Airline Passenger Management System

Database Analysis Document

USE CASE DIAGRAM

Visual Paradigm Online Diagrams Express Edition

Airline Passenger Management System

Book Ticket

Cancel Ticket

Cancel Flight

Check Ticket Status

Search Passenger Details

Admin

Passenger

Visual Paradigm Online Diagrams Express Edition
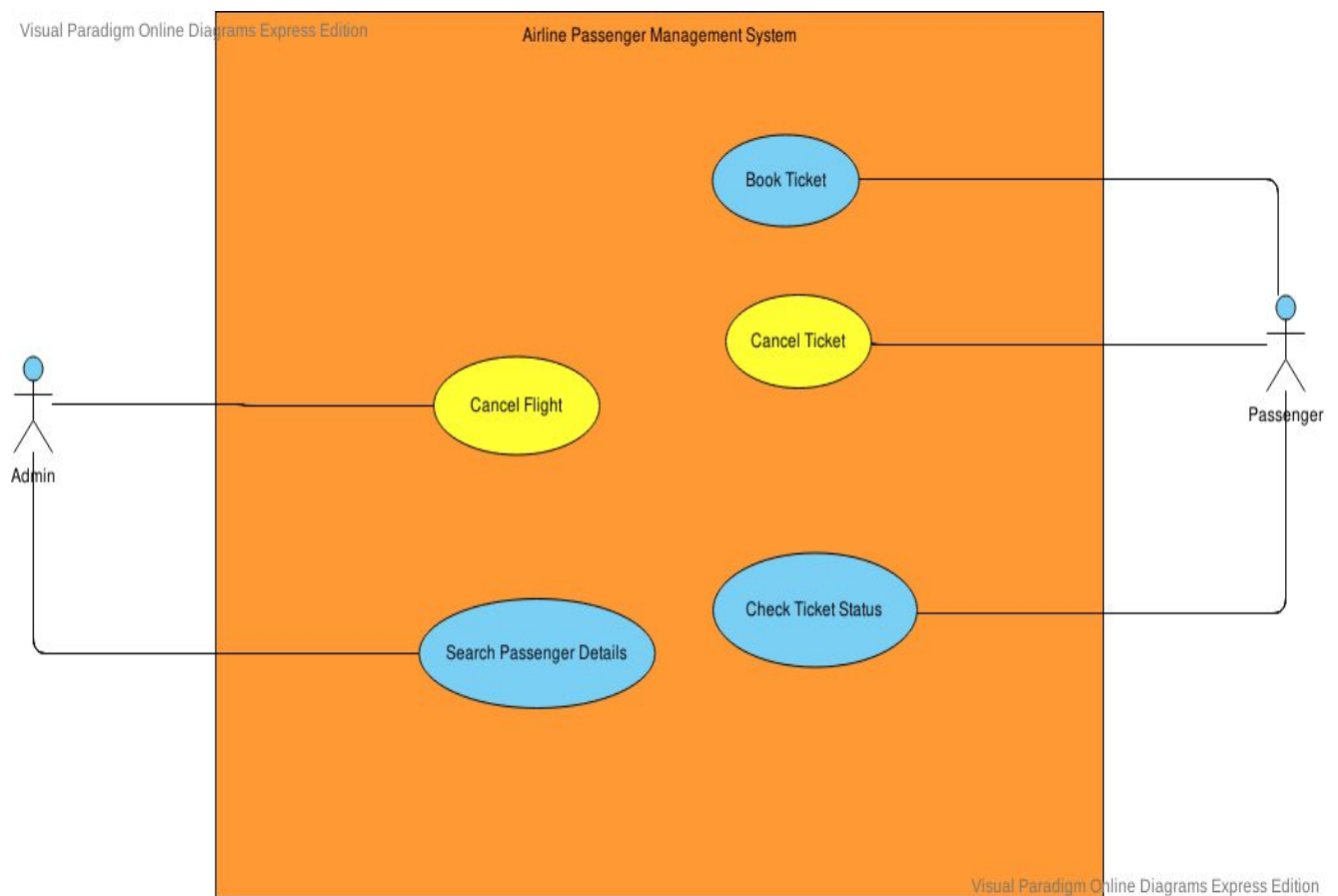
USE CASE DESCRIPTION

Use Case ID: 01

Use Case Name: Book Ticket

Description: Books Ticket in the System for the Passenger.

Actors: Passenger.

Flow:

Natural Flow:

Passenger Books Ticket by providing details to the System and receives the confirmation from the system.

Exception Flows:

#1: If No seats are available than Passenger can't book the ticket .

Use Case ID: 02

Use Case Name: Cancel Ticket

Description: Cancels Ticket in the System for the Passenger.

Actors: Passenger.

Flow:

Natural Flow:

Passenger cancels Ticket and informs the System and receives the confirmation from the system.

Use Case ID: 03

Use Case Name: Check Ticket Status

Description: Check Ticket status in the System for the Passenger.

Actors: Passenger.

Flow:

Natural Flow:

Passenger checks Ticket status by providing details to the System and receives the status of Ticket from the system.

Exception Flows:

#1: If Ticket is cancelled than Ticket status would fail and should return Info that Ticket is Cancelled.

Use Case ID: 04

Use Case Name: Cancel Flight

Description: Cancels Flight in case of emergencies.

Actors: Admin.

Flow:

Natural Flow:

Admin can cancel Flight tickets if there was a breakdown or calamity by calling cancel flight in the System and receive

confirmation from system.

Use Case ID: 05

Use Case Name: Search Passenger Details

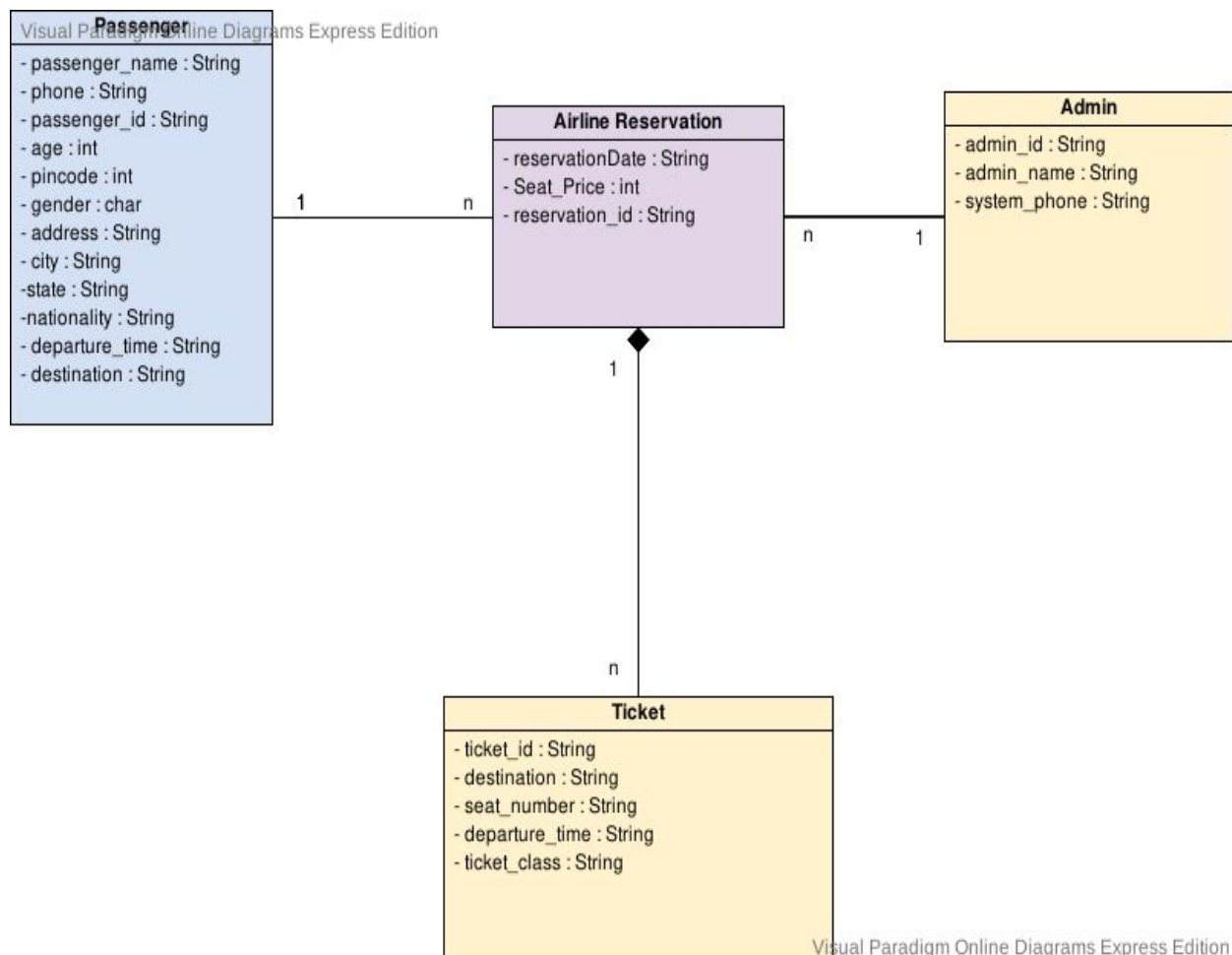**Description:** To receive passenger details from system.

Actors: Admin.

Flow:

Natural Flow:

Admin can search Passengers by providing unique identifier to system and receive passenger info from system.

Exception Flows:

#1: If the Tickets are not booked by that passenger then Admin can't receive passenger info and system should display that passenger does not exist to Admin.

