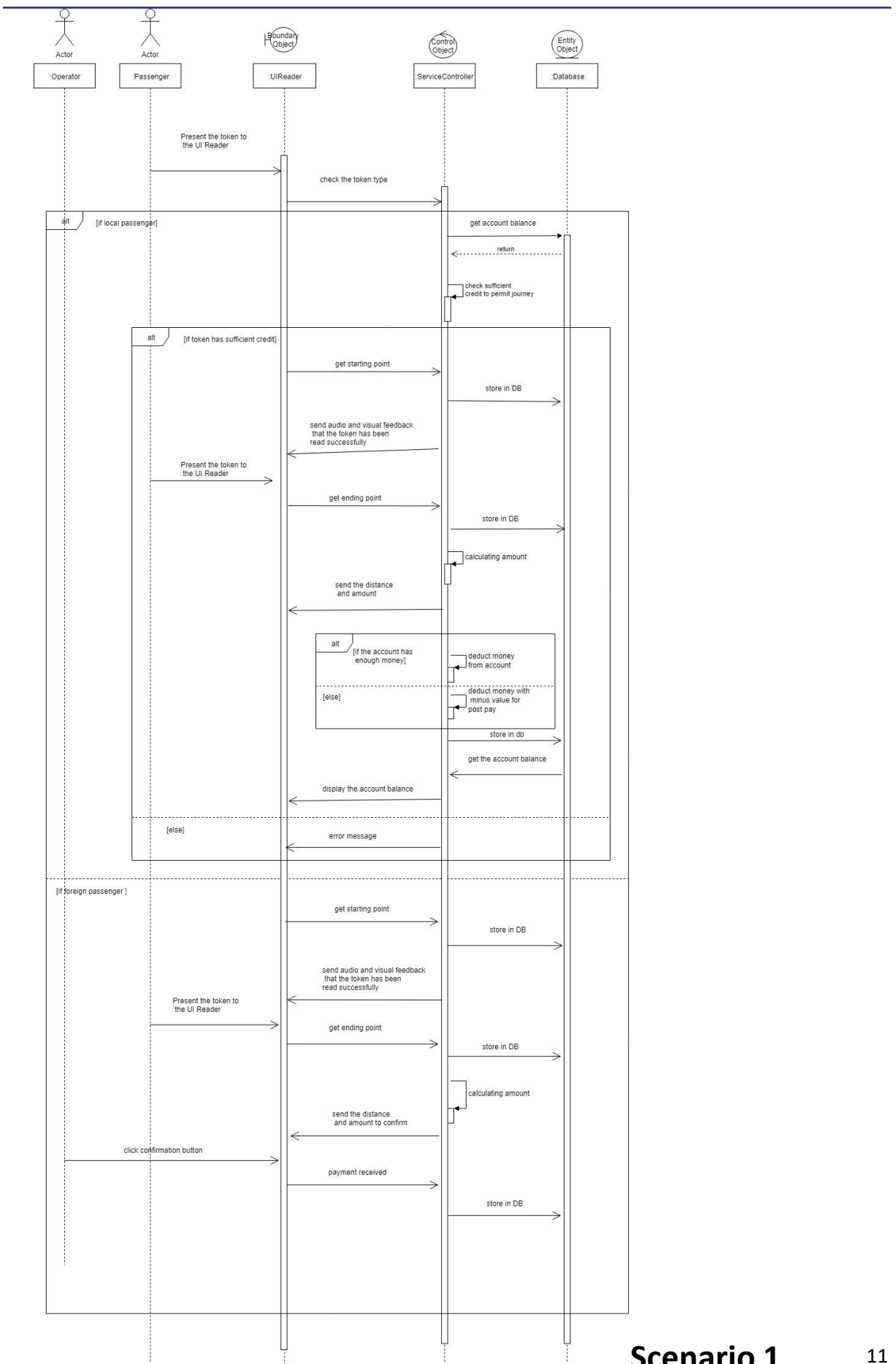# High Level Use case Diagram
