

**KING SAUD UNIVERSITY COLLEGE OF COMPUTER AND INFORMATION
SCIENCES Computer Science Department**

CSC113: Introduction
to programming II

Lab Project (Phase #2)
deadline date: 11/5/2024

Second Semester
1445 H

Project introduction: Project introduction: Our program is specific to flights, so that the flight manager can display all passenger data and can modify the passenger's reservation if the passenger wants to add a flight, cancel a flight, search for a flight, or display flight data so that it is easier for him to search, and the flight manager can specify the flight for the passenger if he wants it for business or Economical and each option differs in the features of the size of the bag that will be carried. The extension was created to verify the data format that was specified and GUI where the user can enter flight data and then another interface in which the flight data is displayed.

File:

1-saveData Method:

Functionality:

The saveData method is responsible for saving flight data to a file using serialization. It takes an Airline object airline as a parameter, which contains the flight data to be saved. The method creates a new file with the airline name and a .data extension, where the flight data will be stored. It opens a FileOutputStream to write data to the file. Then, it creates an ObjectOutputStream to serialize flight objects and write them to the output stream. The method iterates through the flights in the airline, serializes each flight object, and writes it to the output stream. After writing all the flight data, it closes the ObjectOutputStream.

2-loadData Method:

Functionality:

The loadData method is responsible for loading flight data from a file using deserialization. It takes an Airline object airline as a parameter, where the loaded flight data will be stored. The method opens a FileInputStream to read data from the file. Then, it creates an ObjectInputStream to deserialize flight objects from the input stream. The method reads flight objects from the input stream, deserializes them, and adds them to the airline's flight list.

Exceptions:

1. Handles InputMismatchException:

- Scenario 1: This occurs when the user selects a choice from the menu but inputs a non-integer value instead of a numerical option.
- Scenario 2: This happens when the user attempts to add a passenger, but one of the inputs provided is not of the expected type (e.g., entering a string instead of a numeric value for passenger age).
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2. Throws InvalidTimeFormatException:

- This exception is raised by the isValidTimeFormat method.
- It occurs if the time string provided by the user deviates from the HH:MM format or if the hours and minutes fall outside the valid ranges (hours: 00-23, minutes: 00-59).
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3. Various flight-related operations handle PassengerAdditionException:

- This custom exception is employed when there's an issue adding a passenger to a flight.
- It can be triggered under the following circumstances:
 - Error occurs while collecting passenger information.
 - Addition process fails due to specific conditions not being met.
 - All seats on the flight are occupied, preventing the addition of more passengers.

File Exceptions:

1. FileNotFoundException and IOException:

- Handled in loadData and SaveData methods.
- Indicates issues with file operations such as file not found or I/O errors.
- Users are notified of the specific file-related problem encountered.
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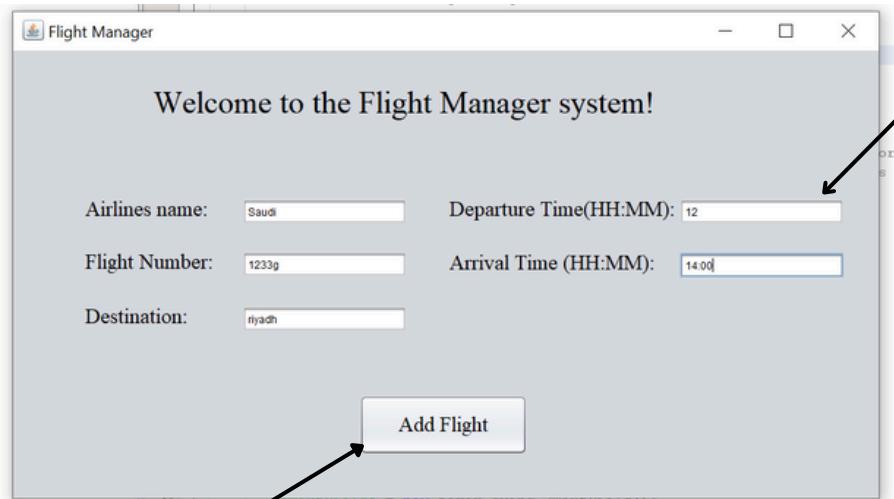
2. EOFException:

- Handled in loadData method.
- Indicates unexpected end of file during reading.
- Signifies successful completion of file data loading.
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3. ClassNotFoundException:

- Handled in the loadData method.
- Shows a problem when trying to read data from a file.
- Needs changes to make sure the program can understand the saved data.

Screenshots of GUI :

