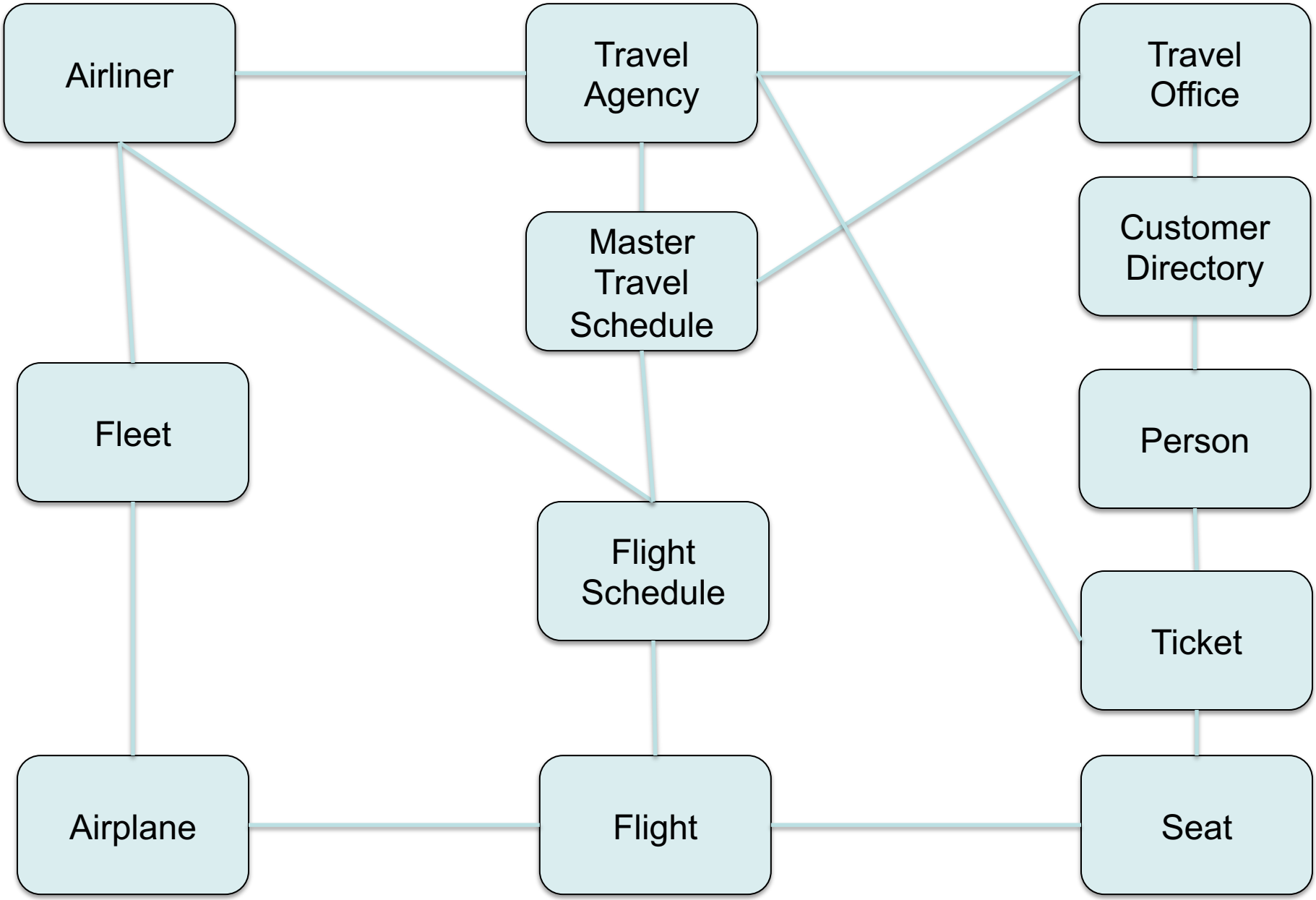
Implement the following 3 use cases

1. Manage Travel Agency
    1. Search and list all flights (from and to) (across all airliners)

2. Register Airliners
    1. Create new airliner
    2. View airliner profiles

3. Manage customers
    1. Search for best flights
    2. Book customer reservation on a flight


Airliner
Travel Agency
Travel Office
Master Travel Schedule
Customer Directory
Fleet
Person
Flight Schedule
Ticket
Airplane
Flight
Seat