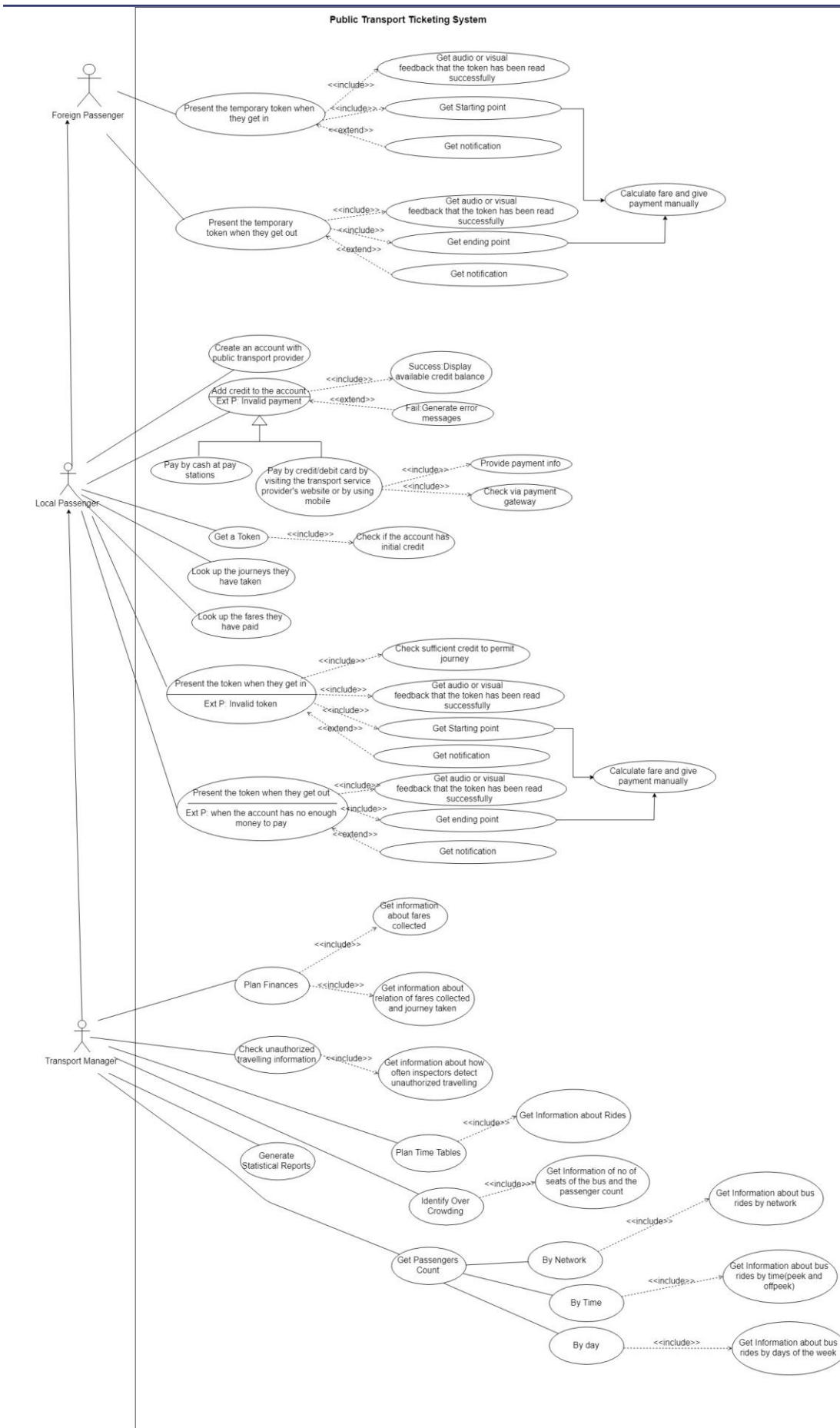
Class Diagram