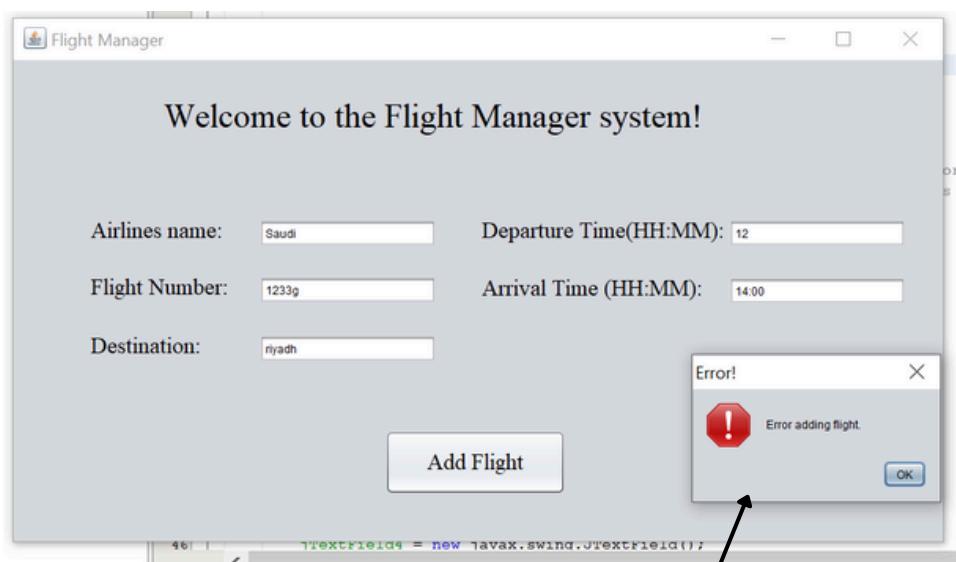


text field that saves the flight infos

Add Flight

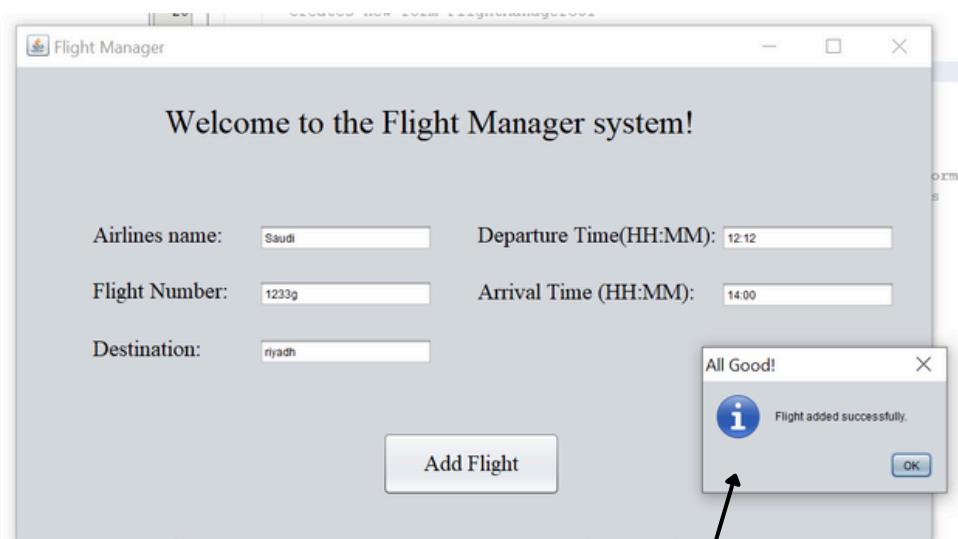
when clicked:

it checks the validate of the time and whether the information were saved successfully or not and then move to another frame



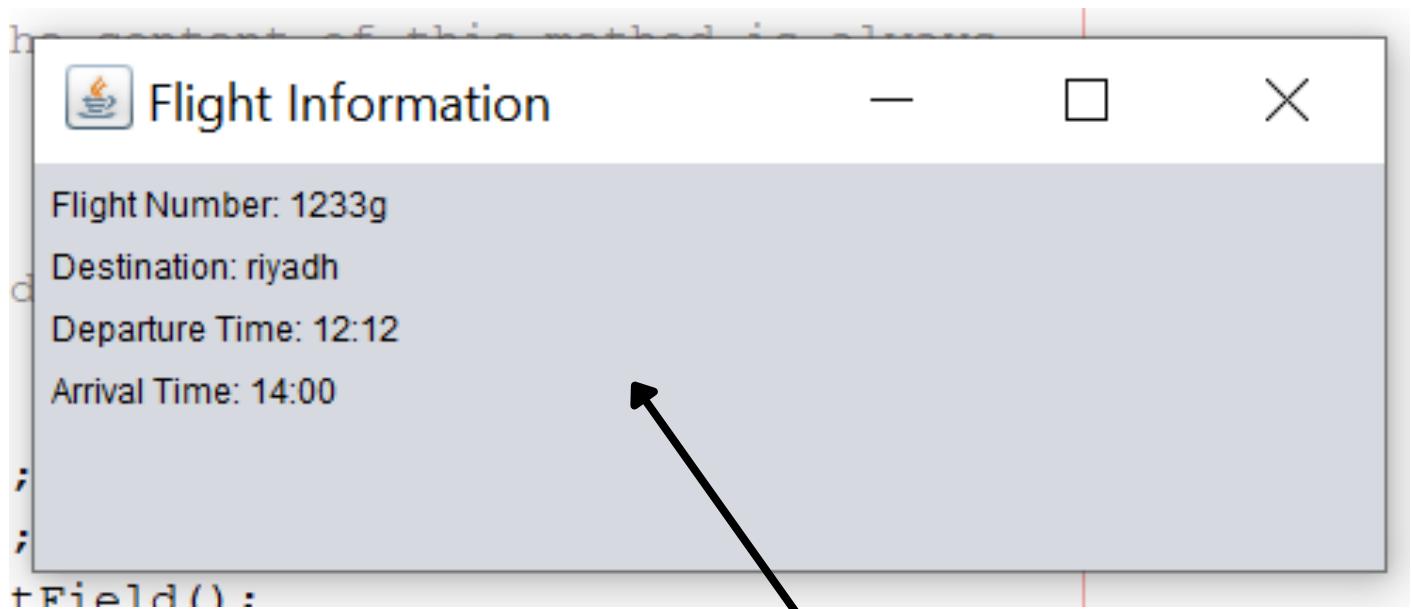
Error!
Error adding flight.
OK

an error message dialog appears when an error occurs



All Good!
Flight added successfully.
OK

an information message dialog appears when everything goes successfully



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+Field():
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another frame shows up with
the information that the user
entered

Team Member:

STUDENT NAME	ID	TASKS
منار الرزین	444200065	The work was done collectively, the GUI, exception and file were divided between us, then the errors were modified and reviewed collectively, and most of the work was done collectively
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