UML CLASS DIAGRAM

Passenger

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- passenger_name : String
- phone : String
- passenger_id : String
- age : int
- pincode : int
- gender : char
- address : String
- city : String
- state : String
- nationality : String
- departure_time : String
- destination : String

Airline Reservation

- reservationDate : String
- Seat_Price : int
- reservation_id : String

Admin

- admin_id : String
- admin_name : String
- system_phone : String

1   n   n   1

1

n

Ticket

- ticket_id : String
- destination : String
- seat_number : String
- departure_time : String
- ticket_class : String

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DATABASE TABLES

Table Name = PASSENGER

NAME OF COLUMN	DATA TYPE	CONSTRAINTS
passenger_id	smallint	PK, Surrogate
passenger_name	String	
phone	String	
age	smallint	
pincode	smallint	
gender	char	
address	String	
city	String	
state	String	
nationality	String	
departure_time	String	
destination	String	

Table Name = AIRLINE_RESERVATION

NAME OF COLUMN	DATA TYPE	CONSTRAINTS
reservation_id	smallint	PK, Surrogate
reservation_Date	String	
seat_price	int	
passenger_id	smallint	FK References PASSENGER(passenger_id) NULL ON UPDATE CASCADE ON DELETE CASCADE
admin_id	smallint	FK References ADMIN(admin_id) ON UPDATE CASCADE ON DELETE SET NULL

Table Name = TICKET

NAME OF COLUMN	DATA TYPE	CONSTRAINTS
ticket_id	smallint	PK,Surrogate
destination	String	
seat_number	String	UNIQUE
departure_time	String	
ticket_class	String	
reservation_id	smallint	FK References AIRLINE_RESERVATION (reservation_id)

		NULL ON UPDATE CASCADE ON DELETE CASCADE

Table Name = ADMIN

NAME OF COLUMN	DATA TYPE	CONSTRAINTS
admin_id	smallint	PK,Surrogate
admin_name	String	
system_phone	String	

SCREENSHOTS OF GUI PROGRAM :