Objectives

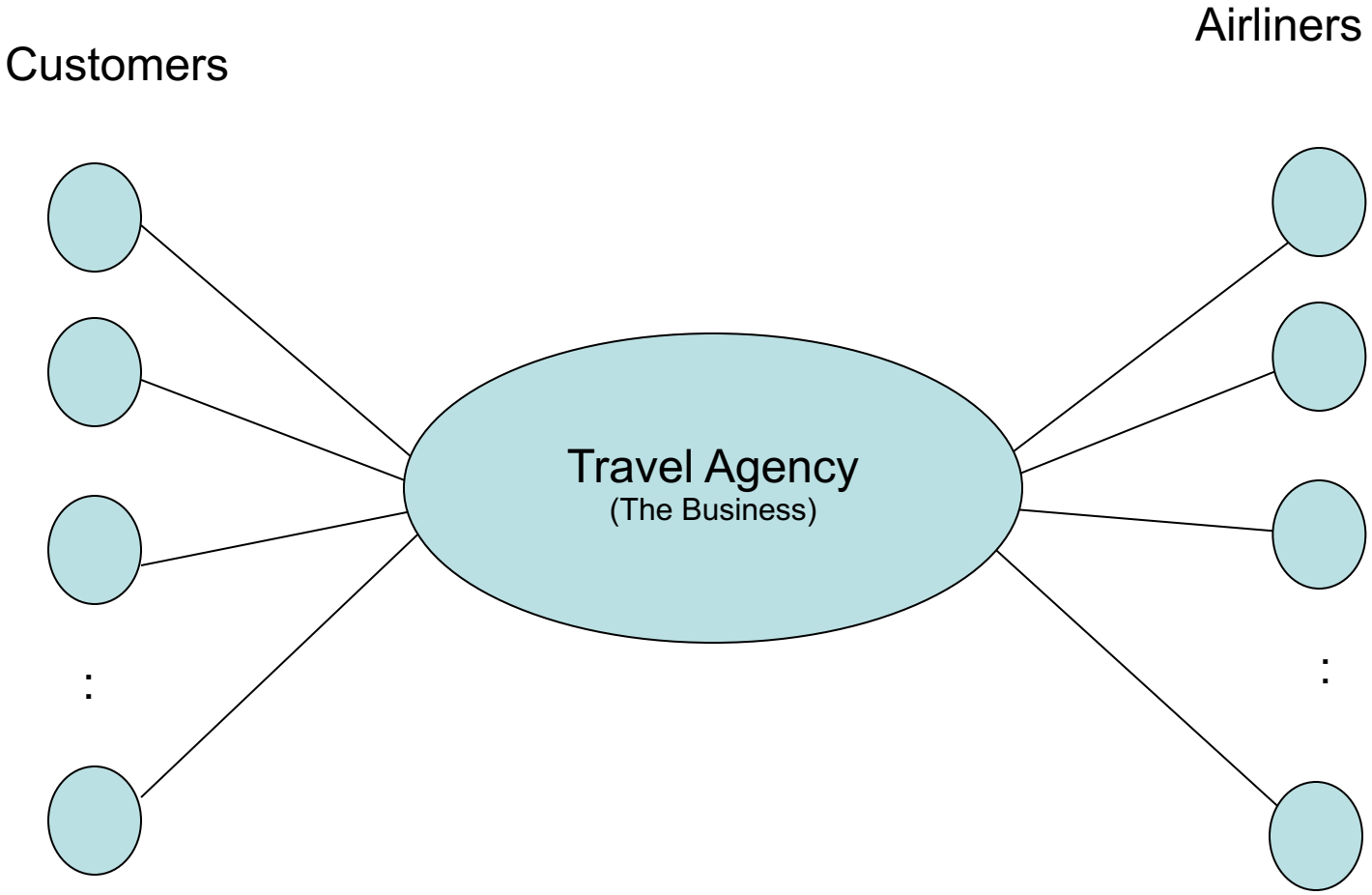
- Specify the business problem
  - Multi-retailer and multi-airliner inventory system
- Specify and implement user interfacing processes
  - Identify key stakeholder
  - Identify stakeholder user processes
- Expand the object model to support the travel system

Need to know

- How to specify processes in swing?
  - Cardlayout
- How to expand the object model
  - Add Travel Agency class, Airliner directory, customer, and customer directory, and user directory
- How to link the expanded object model to the user processes defined in swing?