Sequence Diagrams

Scenario 1

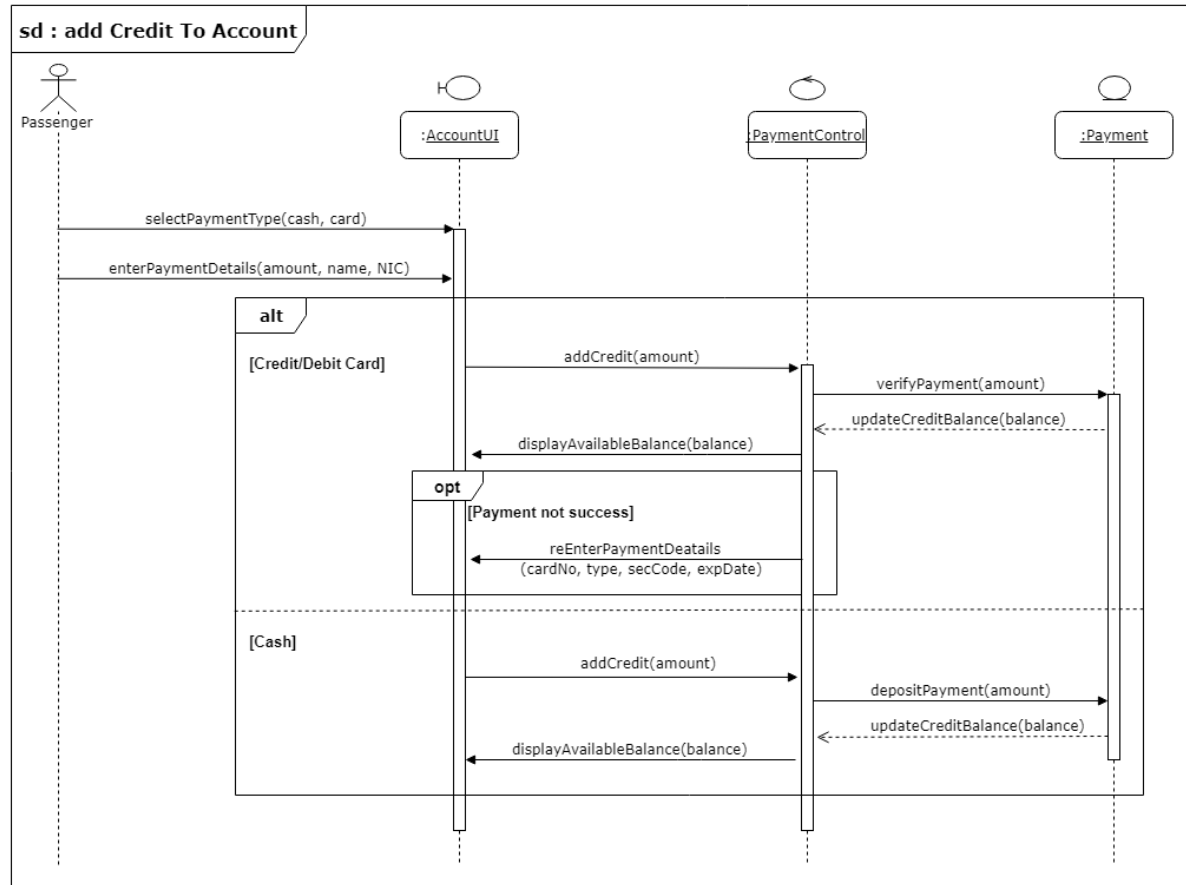## Sequence diagram