This is the First Window of the Application which takes to other Screens. A Home button is always present which brings back to this Screen.
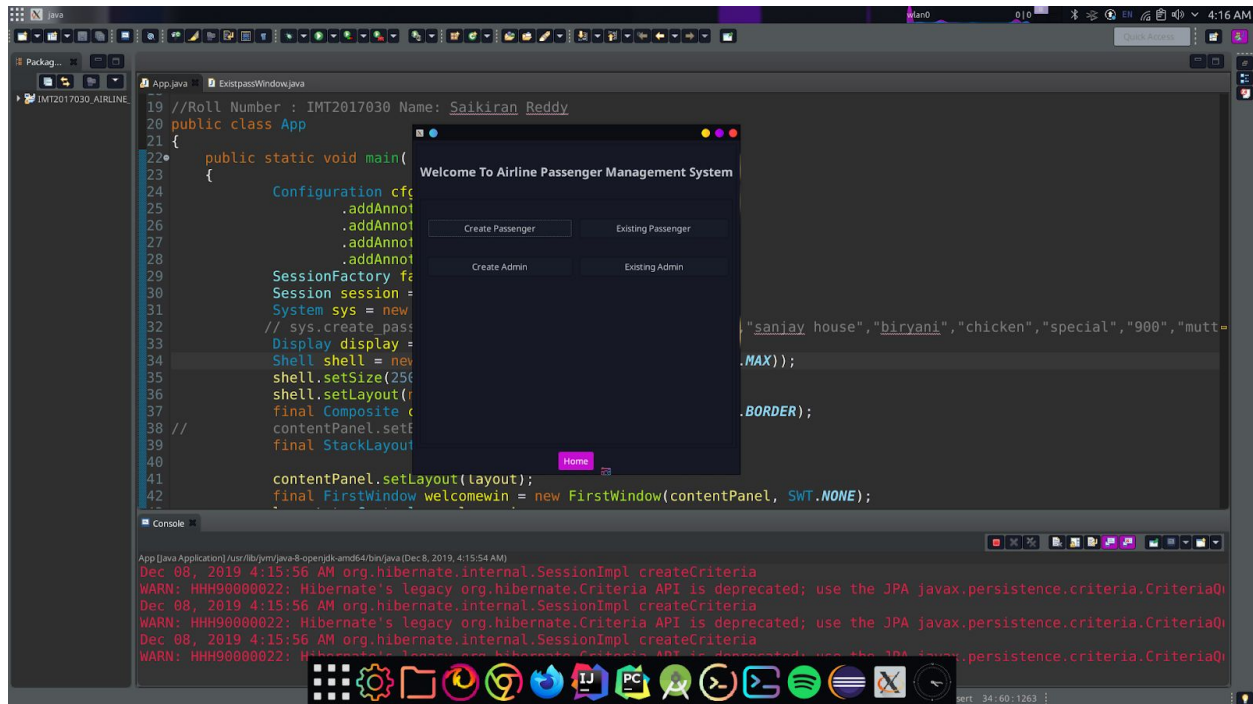
This is the Screen which comes after pressing 'Create Passenger' Button. In here the details are filled and when 'OK' button is pressed a Passenger details row is created in PASSENGER table.
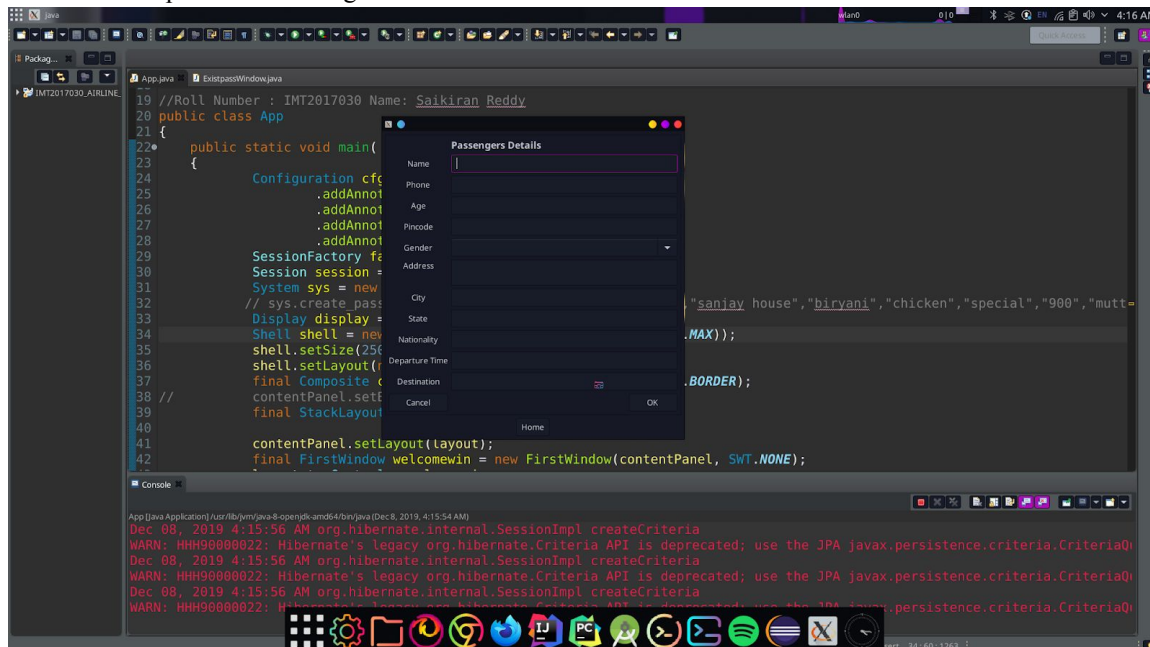
The GUI is developed to recognize which text fields are not filled to show warning Red labels for unfilled ones.
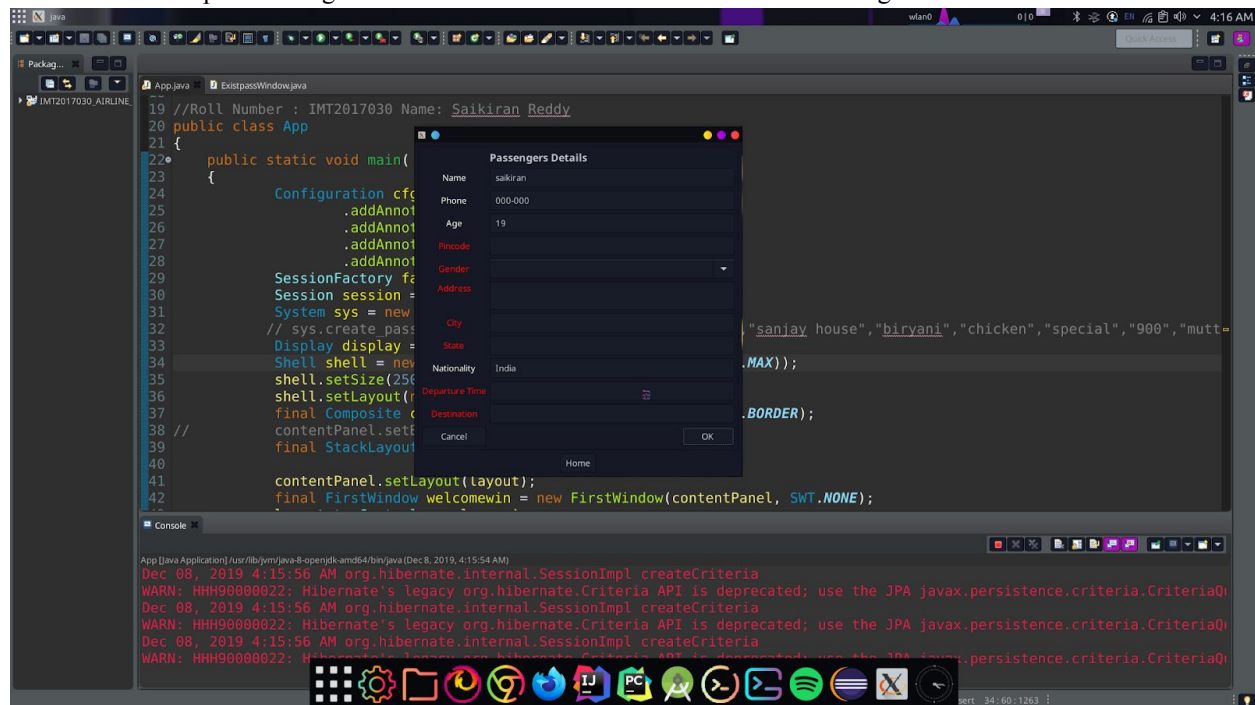
This Screen appears when 'Create Admin' button is pressed in first window. Here you will fill details for Admin which creates an Admin details row in ADMIN Table.
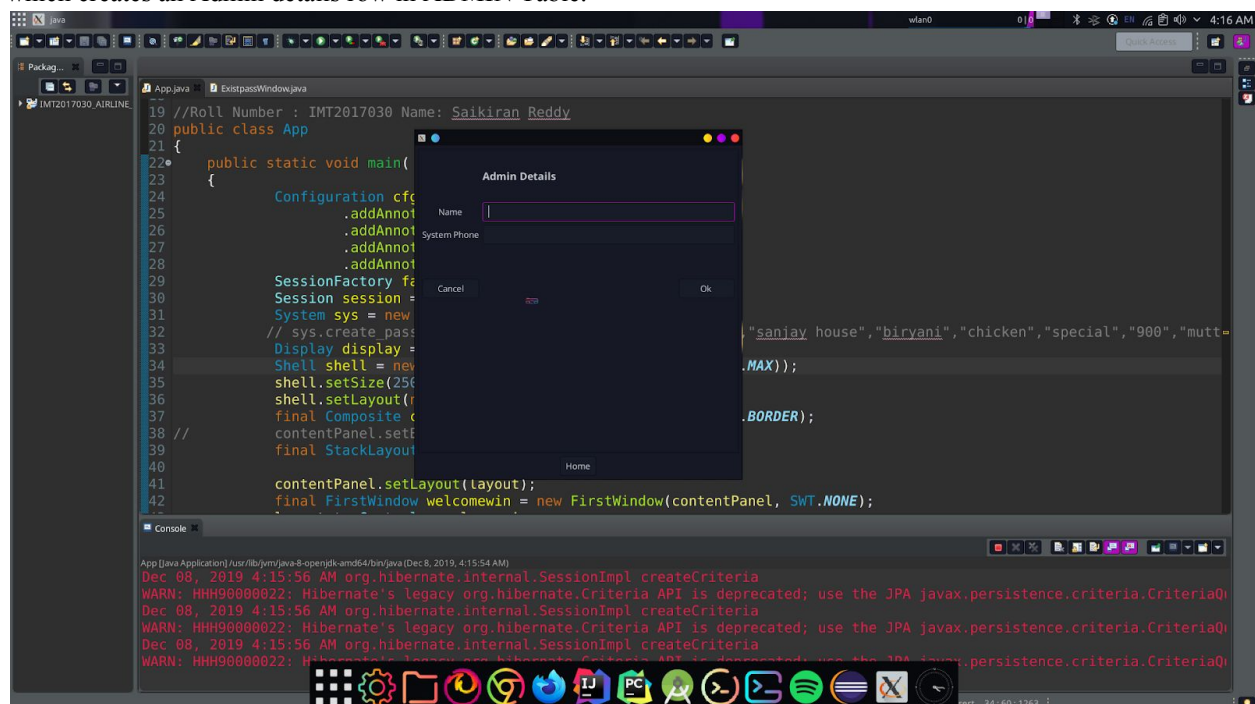
Here also you are provided with Red warning Labelling to show which fields are unfilled and provides the info in Warning below.
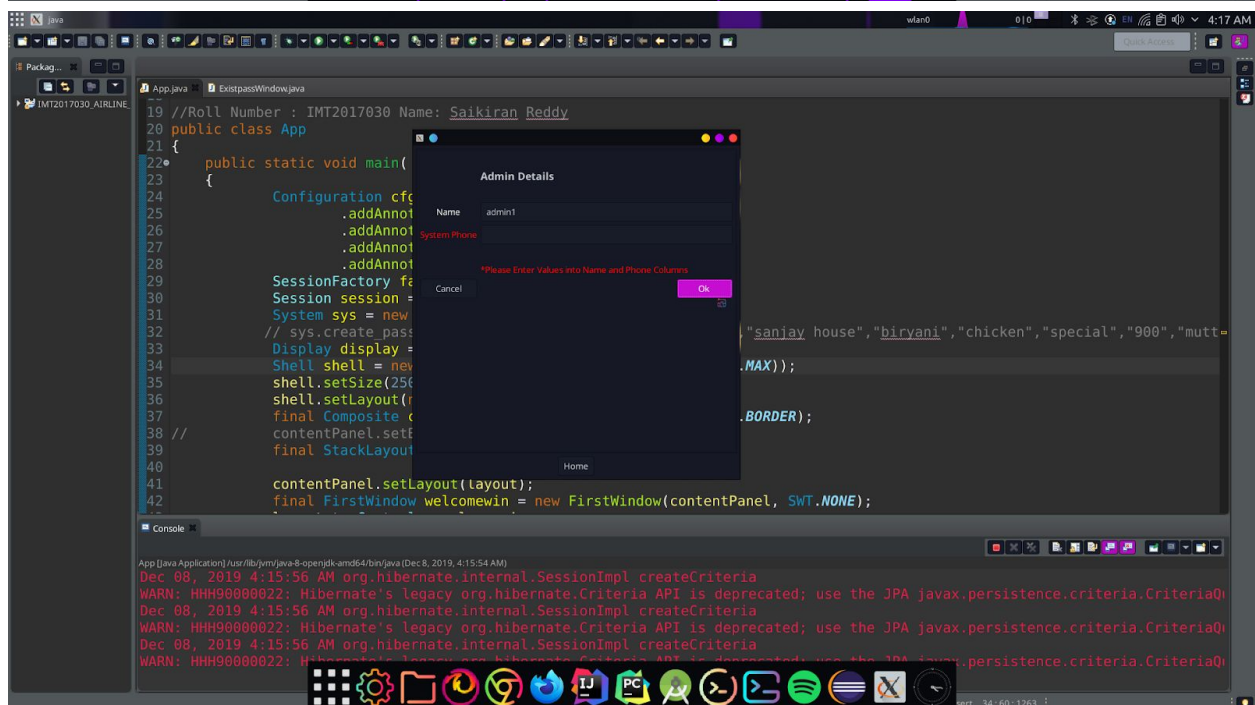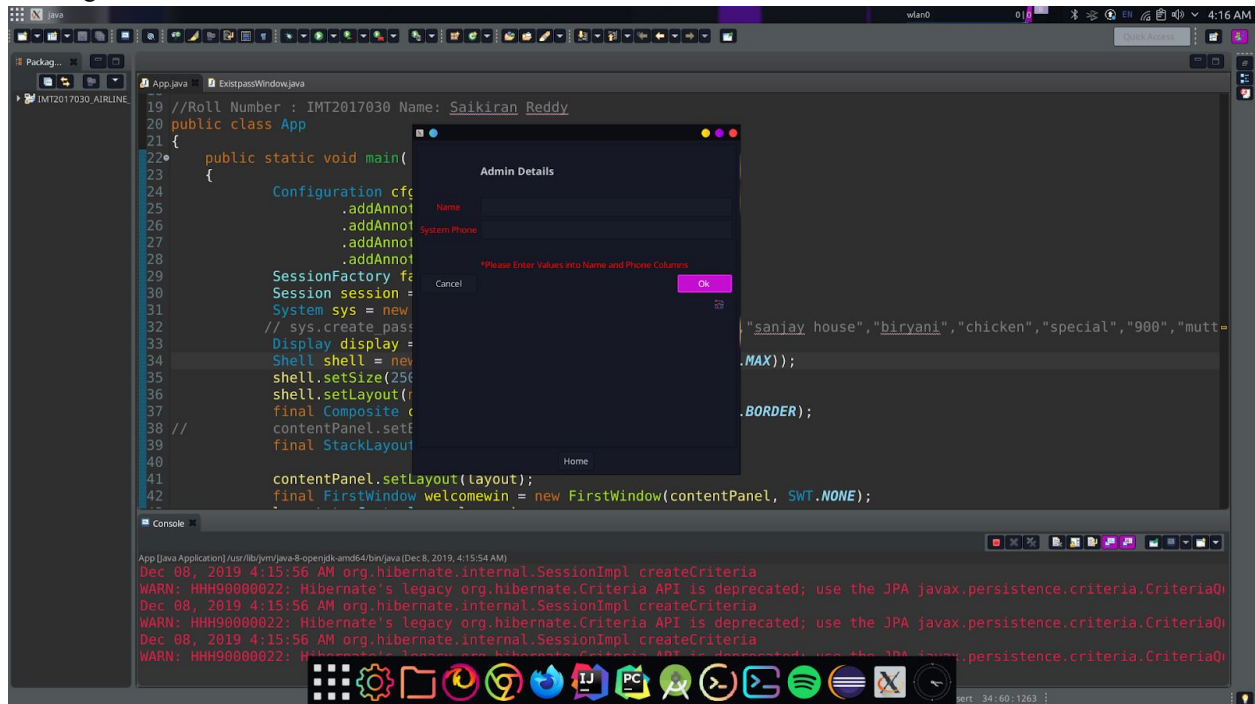
This is the Screen which appears when 'Existing Admin' button is pressed. Here you login to Existing Admin Account present in the database by either providing ID or giving name and phone number.
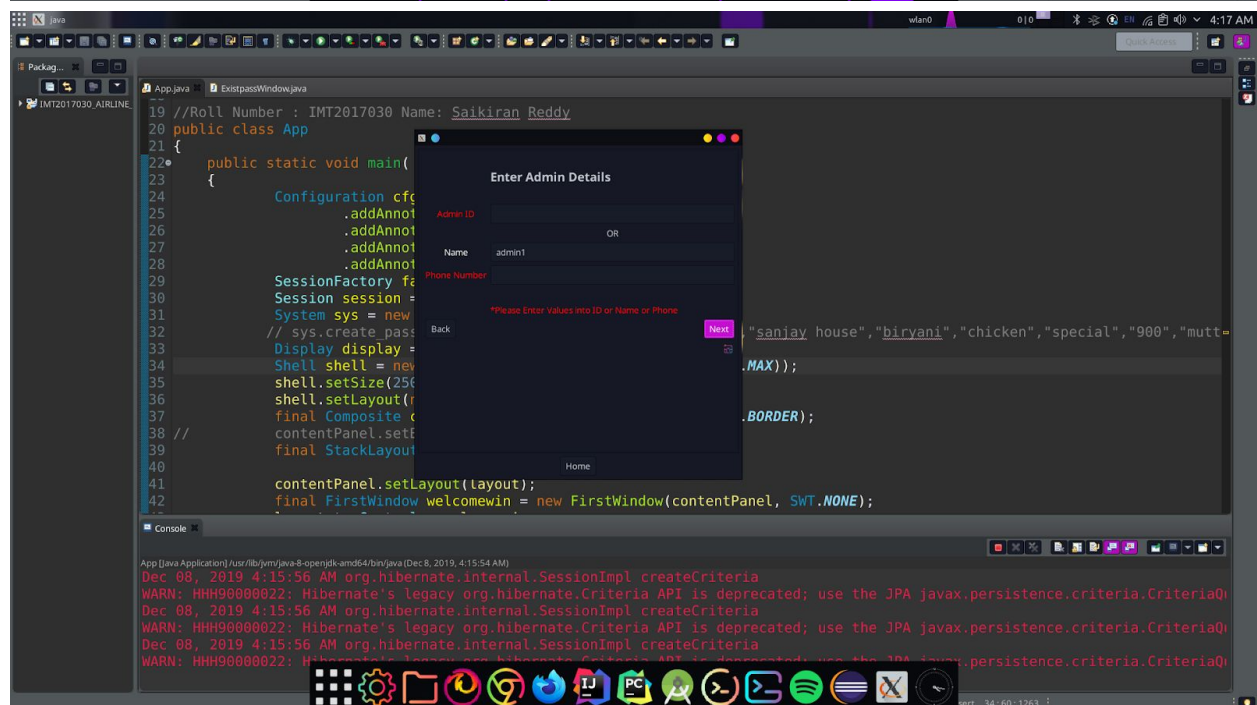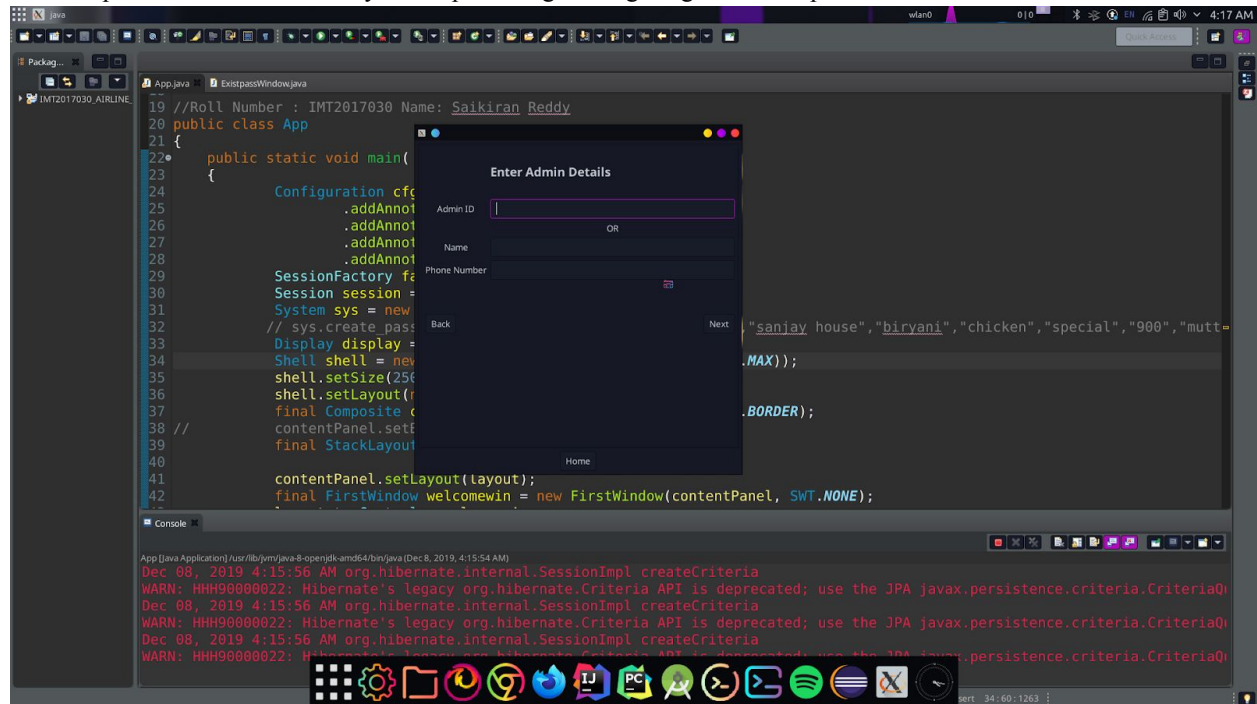
If you provide an Unknown Id or Name and Phone Number which does not exist in Database the Warning Label Changes which tells to provide Valid Details.
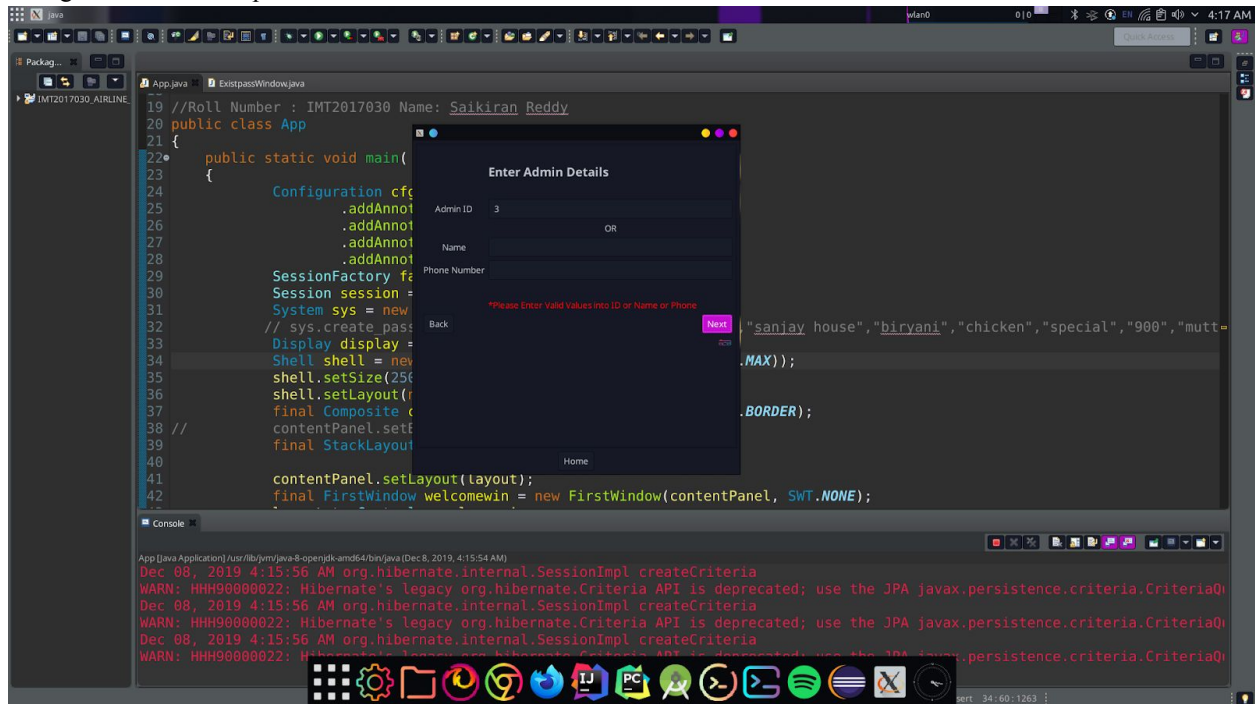
This is the Screen which Appears after creating or logging into existing Admin. Here It Provides features such as Flight Cancel or Search Passenger Details.
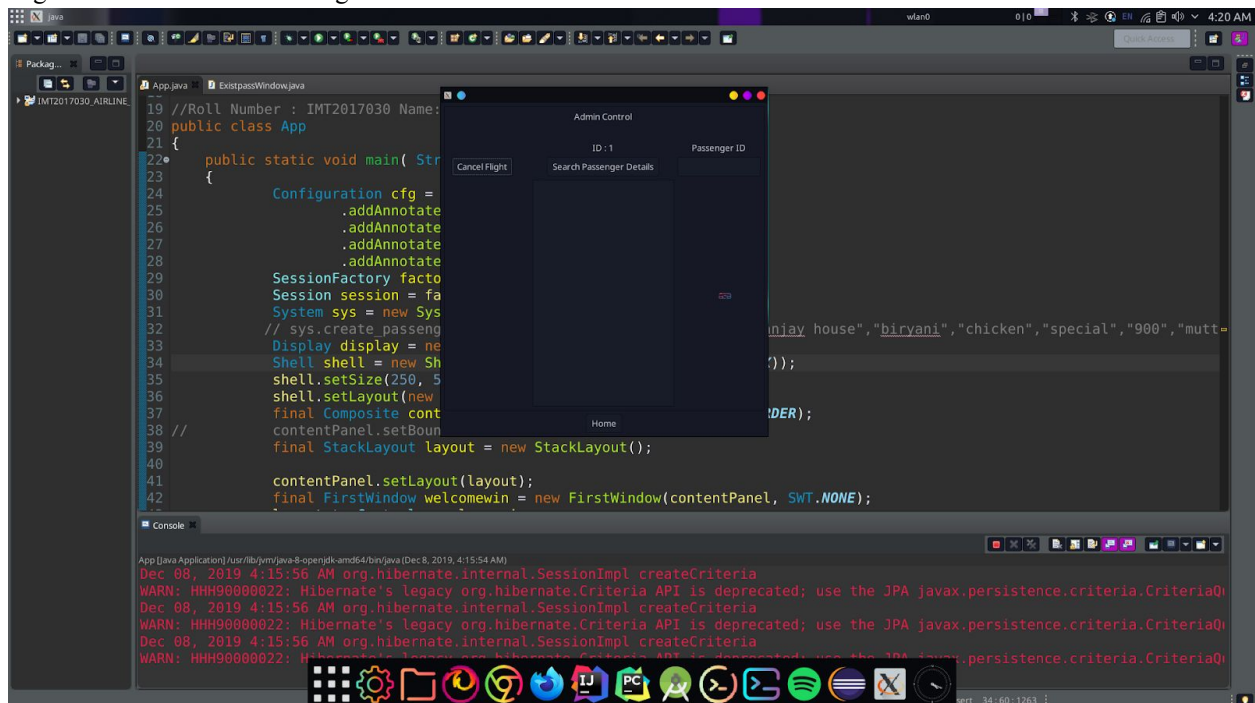
The Passenger Id Label will turn Red if not provided by any input and searched for it.
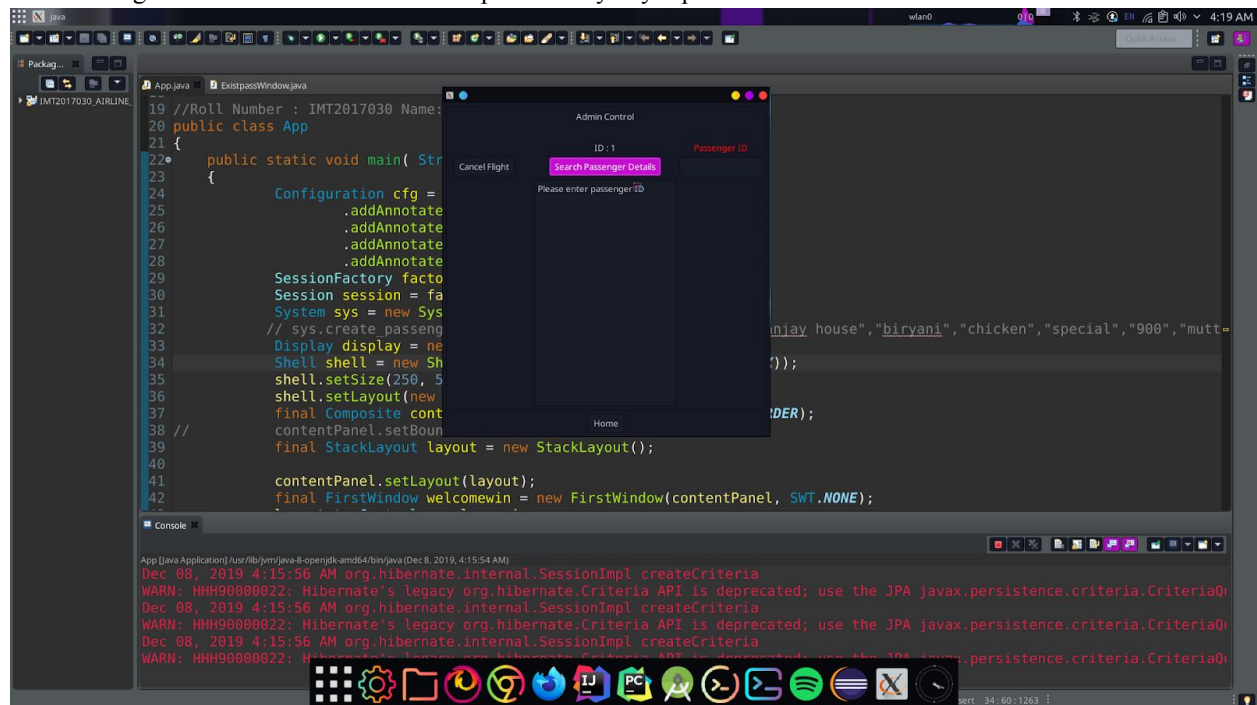