The Business Model

The Travel Agency View



Key Travel Agency Use Case

- Manage Travel Agency
  - Search and list all flights (from and to) (across all airliners)
  - Book a ticket for a customer
- Register Airliners
  - Create new airliner
  - View airliner profiles
- Manage customers
  - Search for best flights
  - Book customer reservation on a flight

Airliner: Manage flight schedule

Manage airliner flight schedules

- List all flights
- Add flight to flight schedule
  - Morning, day, and evening
  - From location
  - To location
- Select and update flight information
- Select and cancel flight

Steps

- Define new project
- Define a business package under src
- Define UserInterface package
  - define subpackages for each user process
- New JFrame (TravelAgencyMain)
- Include splitpane
- Add jpanel to the right side of the split pane
  - Set the layout manager to absolute layout
- Add JPanel to the left-side of the splitpane
  - Set the layout manager as the cardlayout
  - Rename the JPanel as the CardSequenceJPanel
- Define stakeholder action buttons on the right-handside of jpanel of the splitpane

The Object Model Supports the following

- Business (travel agency)
  - Name
  - Search for flights across airliner flight schedules
  - Airliner Directory
    - Airliner
      - User
      - Flight Schedule
        - » Flight
          - » Add flight, find and update flight, select and cancel flight

Scenario I: Manage Airliners

- User chooses to manage airliners
- System displays screen with a table of list of airliners and with the following options:
  - Add a new airliner
    - System displays a new airliner screen
    - User enters airliner information and hits ok or cancel to go back
  - Select/Browse a airliner
  - System retrieves selected airliner and displays airliner information.
  - If a user chooses to update airliner information system takes the user to an update airliner screen where the user can update airliner information and returns to airliner view screen with updated information

How to define a sequence of screens?

- Add a subpackage under the UserInterface. call it ManageAirliners
- Define three JPanels under the Manage Airliners subpackage
  - ManageAirlinersJPanel
    - Add a JLabel on the JPanel canvas and rename it as “Manage Airliners”
  - CreateNewAirlinerJPanel
  - ViewAirlinerJPanel