for scenario 2

Sequence Diagram for scenario 3
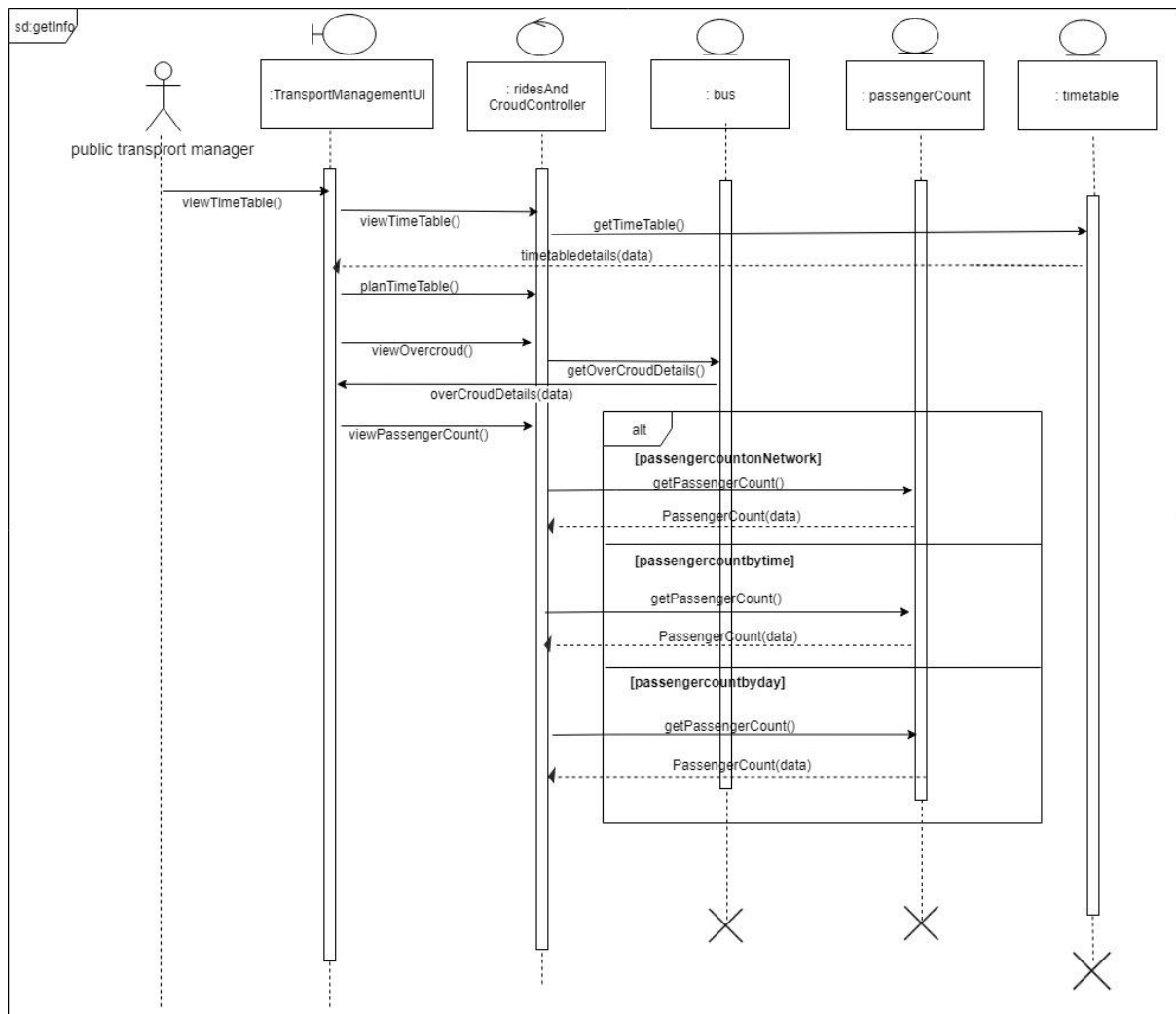