If you provide valid input the gui will display details of the Passenger which was retrieved from Database.
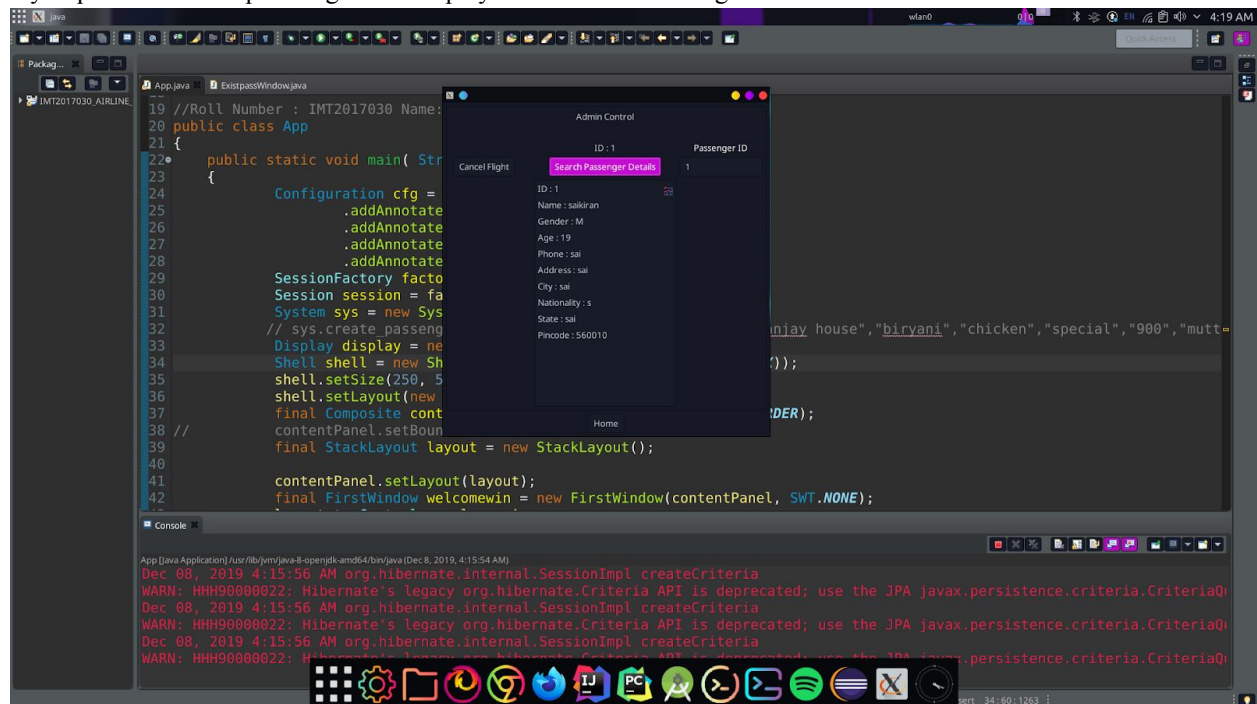
If you have given wrong Id for Passenger or the Id doesn't exist in Database then the warning changes to Enter a Valid Input into Passenger ID.
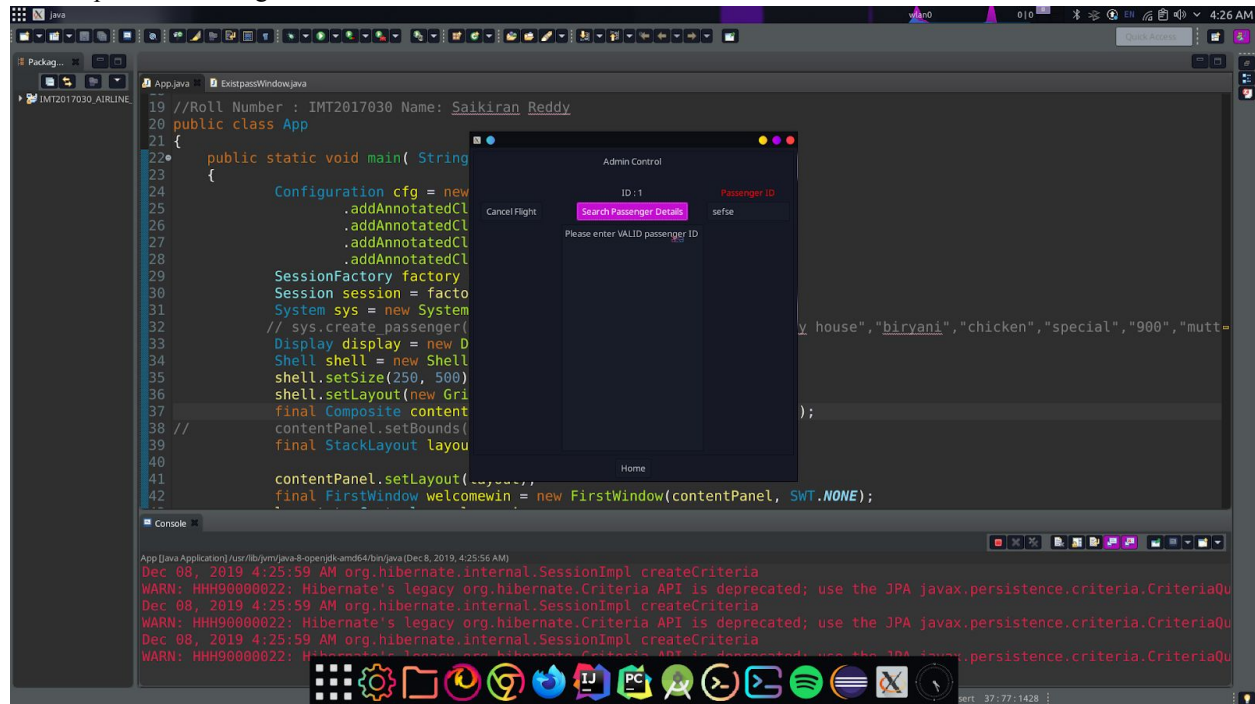