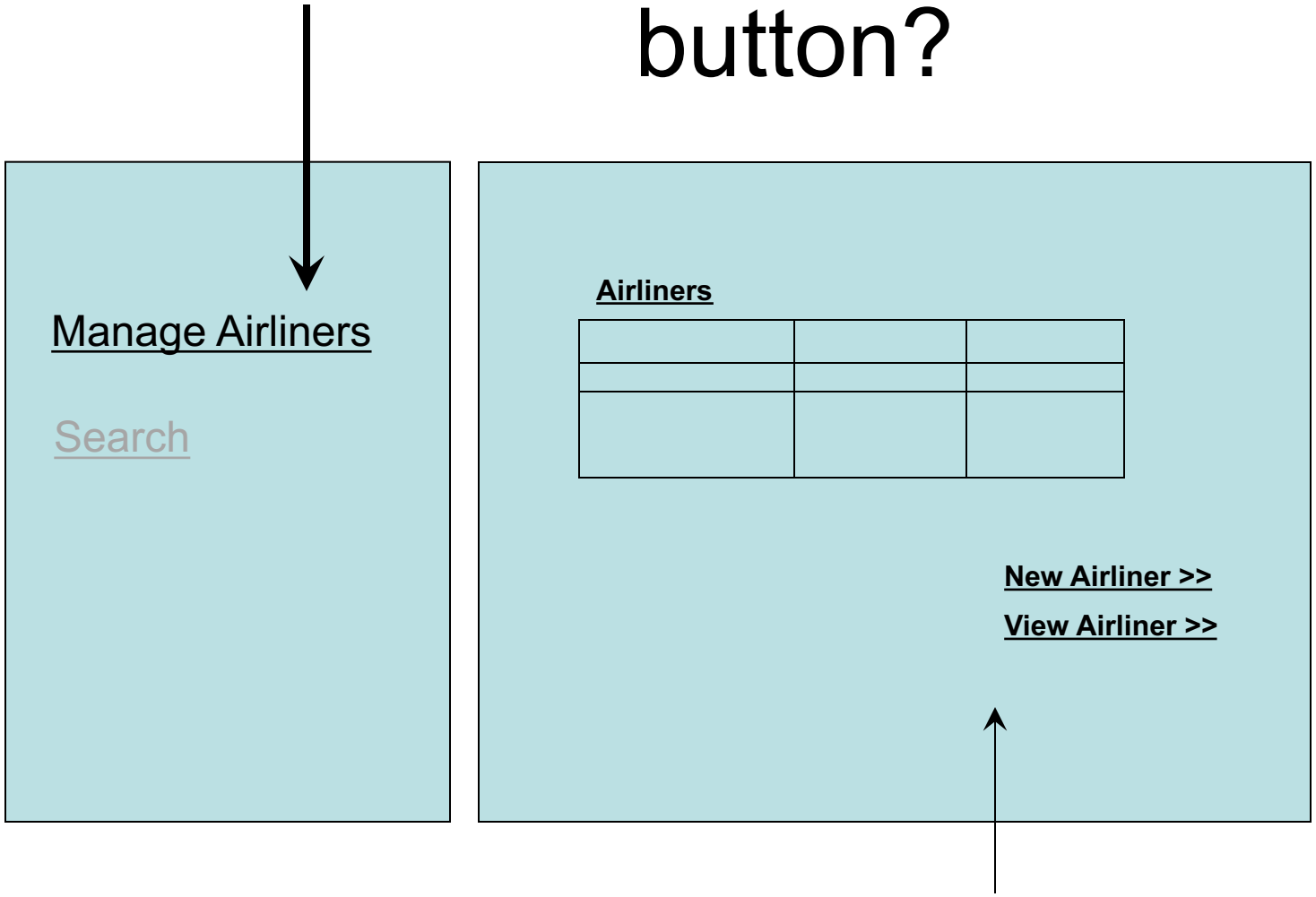
ManageAirlinersJPanel

- Redefine the arguments on the constructor so it accepts two arguments

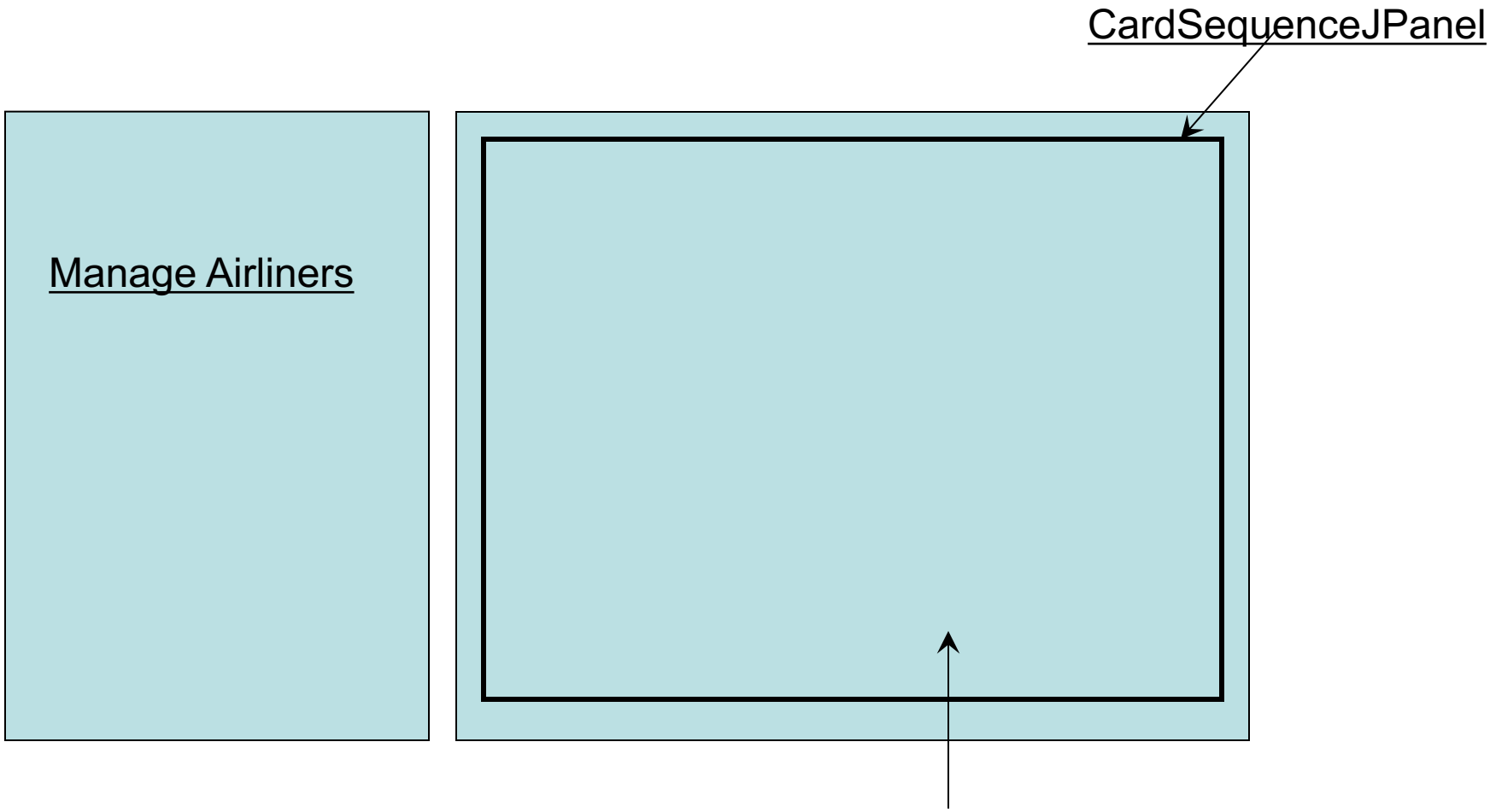
```
Class ManageAirlinerJPanel extends JPanel {

AirlinerDirectory airlinerdirectory;
 javax.swing.JPanel CardSequenceJPanel;

public ManageAirlinerJPanel(javax.swing.JPanel spane, AirlinerDirectory sd) {
        CardSequenceJPanel = spane;
        airlinerdirectory = sd;
        :
<Display the airliner list in the supplier table here>
        :
        initComponents();

}
```

Note: Must import AirlinerDirectory from the business side

What Happens when the user presses the Manage Airliners button?



The Splitpane inside the JFrame



How to create and insert an instance of ManageAirlinersJPanel?