Sequence Diagram for scenario 4
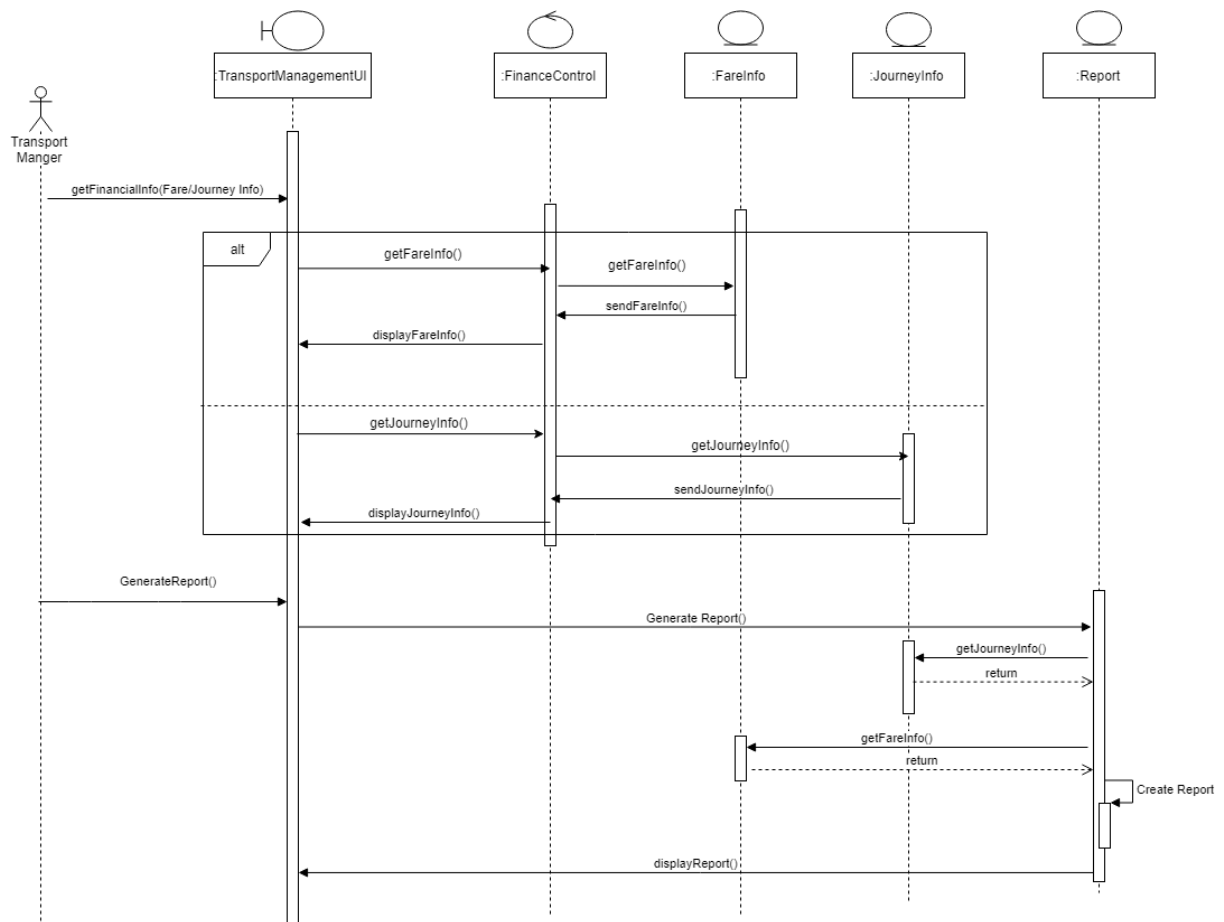
Wire Frames