If you Press Cancel flight all reservations and tickets booed under the logged admin will be cancelled and deleted from database.
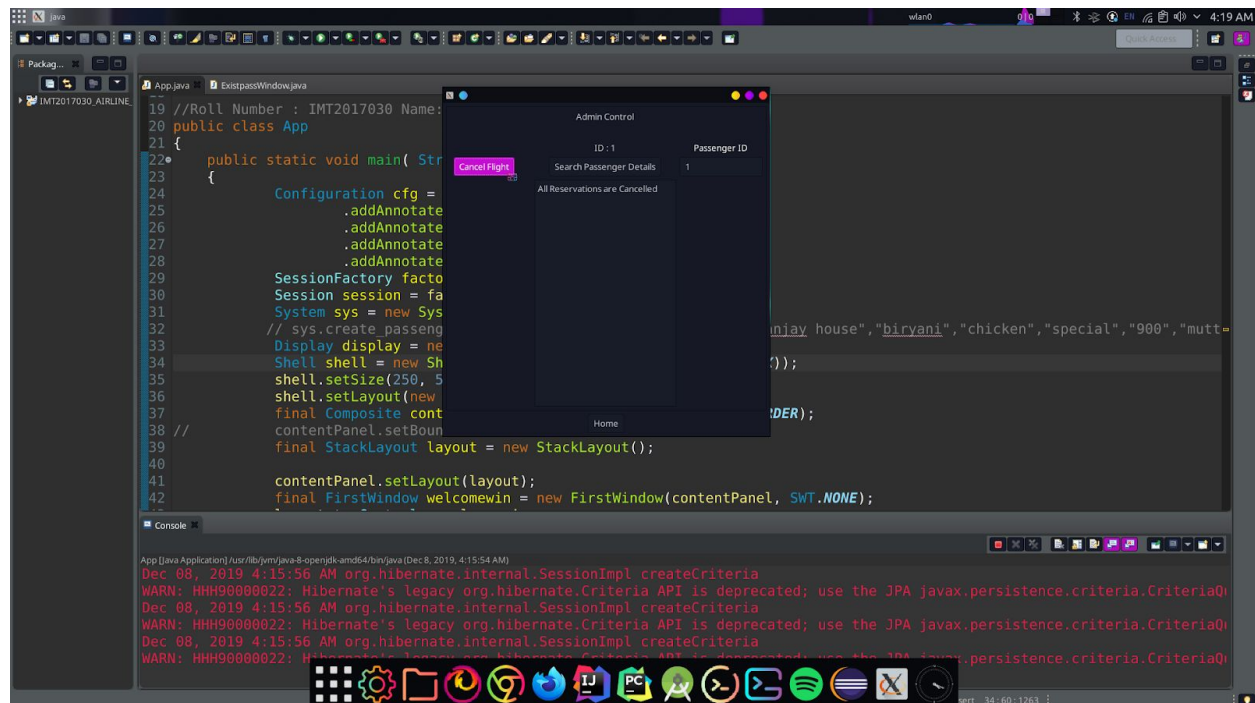
This Window appears when 'Existing Passenger' button is pressed in First Window. Here you login either through the ID or Name and Phone number provided during creation of the Account.
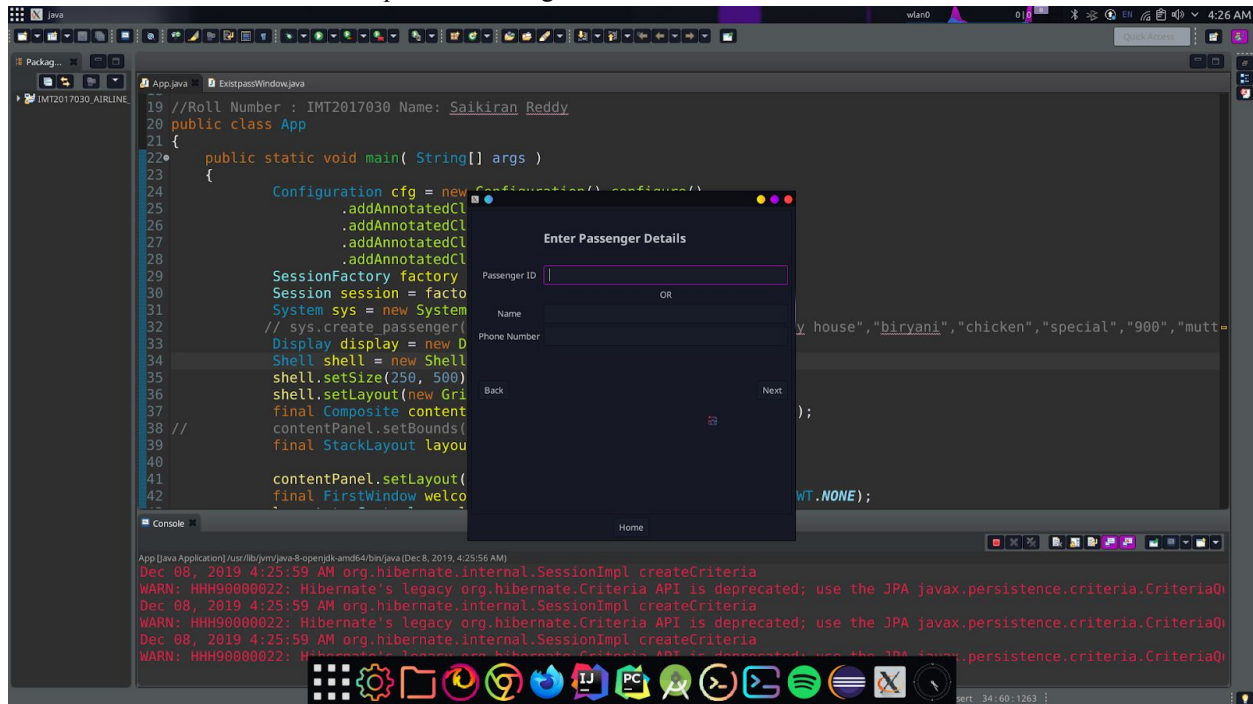

