

## Lab Exercise 5: GUI and Event Handling

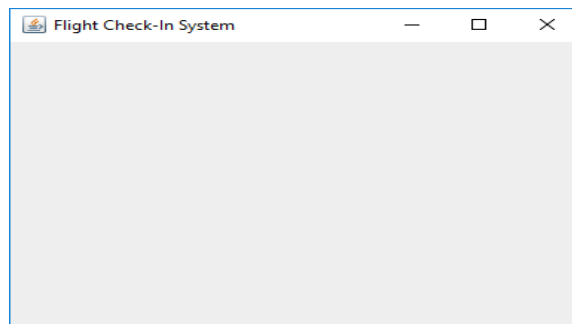
ALL

### Problem Description

Previously you have developed a FlightPlan System. An upgrade is required to allow passengers to perform self check-in and have their boarding passes printed. Although the system works perfectly as required, the system users had complained that the system's user interface is very dull and boring. So, now the client wants you to upgrade the system's user interface and make it attractive and more user-friendly. A passenger can choose to check-in using passport number, eTicket number or booking reference number.

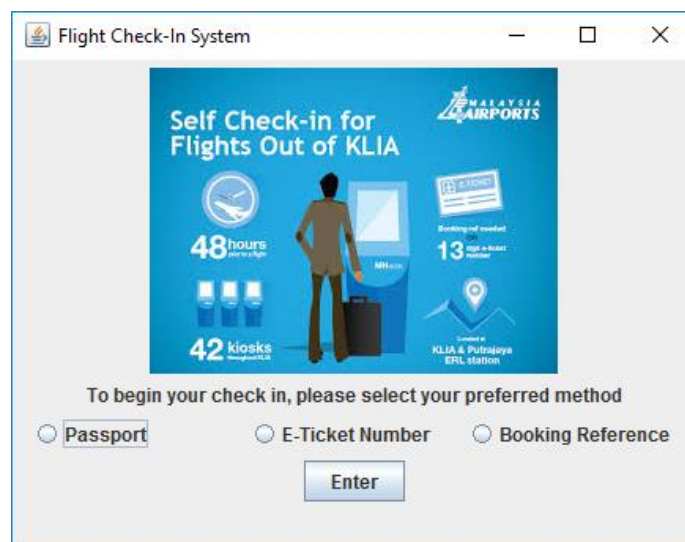
### Stage 1

1. Create a Java project named Lab5-A-Stage1-Frame.
2. Define a class named LoginScreen that will produce the following GUI.



### Stage 2

1. Create a Java project named Lab5-A-Stage2-GUI.
2. Copy class LoginScreen from your Stage 1, and modify the class so that it will produce the following GUI.

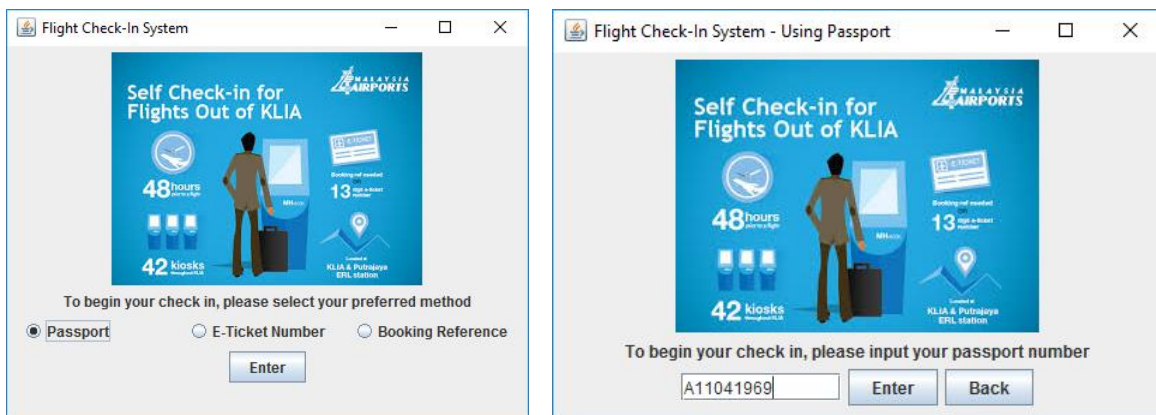


Note:

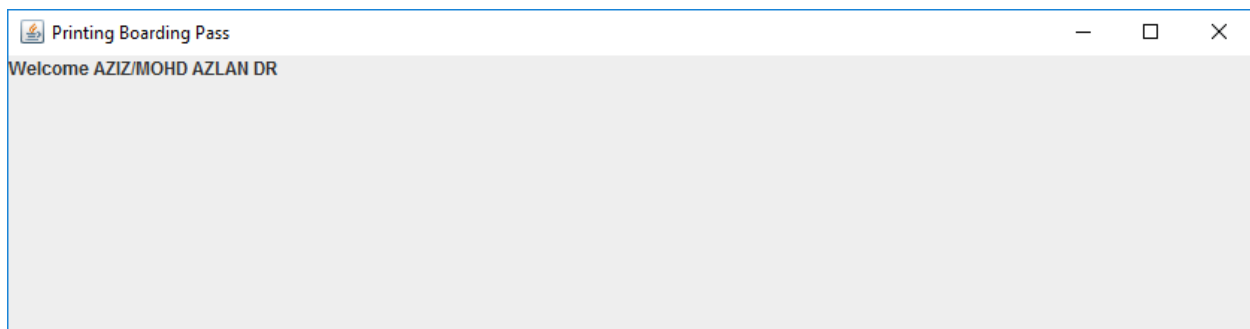
- You may refer to Java eclipse project “Lab5-Example1” in folder “examples” to see how to display image.
- The file of the image in the above GUI is in folder “image”.
- At this stage you do not have to implement event handling – so, nothing happens when “Enter” button is clicked.

### Stage 3

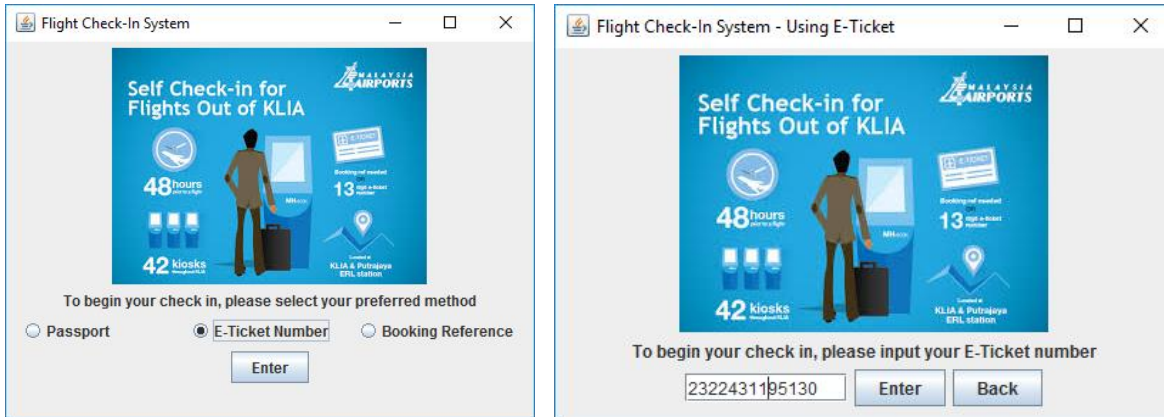
1. Create a Java project named Lab5-A-Stage3-Event.
2. Copy class PassportMenu, ETicketMenu, BookingPNRMenu, Flight, BoardingPass and Passenger, from folder “stage3and4” into your Java project.
3. Copy class LoginScreen from your Stage 2.
4. Modify class LoginScreen by adding:
  - registering event sources and event listeners
  - implementing `itemStateChanged(ItemEvent e)` and `actionPerformed(ActionEvent e)` methods so that :
    - If radiobutton Passport is selected LoginScreen will disappear and PassportMenu will appear, as shown below.



