2.5.1.2 Description of Selected Use cases

Table 2.1.1 Description of singup use case

Use Case ID	UC001
Use Case Name	SignUp
Participating Actor	Passenger
Use Case Description	allows passenger with efficient and accurate account creation.
Preconditions	The passenger needs access to an internet connection and a web browser.
Flow of Events	1. The passenger opens the web browser and navigates to the Selam Transport Platform website homepage. 2. The passenger clicks on the option to signup which directs them to the appropriate page containing a form . 3. The passenger enters their required information in the form, such as name, email address, phone number , password and other identifying information, carefully checking for accuracy each time. 4. After all fields have been filled out, the passenger submits the form which will result in a successful account creation and present them with a confirmation message.
Alternate	If the passenger information has errors during account creation, the system notify & show those errors to the user on the passenger form.

Table 2.1.2 Description of check seat use case

Use Case ID	UC002
Use Case Name	Check seat
Participating Actor	Passenger
Use Case Description	Allows a passenger to check seat availability for a particular route.

Precondition	1. The passenger needs an active account on the platform 2. The passenger needs to access Selam Transport Platform website.
Flow of Events	1. The passenger logs into their account on the Selam Transport Platform website. 2.Upon successful login, the passenger navigates to the seat checking section or selects the option to check seat availability. 3. The system presents the passenger with a search interface displaying available routes and dates for travel. 4.The passenger selects a specific route and travel date for which they want to check seat availability. 5. The system retrieves and displays information regarding the available seats, including the number of available seats, seat layout, and booking status. 6. The passenger reviews the seat availability information and selects the desired seat(s) if available. 7. The system confirms the seat selection and reserves the chosen seat(s) for the passenger.
Alternate	The system notifies passengers about seat unavailability or encountered errors, providing relevant information. It offers options for making alternative choices, such as joining a wait-list for upcoming seat reservations(in case somebody canceled reserved ticket).

Table 2.1.3 Description of Reserve ticket use case

Use Case ID	UC003
Use Case Name	Reserve ticket
Participating Actor	Passenger
Use Case Description	Allows a passenger to reserve a seat after checking seat availability for a specific route
Precondition	1.The passenger needs an active account on the Selam Transport Platform. 2. The passenger has successfully logged into their account and accessed the seat checking section.
Flow of Events	1. The passenger navigates to the "Check Seat" section after logging into the platform. 2.Following the seat availability check, if seats are available for the selected route and date:

	2.1 The system prompts the passenger to confirm the reservation. 2.2 The passenger selects the desired seat(s) for reservation. 2.3 The system processes the reservation request and confirms the successful reservation to the passenger. 3. if there are no available seats or errors occur during seat checking: 3.1 The system notifies the passenger about seat unavailability or encountered errors. 3.2 It provides relevant information and offers alternatives such as joining a wait-list for upcoming seat reservations. 4. After successful reservation: 4.1 The system provides real-time transaction status to the passenger, indicating the status of the reservation process, payment, and seat confirmation in two hours. 5. If the passenger proceeds to make payment: 5.1 The system redirects the passenger to the payment gateway. 5.2 The system confirms the payment and finalizes the seat reservation. It updates the passenger about the confirmed reservation and payment completion. 6. After the payment process, 6.1 The system checks the passenger's eligibility for any rewards based on the completed transaction. 6.2 If eligible, it rewards the passenger with the respective benefits (e.g., loyalty points, discounts) as per the reward policy.
Alternate	In case of reservation issues, including insufficient balance, network problems, or other encountered errors, the system promptly notifies the passenger. The system advises the passenger to rectify the problem, such as by recharging the balance or resolving network issues, before attempting to restart the reservation process. This guidance aims to assist passengers in overcoming the encountered obstacles to ensure a successful reservation upon resolving the issues, if possible.