Here also you will be given a warning if you provide non-valid ID or Name or Phone number by warning Label in the GUI.
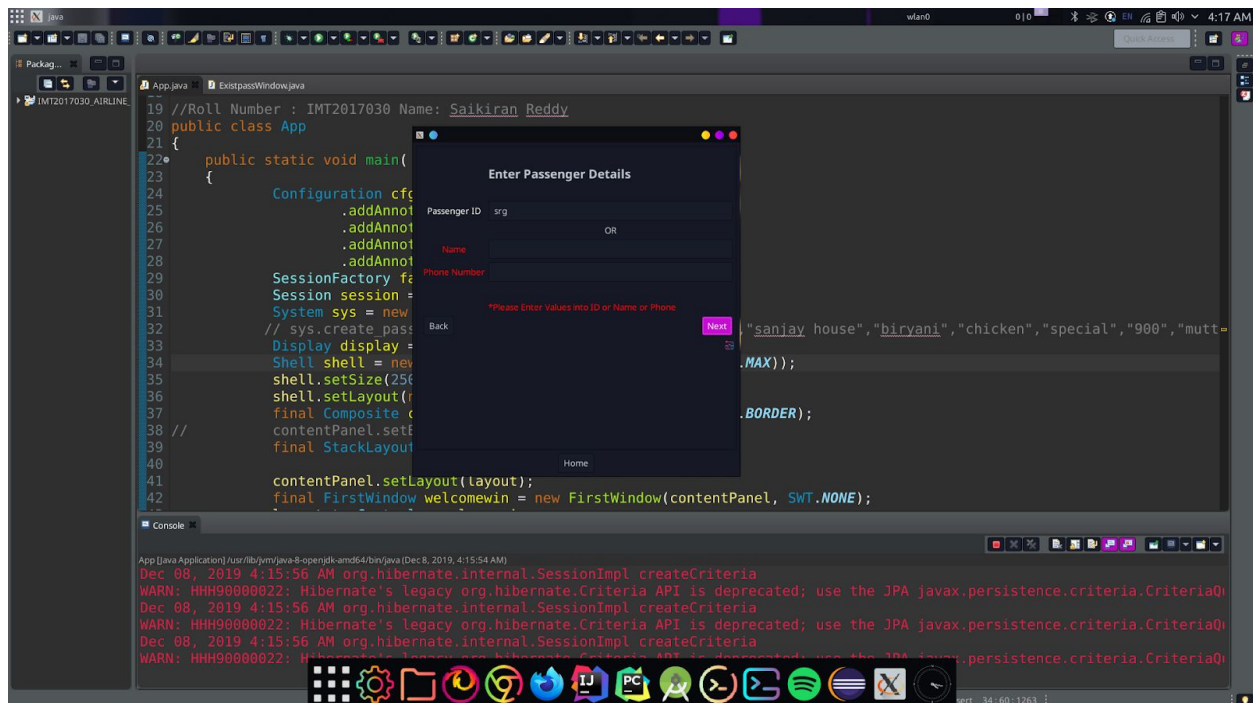
This Window Appears when we create or login to existing Passenger. Here we can book ticket cancel last ticket booked and show details of the last ticket booked.
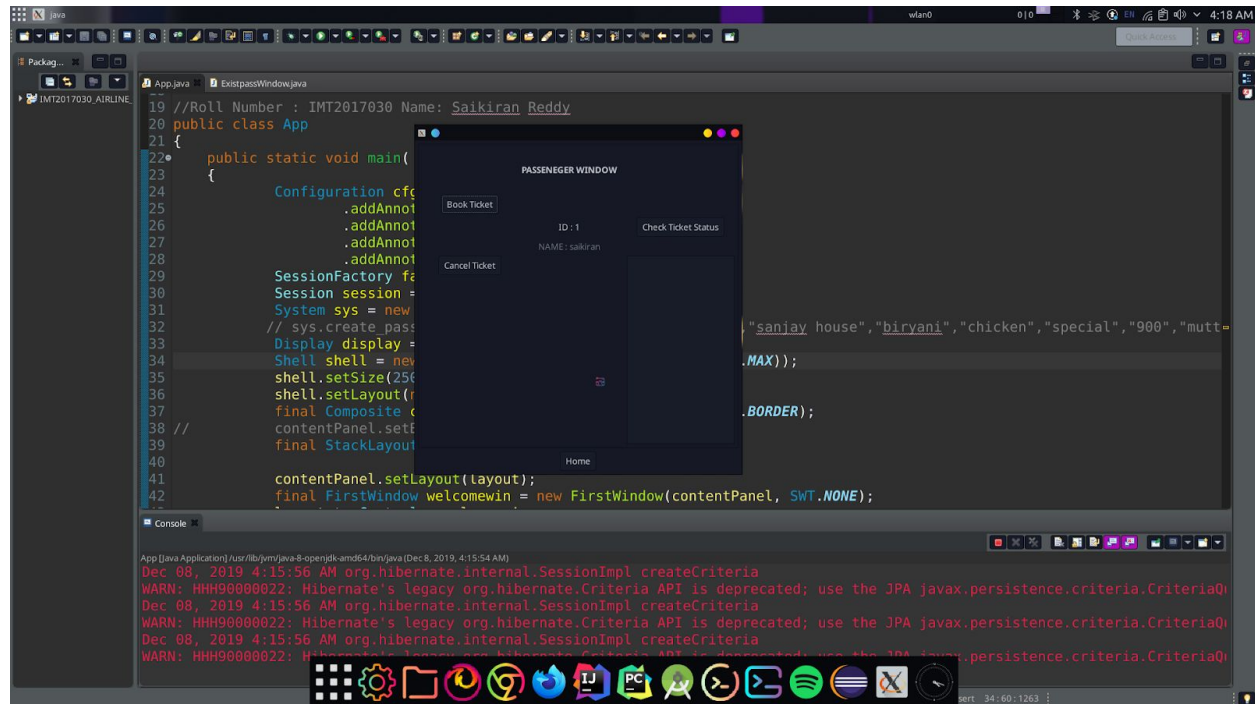