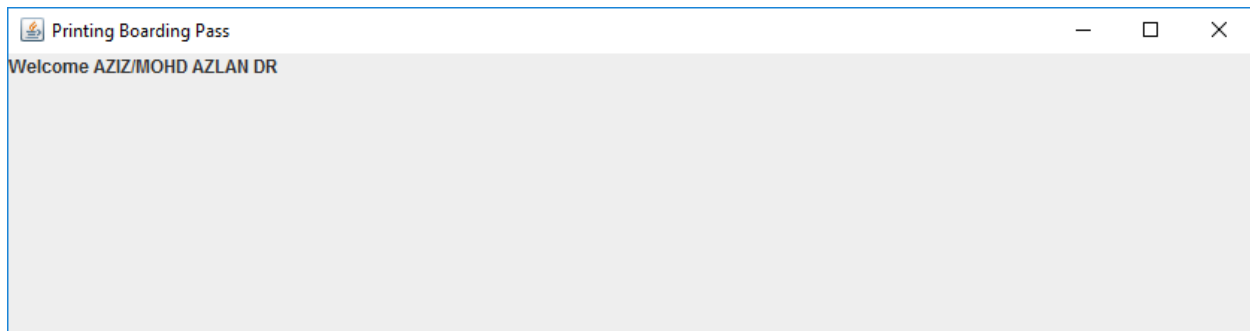
And when valid passport number is entered (valid passport numbers are “A11041969” and “A05092010”) and “Enter” button is clicked, PassportMenu will disappear and BoardingPassScreen will appear, as shown below.



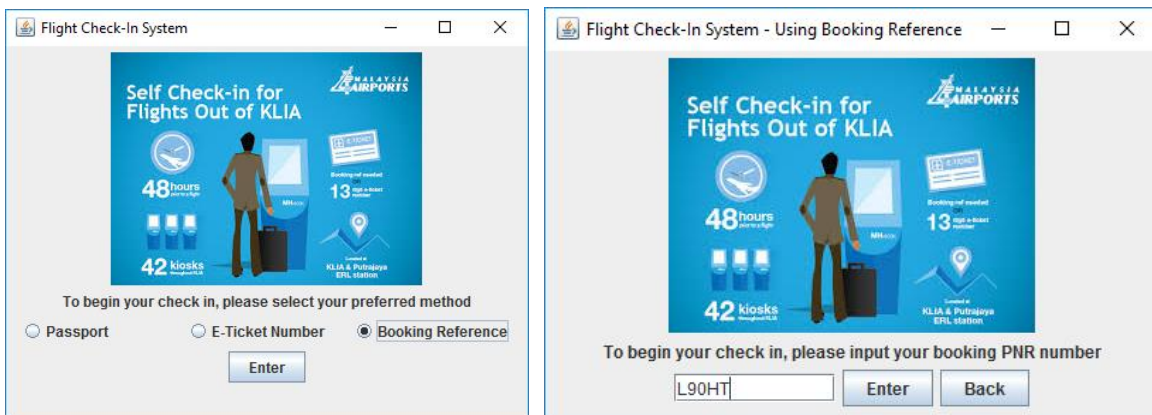
- If radiobutton E-Ticket Number is selected LoginScreen will disappear and E-TicketMenu will appear, as shown below.



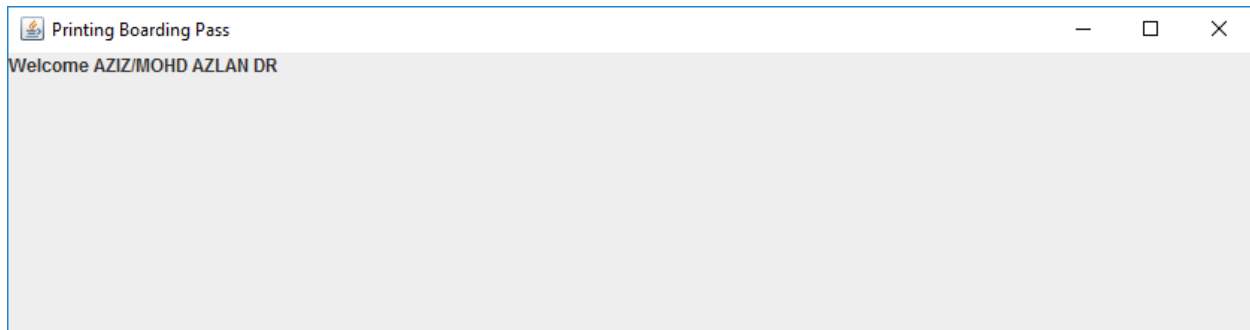
And when valid E-Ticket number is entered (valid eTicket numbers are “2322431195130” and “2322431195137”) and “Enter” button is clicked, ETicketMenu will disappear and BoardingPassScreen will appear, as shown below.



- If radiobutton Booking Reference is selected, LoginScreen will disappear and BookingPNRMenu will appear, as shown below.