Table 2.1.4 Description of Cancel ticket use case

Use Case ID	UC004
Use Case Name	Cancel Ticket
Participating Actor	Passenger
Use Case Description	Allows a passenger to cancel a previously reserved ticket on the Selam Transport Platform.
Precondition	1. The passenger must have an active account on the platform. 2. The passenger needs access to the Selam Transport Platform website. 3. The passenger must have reserved a ticket to cancel
Flow of Events	1.The passenger logs into their account on the Selam Transport Platform website. 2. The passenger navigates to the "Manage Reservations" or "My Tickets" section. 3. Upon locating the reserved ticket they wish to cancel, the passenger selects the cancellation option for that specific ticket. 4.If the cancellation request falls within the permissible cancellation period (e.g., 2 days before the travel date): e.g2 If cancellation requested with in 15 days after departure date half of the refund is initiated. 4.1 The system processes the cancellation and prompts the passenger with an option to request a refund. 4.3 Upon selecting the refund, the system initiates the refund process and notifies the passenger about the successful refund initiation. 4.4 The passenger selects the refund option. 5.For cancellations within the ermissible period, if the passenger chooses not to request a refund: 5.1 The system confirms the ticket cancellation and notifies the passenger about the successful cancellation, without initiating a refund process.
Alternate	1. In case the cancellation request is beyond the permissible period: 1.1 The system notifies the passenger that the ticket cannot be canceled due to the expiration of the cancellation period, maintaining the existing Reservation.

Table 2.1.5 Description of View History use case

Use Case ID	UC005
Use Case Name	View History
Participating Actors	Passenger
Use Case Description	Allows the passengers to view the travel history of their account
Precondition	1. The passenger must have active account on Selam Transport Platform website. 2. The passenger must have internet connection.
Flow of Events	1. The passenger logs into their account on the Selam Transport Platform website. 2. Navigating to the "Travel History" or "My Trips" section, the passenger selects the option to view their travel history. 3. The system retrieves and displays the passenger's travel history, showcasing details such as past reservations, journey dates, destinations, and ticket statuses. 4.The passenger can review and access specific details of their past trips, including travel dates, reserved routes, seat selections, and journey statuses.
Alternate	In the case of no available travel history or errors in retrieving past trip details: 1. The system notifies the passenger that there is no recorded travel history available for their account. 2. The system notifies the passenger about the encountered errors and advises them to try again later or contact customer support for assistance.

2.1.6 Use Case description for Add Driver use case

Use Case ID	UC006
Use Case Name	Add Driver
Participating Actor	Operation Manager
Use Case Description	Allows the operation manager to add drivers
Precondition	The Operation manager must have the necessary permissions to add drivers.
Flow of Events	1. The Operation manager logs into their account on the bus management system. 2. Upon successful login, the Operation manager navigates to the "Manage Drivers" or "Add Driver" section. 3. The system presents a form for entering driver information, including name, contact details, license information, and any other required details. 4. The operation manager fills out the form with accurate and complete information for the new driver. 5. The system validates the entered information and checks for any potential conflicts or errors. 6. If the information is valid, the operation manager submits the form to add the new driver to the system. 7. The system generates a confirmation message indicating the successful addition of the new driver after getting verification from general manager.
Alternate	If there are validation errors in the entered information, the system notifies the operation manager, indicating the specific fields that need correction.

2.1.7 Use Case description for Cancel Route use case

Use Case ID	UC007
Use Case Name	Cancel Route
Participating Actor	Operation Manager
Use Case Description	Allows the to Cancel Routes
Precondition	1. The operation manager must have the necessary permissions to cancel routes. 2. There should be at least one active bus route in the system.
Flow of Events	1. The manager logs into their account on the bus management system. 2. Upon successful login, the operation manager navigates to the "Manage Routes" or "Cancel Route" section. 3. The system displays a list of active routes, indicating their details such as origin, destination, and schedule. 4. The operation manager selects the specific route they want to cancel. 5. The system presents a confirmation prompt, asking the operation manager to confirm the cancellation of the selected route. 6. The operation manager confirms the cancellation. 7. The system processes the cancellation, updating the status of the route to "canceled. After getting verification from general manager" 8. The system notifies relevant stakeholders, such as passengers with existing bookings on the canceled route, about the route cancellation.
Alternate	If there are any pending or future bookings on the route, the system may prompt the operation manager to provide alternative solutions, such as transferring passengers to other available routes or initiating refunds