The Last Ticket Status can be seen by pressing 'Check Ticket Status' button. It will show the details of Last ticket Booked by the logged Passenger from TICKET table.
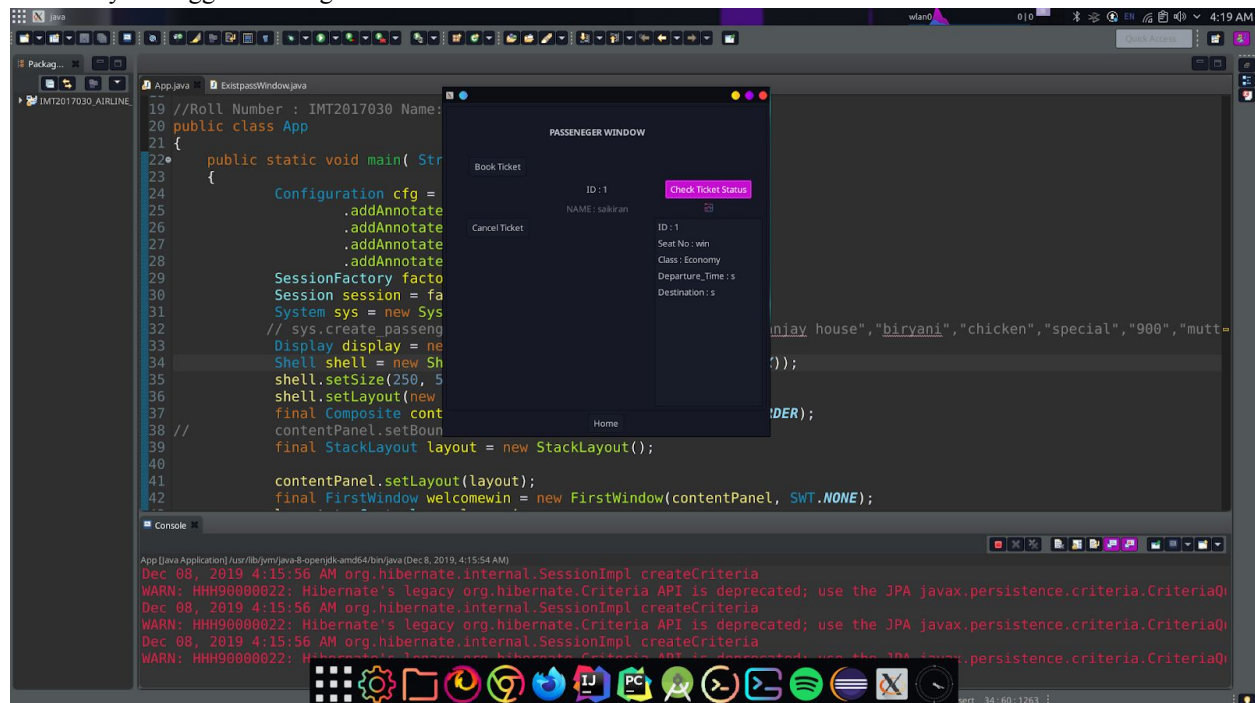
You can cancel ticket by pressing 'Cancel Ticket' button which cancels last ticket bought by passenger and if you keep on pressing the button before tickets will get cancelled when no Tickets to cancel are left it will display in the GUI. It will delete the Reservation and Ticket Information form RESERVATION and TICKET Table.
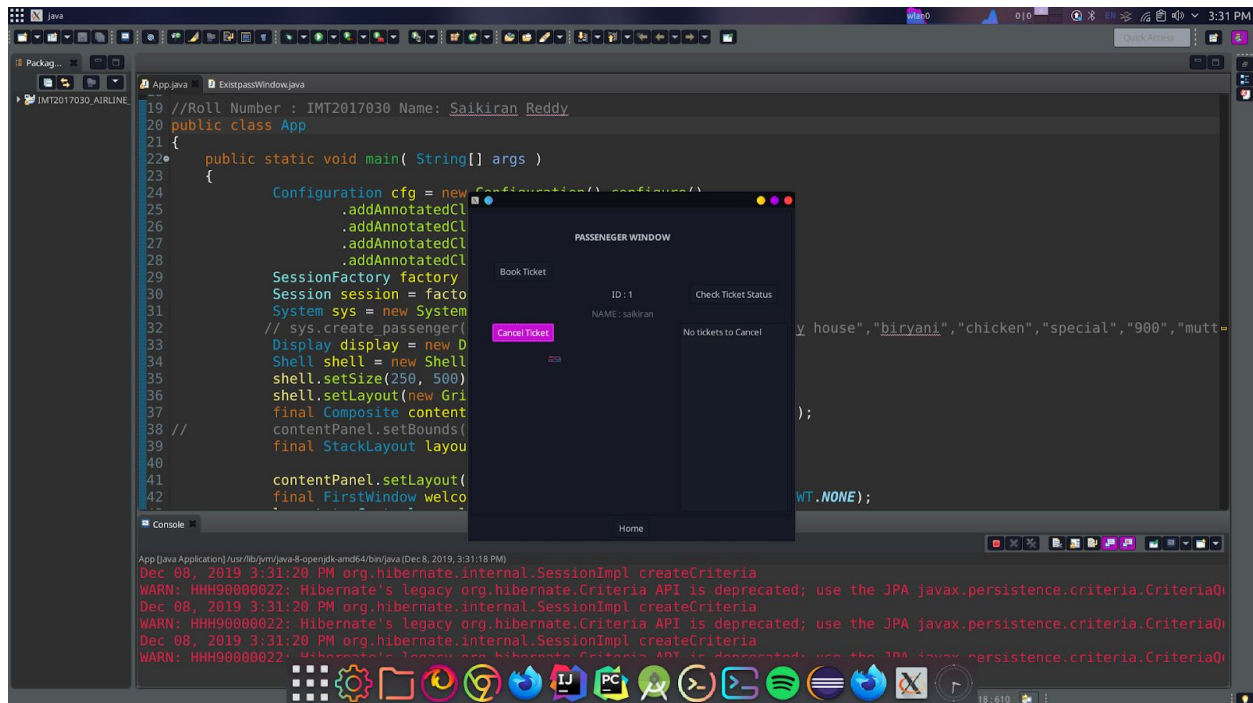