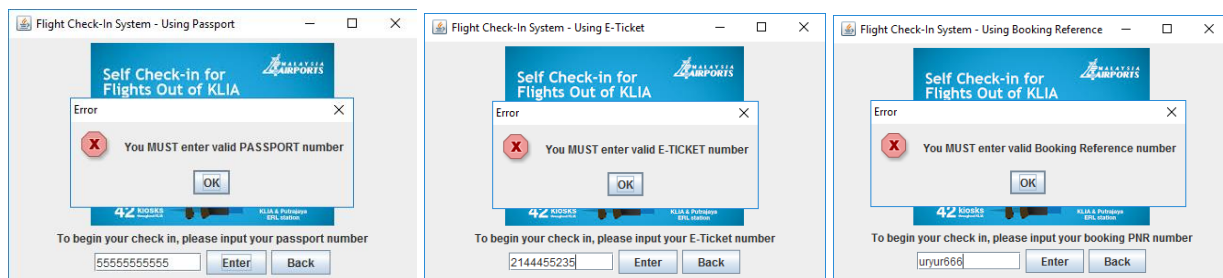
And when valid Booking Reference number is entered (valid Booking Reference numbers are “L90HT” and “L91HT”) and “Enter” button is clicked, BookingPNRMenu will disappear and BoardingPassScreen will appear, as shown below.



Note: In method actionPerformed() :

- You MUST use method isRegisteredPassenger(String s) in class Flight to check whether the input is a valid passport/eTicket/booking reference number.
- You MUST use method getBoardingPass(String s) in class Flight to get an object of BoardingPass associated with the entered passport/eTicket/booking reference number (Passenger's attributes), and pass the Flight and BoardingPass objects to the (next frame) BoardingPassScreen.
- You may refer to Java eclipse project "Lab5-Example2" in folder "examples" to see how to make current screen disappears and new screen appears (i.e., moving from one screen to another).

6. Modify the PassportMenu, ETicketMenu and BookingPNRMenu classes so that when invalid passport/eTicket/booking reference number is entered and "Enter" button is clicked, a pop-up error message will be displayed, as shown by respective screens below. User can choose the "Back" button to use different method to check-in. The current screen disappear and the previous screen (LoginScreen) will be displayed.



## Stage 4

1. Create a Java project named Lab5-A-Stage4-GUI2.
2. Copy class PassportMenu, ETicketMenu, BookingPNRMenu, Flight, BoardingPass and Passenger, from folder "stage3and4" into your Java project.
3. Copy class LoginScreen from your Stage 3.
4. Copy-and-paste the following line of code into method actionPerformed() in PassportMenu, ETicketMenu and BookingPNRMenu classes as an instance variable.

```
flight = new Flight("HEATHROW-LONDON", "KUALA LUMPUR", "MH001", "19 APR", "22:00");
```

4. Modify class BoardingPassScreen so that it will produce the following GUI, after a valid Passport/e-Ticket /Booking Reference number is entered and “Enter” button is clicked.

Input example: Passport No: A11041969/E-Ticket No: 2322431195130/Booking ref No: L90HT will produce the following boarding pass:

Name		Frequent Flyer Number		Security Number	
AZIZ/MOHD AZLAN DR		MH 304662573 BLUE		40	
From	To	SSR	Flight Number	Date	Departure Time
HEATHROW-LONDON	KUALA LUMPUR	MOML	MH001	19 APR	22:00
Gate	Gate Opens	Class	PNR	Seat	E-Ticket Number
A	21:00	O	L90HT	58A	2322431195130

Input example: Passport No: A05092010/E-Ticket No: 2322431195137/Booking ref No: L91HT will produce the following boarding pass:

Name		Frequent Flyer Number		Security Number	
MOHD AZLAN/MARWA HUMAIRA MS				41	
From	To	SSR	Flight Number	Date	Departure Time
HEATHROW-LONDON	KUALA LUMPUR	MOML CHD	MH001	19 APR	22:00
Gate	Gate Opens	Class	PNR	Seat	E-Ticket Number
A	21:00	B	L91HT	58B	2322431195137

Note:

Use the following for creating new font style:

```
Font fontLabel = new Font("Serif", Font.PLAIN, 14);
Font fontValue = new Font("Serif", Font.PLAIN, 14);
```

Method `setFont(fontLabel)` and `setForeground(Color.BLUE)` to print blue coloured labels.

Method `setFont(fontValue)` and `setForeground(Color.BLACK)` to print black coloured values.

Use the following for creating new font style for printing Ticket Class label:

```
new Font("Serif", Font.BOLD, 16) and method setForeground(Color.BLACK)
```