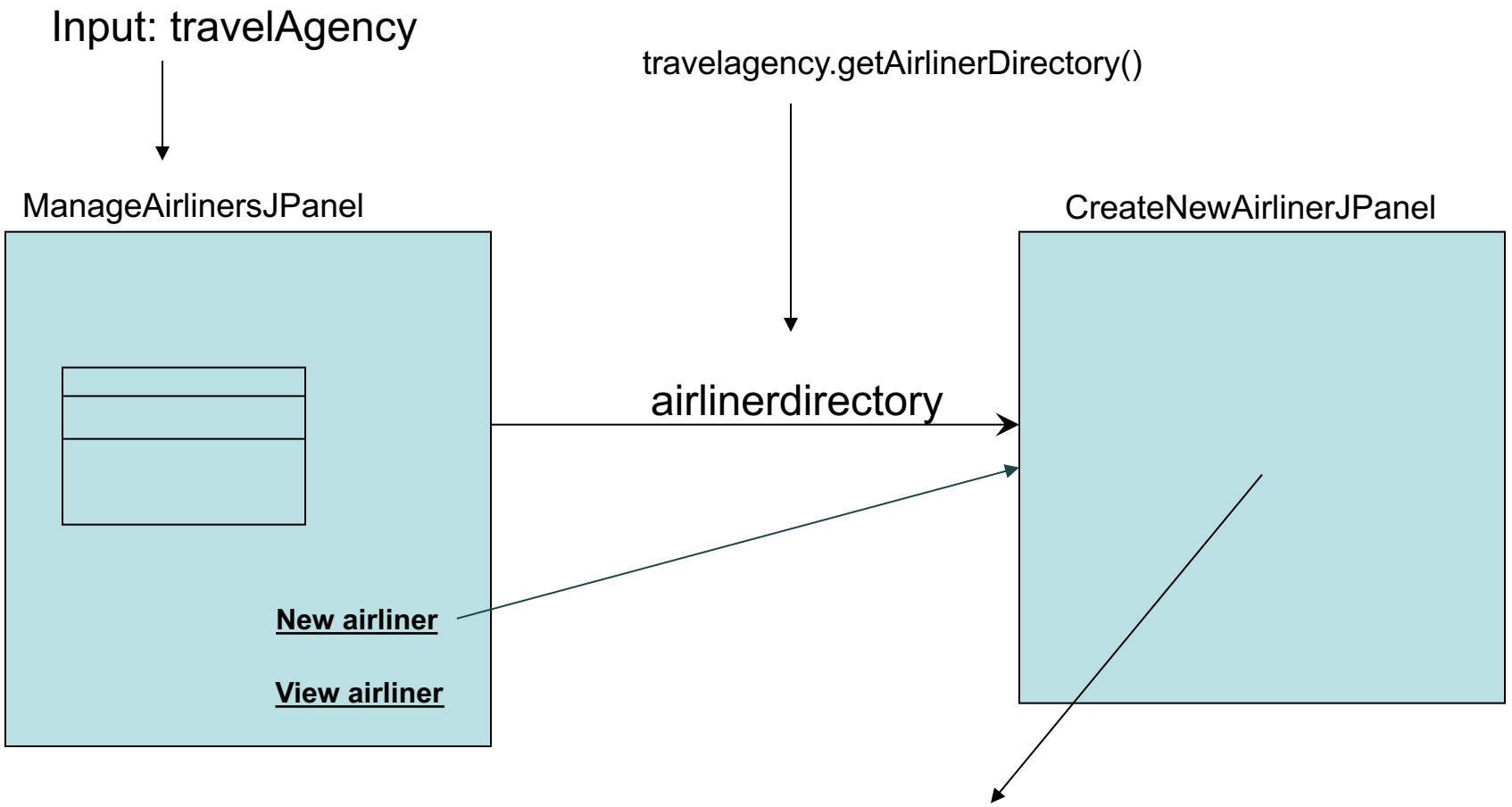
Manage Airliners

Assume travelagency is an instance of the TravelAgency class

```
AirlinerDirectory ad = travelagency.getAirlinerDirectory();

CardSequenceJPanel.removeAll();

ManageAirlinersJPanel msjp = new ManageAirlinersJPanel (CardSequencePanel, ad);

CardSequencePanel.add("airlinersjpanel",msjp);   //any name will do

((java.awt.CardLayout)CardSequenceJPanel.getLayout()).next(CardSequencePanel);
```

Insert this code as part of the perform action event associated with

How to passing parameters?



Uses airlinerdirectory object to create an airliner:

Airliner s = new airlinerdirectory.newAirliner();

Passing Parameters

Assume travelagenecy is an instance of the TravelAgency class

```
AirlinerDirectory sd = travelagenecy.getAirlinerDirectory();

CardSequenceJPanel.removeAll();

ManageTravelAgencyJPanel msjp = new ManageTravelAgencyJPanel (CardSequencePanel, sd);

CardSequencePanel.add("airlinersjpanel",msjp);   //any name will do

((java.awt.CardLayout)CardSequenceJPanel.getLayout()).next(CardSequencePanel);
```

Passing the airliner directory as a parameter after it getting extracted from travelagency Object. The cardjpanel is also passed.