Wire frames for scenario 1(low-Fidelity)
Local Passenger wire frames

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Bus Ticket System

Name : John Peter

Passenger ID : P0021234

Address : 'NO.03, Hikkaduwa, Galle'

FROM : Malabe

TO : Kaduwela

Distance : 8.8 km

Amount : 65.00

Your Account Balance : 7,435.00

Thank You...!!! Come Again.

Wire frames for foreign passenger

Bus Ticket System

TEMPORY TOKEN

Passenger ID : P1274

FROM : Malabe

TO : Kaduwela

Distance : 8.8 km

Amount : 65.00

Payment Confirmation   OK

Bus Ticket System

Payment Received Successfully.

Thank you...!!!

Come Again.

OK

Wire frames for scenario 2(high-fidelity)
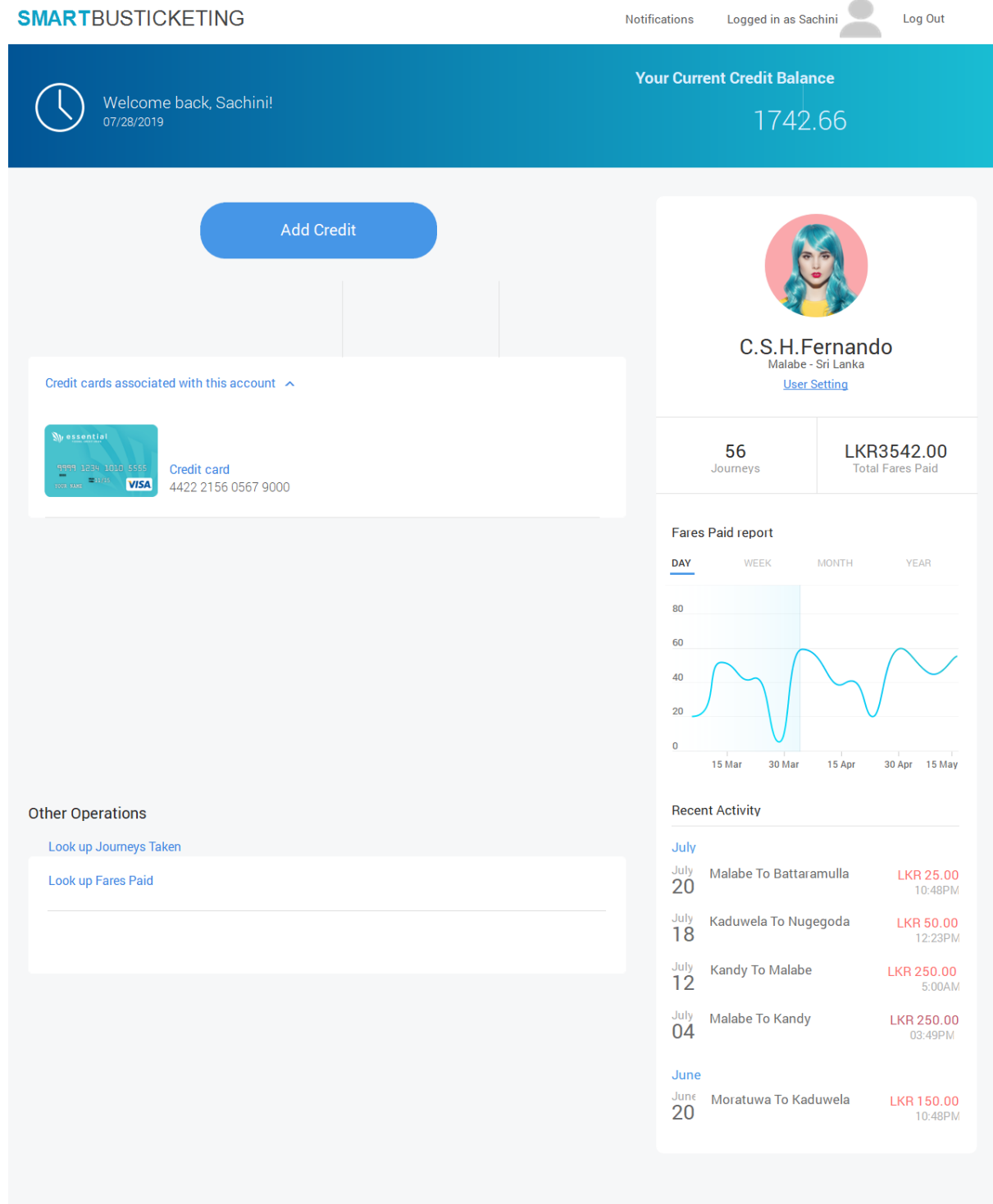
SMARTBUSTICKETING

Notifications   Logged in as Sachini   Log Out

Welcome back, Sachini!
07/28/2019

Your Current Credit Balance
1742.66

Add Credit

Credit cards associated with this account ⌃

Credit card
4422 2156 0567 9000

Other Operations

Look up Journeys Taken

Look up Fares Paid

C.S.H.Fernando
Malabe - Sri Lanka
User Setting

56	LKR3542.00
Journeys	Total Fares Paid

Fares Paid report

DAY	WEEK	MONTH	YEAR

Recent Activity

July

July 20	Malabe To Battaramulla	LKR 25.00 10:48PM
July 18	Kaduwela To Nugegoda	LKR 50.00 12:23PM
July 12	Kandy To Malabe	LKR 250.00 5:00AM
July 04	Malabe To Kandy	LKR 250.00 03:49PM

June

| June 20 | Moratuwa To Kaduwela | LKR 150.00 10:48PM |

22

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SMARTBUSTICKETING

Notifications   Logged in as Sachini   Log Out

Your Current Credit Balance

1742.66

Welcome back, Sachini!
07/28/2019

Add Credit To the Account

Enter Payment Details

Cash Payment

Amount

LKR

Confirm and Pay

Card Payment

Amount

LKR

Select Card Type

Card No

CVV (Security Code)

Confirm and Pay

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SMARTBUSTICKETING

Notifications   Logged in as Sachini   Log Out

Welcome back, Sachini!
07/28/2019

Your Current Credit Balance
1742.66

My Credit

All Credit History ⌄

Payment Successful !!!
Thank you for your Payment of LKR 2000.00

DATE	Date	Amount(LKR)	
	01-07-2019	1500.00	⌄
	15-07-2019	550.00	
	27-07-2019	1000.00	
	01-07-2019	1500.00	⌄
	15-07-2019	550.00	