If you ask for ticket status when no tickets are booked or all are cancelled then GUI will tell to Book a Ticket which can be done by Pressing 'Book Ticket' button.
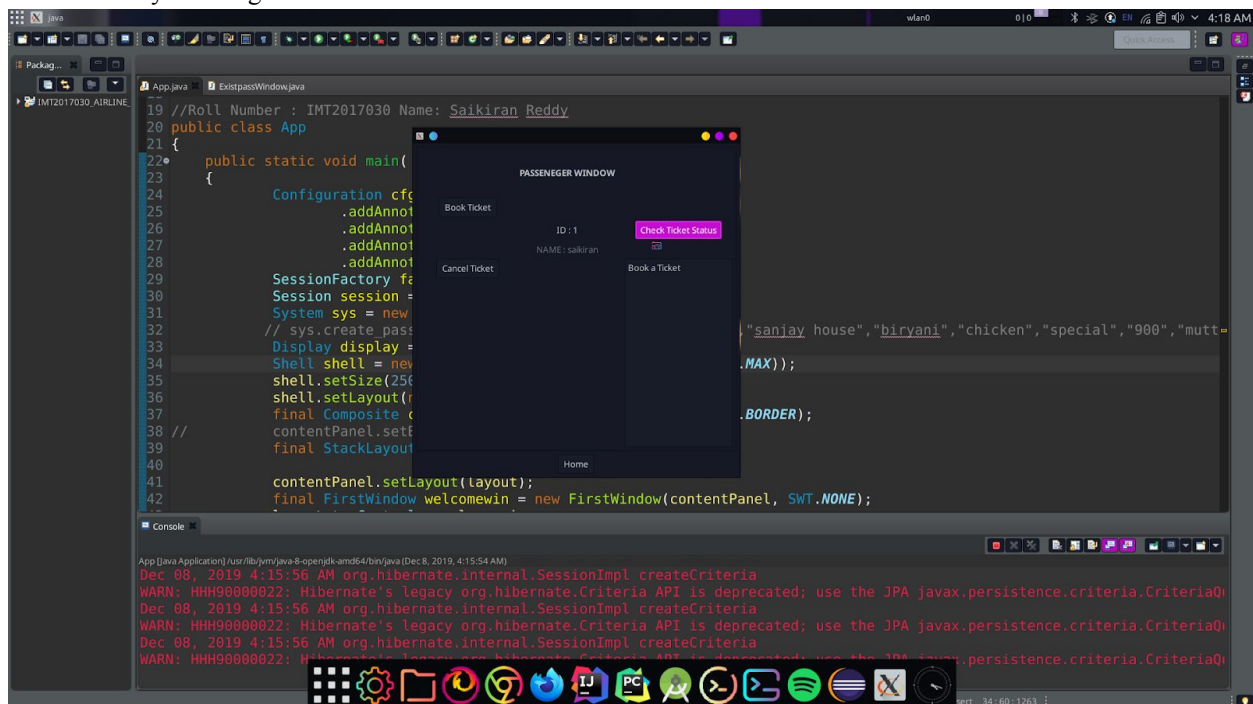
This Screen will appear when 'Book Ticket button is pressed this screen will have drop downs to select options with which passenger can book a Ticket. It will create Ticket details row in TICKET Table.
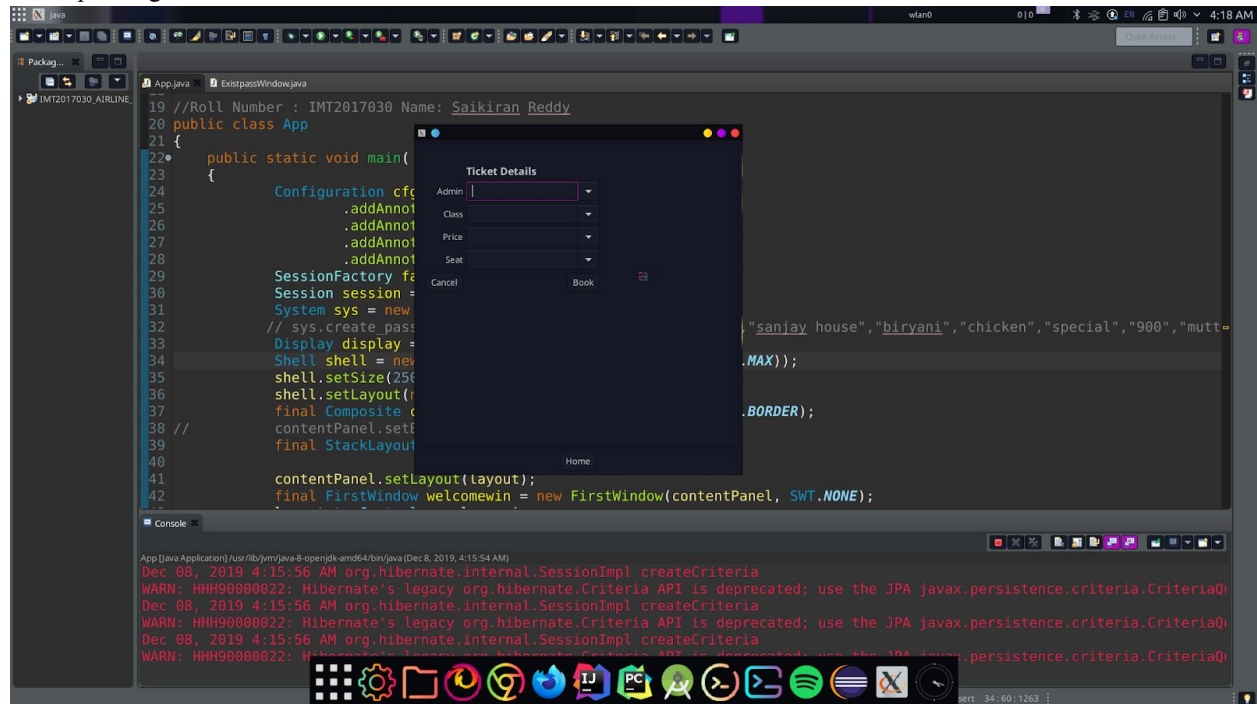
Here Admin drop down is present which defaults to last admin which is present in drop down if not selected who supervises this reservation of Booking ticket.
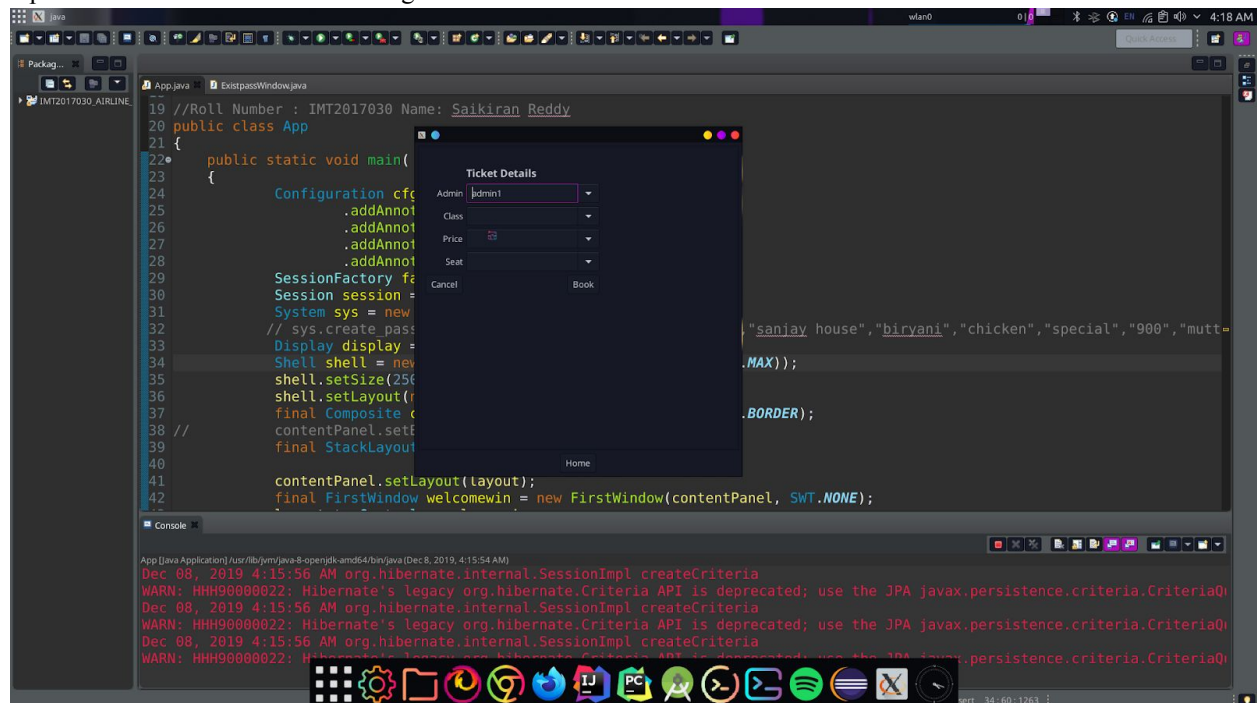
When DropDowns are not selected they give warning through red labelling unselected drop downs except admin which defaults to last admin present in the list of admins.
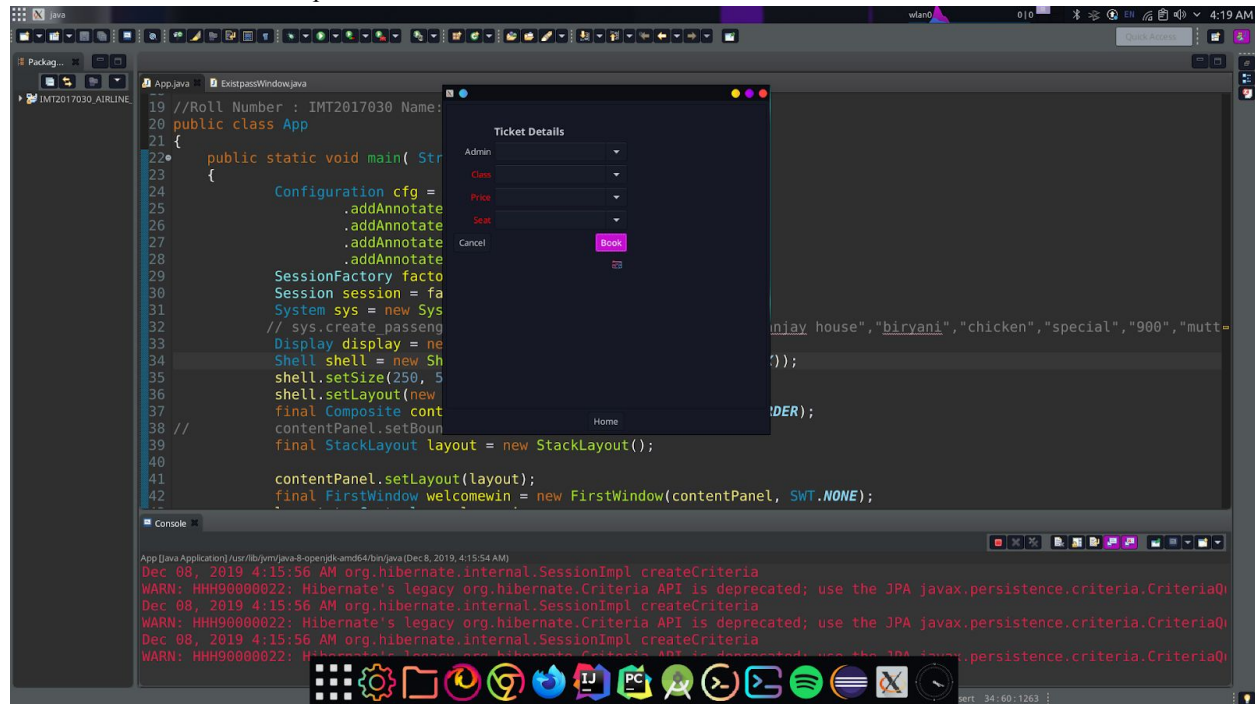
Note:

If you GUI is not appearing in the Size provided in above Screenshots please close the window and run again. This seems to solve the problem of Window resizing.

GUI is done using SWT written in native java using stacklayout to change screens and grid layout to position labels and fields and combos in the SWT Composite Window. The backend is integrated by helper class called System which performs crud operations on required tables and retrieving necessary items to display in GUI.

I purposely removed Maximizing this window as Grid layout does not support reshaping elements in the layout but minimizing , close and Title is present on the title bar of window.