How to display the airliner table?

```
//Clear airliner table
 int rc = airlinerjtable.getModel().getRowCount()-1;
        while(rc>=0) {
            ((DefaultTableModel) airlinerjtable.getModel()).removeRow(rc);
            rc = rc - 1;
        }
ArrayList<Airliner> airlinerlist =airlinerdirectory.getAirlinerList();

For (airliner aliner: airlinerlist){

Object[] row = new Object[5];
row[0] = aliner.getName();
row[1] = aliner.getAddress();
Row[2] = aliner.getTotalFlightsPerDay();
:
:etc
Row[4] = aliner; // this is an extra entry so you have a way to retrieving
                 // the actual airliner upon user selection of the corresponding row.

//add row to supplier table
((DefaultTableModel) airlinerjtable.getModel()).addRow(row);
}
```

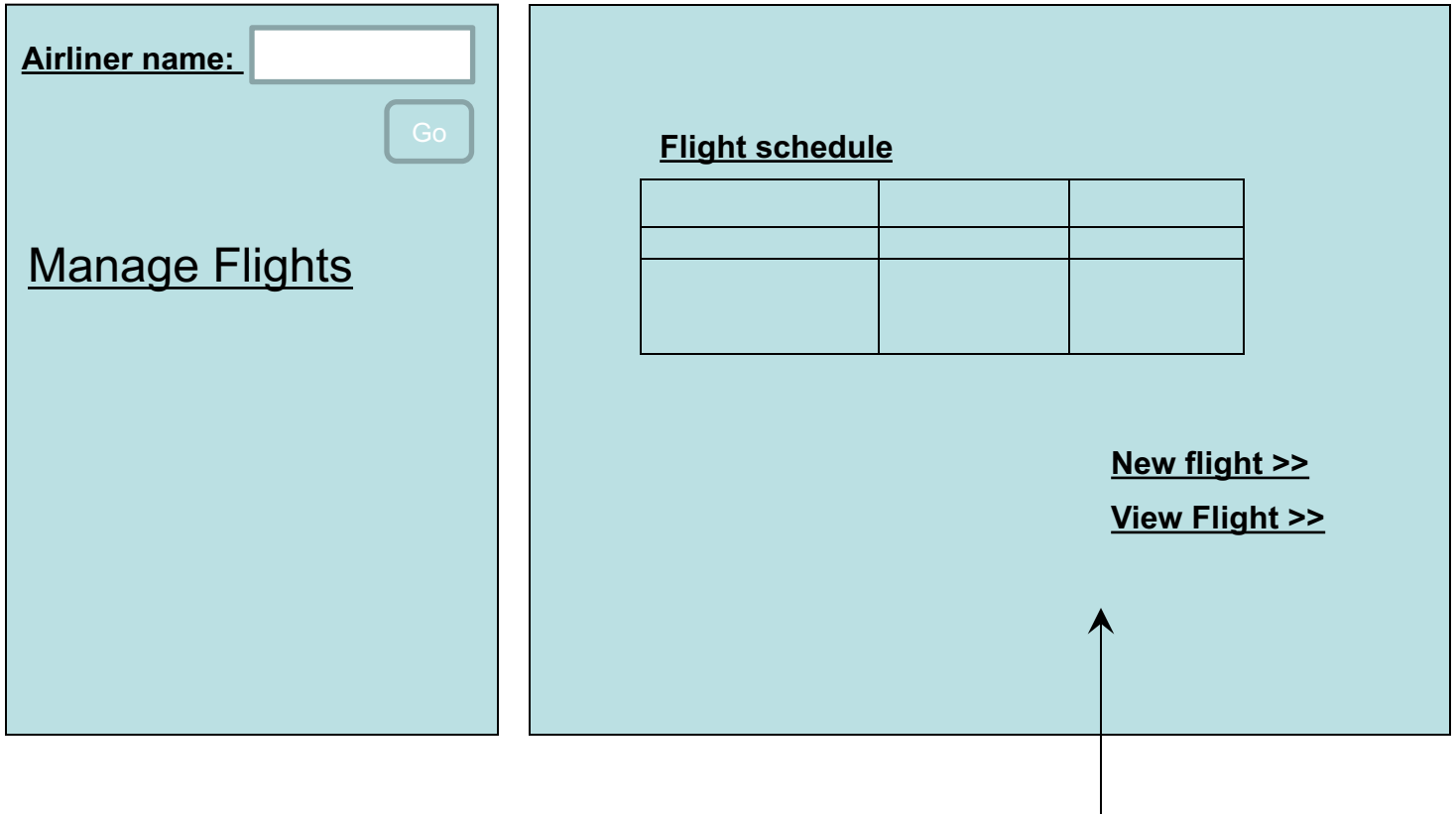
How to extract the user selected airliner from the airliner table?