Show More

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Wire frames for scenario 3(high-fidelity)
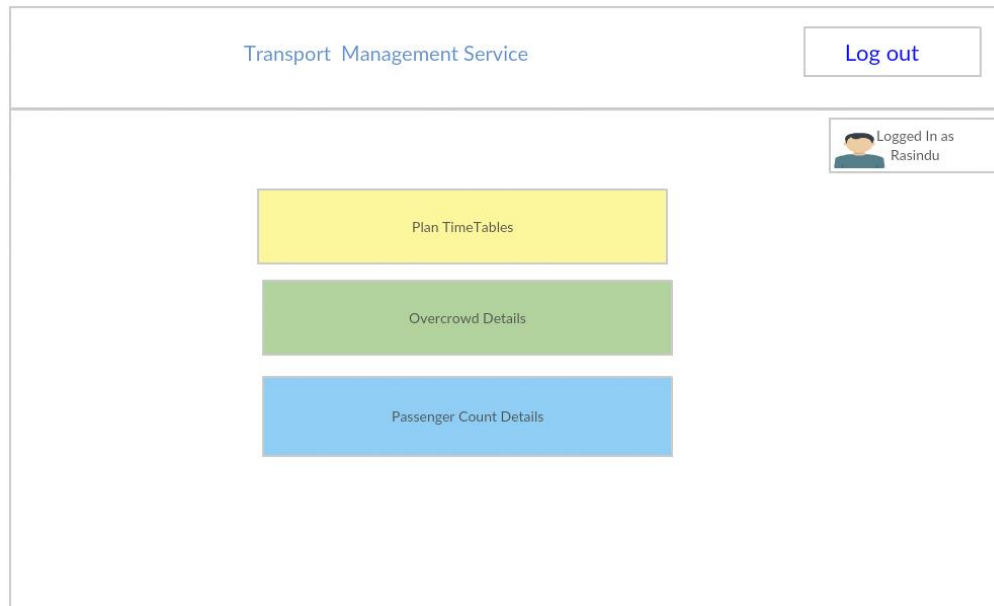
OverCroud Identify   Log out

Logged In as
Rasindu

busId	Route	noOfSeats	noOfPassengers
b001	malabe-kaduwela	64	120
b002	galle-jafna	53	89
b003	galle-matara	53	60
b004	galle-kandy	53	80
b005	kandy-panadura	53	89

Ride details

busid	b001
Route	kaduwela-Malabe
distance	20km
Buses on the Route	50

Plan TimeTables   Log out

Logged In as Rasindu

Id	JourneyTime	Starting Point	Ending Point
r001	02hrs	kaduwela	Malabe
r002	03hrs	Moratuwa	Malabe
r003	08hrs	Batticcloa	Galle
r004	08hrs	Malabe	Kurunagala
r005	02hrs	Galle	Matara

Ride details

id   r001

route   kaduwela-Malabe

Time taken   02hrs

Buses on the Route   50

save

Wire frames for scenario 4(high-fidelity)

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Transport Management Service

Log out

Logged In as Sahan

Plan Finances

Check Unauthorized Travels

Plan
Finances

Log out

Logged In as
Sahan

id	amount	route	distance	time taken	peak/offpeak	validity
001	50	kotta-malabe	3km	40min	peak	valid
002	25	kotta-nugegoda	2km	20min	peak	valid
003	150	kandy-malabe	75km	3hrs	off-peak	valid
004	18	koswatta-pitakotte	3km	25min	off-peak	valid
005	40	kirulapana-malabe	5km	30hmin	peak	valid

Generate Report

creately
www.creately.com • Online Diagramming

Transport Management Service

UnAuthorized Travels

Logged In as Sahan

Fair	Route	distance	token status	month
25	Colombo-Kandy	70km	invalid	january
12	malabe-pitakotte	3.2km	nvalid	febraury
50	kelaniya-malabe	3.2km	invalid	march

No Of Inspectors per bus :
2

Winter
Summer
Spring

Generate Report