2.1.8 Use Case description for Modify route use case

Use Case ID	UC008
Use Case Name	modify route
Participating Actor	Operation Manager
Use Case Description	Allows the operation manager to modify routes
Precondition	1. The operation manager must have the necessary permissions to modify routes. 2. There should be at least one active bus route in the system.
Flow of Events	1. The Operation manager logs into their account on the bus management system. 2. Upon successful login, the operation manager navigates to the "Manage Routes" or "Modify Route" section. 3. The system displays a list of active routes, indicating their details such as origin, destination, and schedule. 4. The operation manager selects the specific route they want to modify. 5. The system presents a form or interface displaying the current details of the selected route, allowing the operation manager to make changes. 6. The operation manager modifies the relevant information, such as origin, destination, schedule, or any other details as needed. 7. The system validates the modified information and checks for any potential conflicts or errors. 8. If the information is valid, the operation manager submits the form to apply the modifications to the route. 9. The system updates the route information based on the operation manager's modifications. 10. The system notifies relevant stakeholders, such as passengers with existing bookings on the modified route, about the changes.
Alternate	If there are validation errors in the modified information, the system notifies the operation

	manager, indicating the specific fields that need correction.

2.1.9Use Case description for Modify ticket use case

Use Case ID	UC009
Use Case Name	Modify ticket
Participating Actor	Ticket officer
Use Case Description	This use case allows ticket officers to modify various details of a passenger's booked bus ticket, such as travel dates, updated price, and other relevant information. And In case new route is added by operation manager new ticket must be added by ticket officer
Precondition	1.Ticket officer must have granted account on the platform. 2.The passenger must have a previously booked bus ticket to be modified in . 3. There must be change to be done example new added route, canceled route and soon.
Flow of Events	1. The ticket officer logs into their account on the bus reservation system. 2. Upon successful login, the ticket officer accesses the system's ticket management section. 3. The system presents a list of booked tickets requiring modification, and a section to add new ticket or delete/cancel a ticket based on situation 4. The ticket officer selects the specific ticket they wish to modify or add/cancel 5. The system displays the details of the selected ticket, providing options for modifications (e.g., change travel date, route, or seat). 6. The ticket officer confirms the desired modifications. 7. The system updates the ticket information based on the officer's modifications and issues a confirmation message.
Alternate	If the modification involves a change in the ticket price, the system notifies the passenger of any additional payment required.

2.1.10 Use Case description for Verify waitlist use case

Use Case ID	UC0010
Use Case Name	Verify waitList
Participating Actor	Ticket Offier
Use Case Description	Allows the ticket officer to verify the waitlist requested by the passenger.
Precondition	The ticket officer must have an active account on the platform.
Flow of Events	1.The ticket officer logs into their account on the bus reservation system. 2.Upon successful login, the ticket officer navigates to the "Waitlist" section. 3. The system displays a list of bus routes for which the passenger has joined the waitlist. 4. The passenger selects a specific route to verify their waitlist status. 5. The system provides information about the passenger's current position on the waitlist, the number of available seats, and any relevant details. 6. The ticket officer reviews the waitlist status and associated information. 7. Grant the seat for the passengers who joined wait-list.
Alternate	If the bus route no longer has available seats and the passenger is still on the waitlist, the system notifies the passenger about the unavailability and suggests alternative options.

Scenario

A scenario is a sequence of possible events of what people do and experience as they try to make use of computer system and applications. In this section the system has been represented in a set of scenarios that expresses the flow of events and major functions of the system. The following selected scenarios define some real-life instances of proposed system.

Scenario ID 001
Scenario Name: Book Bus Ticket Scenario
Participating Actor(s): Passenger

Flow of Events:
1. The passenger opens the bus reservation system's website or app.
2. The passenger navigates to the main page and selects the option to book a new bus ticket.
3. The system directs the passenger to a page where they can input journey details such as destination, date, and preferred time.
4. The passenger selects their desired bus route, travel date, and other relevant information.
5. The system presents available seats and allows the passenger to choose a preferred seat.
6. The passenger confirms the booking details and proceeds to payment.
7. After successful payment, the system generates a confirmation message with the ticket details.

Scenario ID 002
Scenario Name: Cancel Bus Ticket Scenario
Participating Actor(s): Passenger

Flow of Events:
1. The passenger logs into their account on the bus reservation system.
2. In the "My Bookings" section, the passenger selects the option to cancel a booked bus ticket.
3. The system displays a list of the passenger's booked tickets, and the passenger chooses the ticket they want to cancel.
4. The system prompts the passenger to confirm the cancellation.
5. After confirmation, the system processes the cancellation, updates the ticket status, and issues a cancellation confirmation message.

Scenario ID 003
Scenario Name: Modify Bus Ticket Scenario
Participating Actor(s): Ticket Officer

Flow of Events:
1. The ticket officer logs into the system.
2. The ticket officer accesses the ticket management section and identifies a ticket requiring modification.
3. The system displays the details of the selected ticket, allowing the officer to make modifications such as changing travel dates, routes, or seats.

4. The ticket officer confirms the modifications.
5. The system updates the ticket information based on the officer's changes and issues a confirmation message.

Scenario ID 004
Scenario Name: Bus Ticket Availability Check Scenario
Participating Actor(s): Passenger

Flow of Events:
1. The passenger visits the bus reservation system to check the availability of bus tickets for a specific route and date.
2. The system provides an option to search for available buses based on destination, date, and time.
3. The passenger enters the desired details, and the system displays a list of available buses along with their schedules and seat availability.
4. The passenger selects a preferred bus and views the available seats.
5. The system confirms the seat availability and allows the passenger to proceed with the booking.

Scenario ID 005
Scenario Name: Bus Ticket Reservation with Promo Code Scenario
Participating Actor(s): Passenger

Flow of Events:
1. The passenger initiates the process of booking a bus ticket on the reservation system.
2. During the booking process, the system prompts the passenger to enter a promo code.
3. The passenger enters a valid promo code, and the system validates and applies the discount associated with the code.
4. The passenger continues with the booking, selects seats, and completes the payment process.
5. The system generates a confirmation message, indicating the successful reservation with the applied promo code discount.

Scenario ID 006
Scenario Name: Bus Schedule Modification Scenario
Participating Actor(s): Operation Manager

Flow of Events:
1. The Operation Manager logs into the system.
2. The manager navigates to the schedule management section and selects a specific bus route.
3. The system displays the existing schedule for the selected route.
4. The Operation Manager modifies the schedule by adjusting departure times or adding new trips.
5. The system updates the schedule information and notifies passengers with existing bookings about any changes.

Scenario ID 007
Scenario Name: Bus Ticket Waitlist Scenario
Participating Actor(s): Passenger

Flow of Events:
1. The passenger attempts to book a bus ticket for a specific route and date.
2. The system indicates that the desired bus is fully booked and offers the option to join a waitlist.

3. The passenger opts to join the waitlist and provides necessary contact information.
4. If a seat becomes available due to cancellations, the system automatically notifies the passenger, allowing them to confirm the booking.

Object Model

Table ..Account for Passenger

Field	**Type**	**Description**	**Example**
passengerId	string	Unique Identifier	passenger001
First Name	string	First name of the Passenger	Biruk
Last Name	String	Last name of the passenger	Tafese
phone_number	int	Login number	+251964377216
Email	string	email	biruk@example.com
password	string	password	biruk@1234

Table .. Ticket Officer

Field	**Type**	**Description**	**Example**
Name	string	Name of the ticket offier	Alemayehu
id	string	Unique identification	ticketofficer001
password	string	Login password	alex@1234

Table .. operation manager

Field	Type	Description	Example
Name	string	Name of the operation manager	Haile
id	string	Unique identification	operationmanager001
password	string	Login password	haile@1234

Table ..General Manager

Field	Type	Description	Example
Name	string	Name of the General Manager	Anteneh
id	string	Unique identification	ticketofficer001

Table ..Ticket

Field	Type	Description	Example
ticketId	string	unique identification	TKT001
status	string	Status of the ticket	booked
bookingDate	data	Date when the ticket is reserved	2023-12-21
passengerId	string	Identifier of the passenger	

		holding the ticket	passenger001
routeId	string	Indetifier route associated with a ticket	ROUTE001
seatNumber	string	The seat number booked by the passenger with the ticket001	25A
PayementStatus	string	status of payement for the ticket	paid

Table ..Route

Field	**Type**	**Description**	**Example**
routeId	string	Unique identifier for the route	ROUTE001
startLocation	string	Starting location of the route	Addis Ababa
endLocation	string	Ending location of the route	Jigjiga
distance	float	Distance covered by the route	622 km
departuretime	time	Time of the departure from the starting location	08:00 AM
arrivalTime	time	Time of arrival at the ending location	12:00 PM

Table .. Driver

Field	**Type**	**Description**	**Example**
driverId	string	Unique identifier of the	DRIVER001

		driver	
name	string	Name of the driver	Abebe
licenseNumber	string	Driver’s license number	DL123456789
contactNumber	int	contact number of the driver	+251987654321
vehicleNumber	string	Vehicle number assigned to the driver	ET2341

Table ..Payement

Field	**Type**	**Description**	**Example**
payementId	string	Unique identifier for the payment	PAY001
ticketId	string	Identifier of the ticket associated with the payment	TKT001
payementDate	data	Date when the payment was made	2023-12-21
amount	float	Amount paid for the ticket	850 Birr
payementMethod	string	Method used for the payment	CBE birr
transcationStatus	string	Status of the payment transaction	Sucess

Table 2.1.27 WaitList

Field	Type	Description	Example
waitlistId	string	Unique identifier for the waitlist entry	Waitlist001
routeId	string	Identifier of the route the passenger is waitlisted for	ROUTE001
passengerId	string	Identifier of the passenger in the waitlist	passenger001
waitlistDate	date	Date when the passenger joined the waitlist	2024-01-11
status	string	Current status of the waitlist entry	expired/active

Table .. Reward

Field	Type	Description	Example
rewardId	string	Unique identifier for the reward	reward001
passengerId	string	Identifier of the passenger receiving reward	ROUTE001
rewardType	string	Type of reward the passenger recieves	discount/loyality point
RewardValue	float	Value or quantity associated with the reward	10% discount on a ticket price

issueDate	date	Date when the reward was issued.	issued at 2024-01-14.

Table .. Notification

Field	Type	Description	Example
notificationId	string	Unique identifier for the notification.	NOTIF123456
userId	string	Identifier of the user receiving the notification.	passenger001
content	string	Text content for the notification	Your booking is confirmed.
sentDate	date	Date and time when the notification was sent	2023-04-15 15:45:00 UTC

Table .. OperationLog

Field	Type	Description	Example
logId	string	Unique identifier for the log entry	LOG123456
userId	string	Identifier of the user performing the operation	Admin001
operationType	string	Type of operation performed	Route Modification
operationDate	date	Date and time when the operation occurred.	2023-04-15 14:30:00 UTC

details	string	Additional details or notes about the operation.	Updated route details

Table .. RefundRequest

Field	Type	Description	Example
refundRequestId	string	Unique idenifier for the refund request	REFUNDREQ123456
tickeId	string	Identifier of the ticket for which the refund is requested	TKT001
requestDate	string	Date when the refund request was initated.	2023-04-15
status	string	current status of the refund request	Processed

Table .. Bus

Field	Type	Description	Example
BusId	string	Unique idenifier for the bus	BUS001
plateNumber	string	License plate number of the bus	ET2323
capacity	Int	Seating capacity of the bus	55
model	string	Model of the bus	XYZ-234Y
driverId	string	Identifier of the assigned driver	DRIVER001