- Define an action perform on the airliner table
- Insert the following code to isolate the selected airliner object

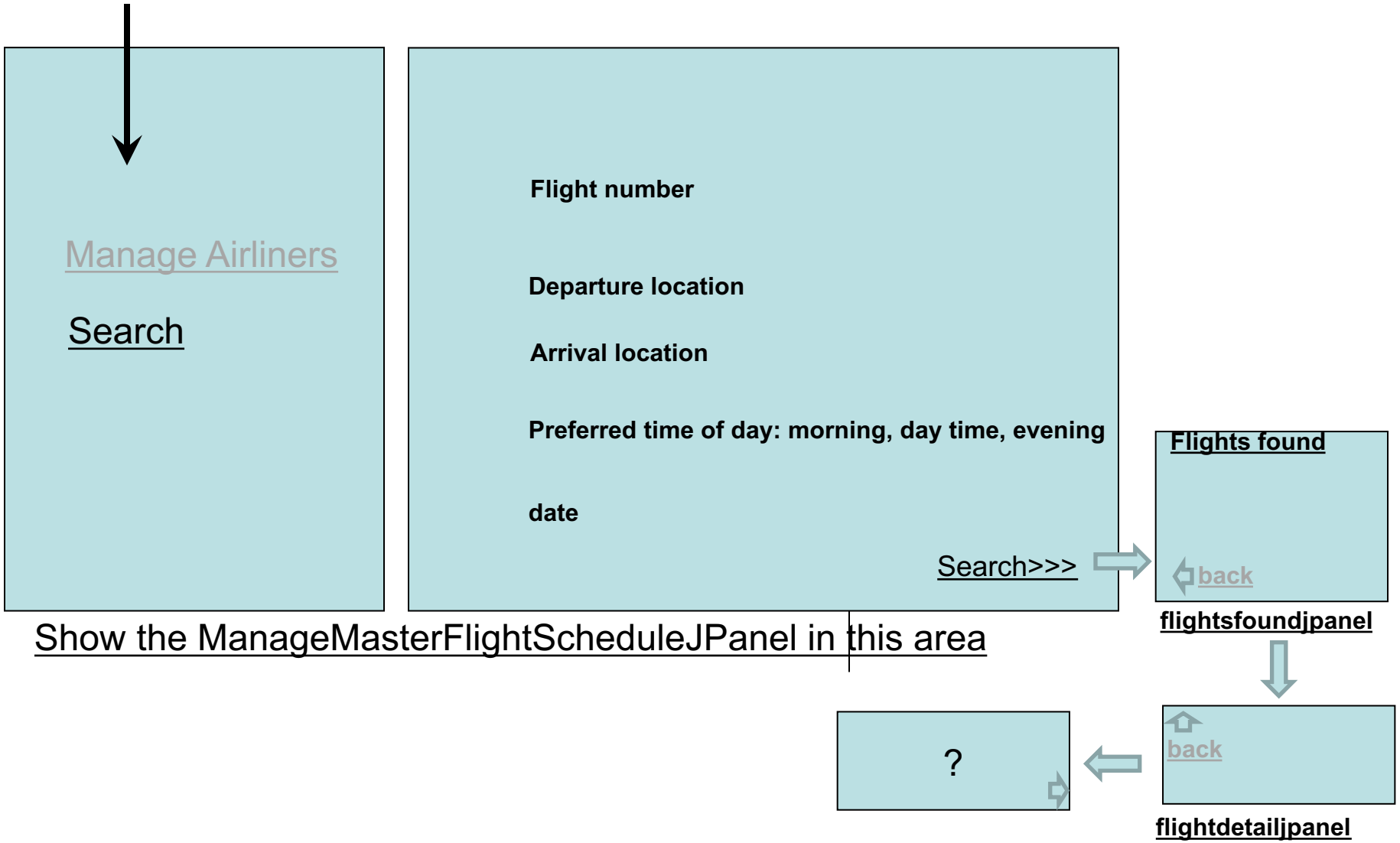
How to retrieve selected row?

```
int r = airlinerTable.getSelectionModel().getLeadSelectionIndex();

    if (r>-1) {
 Airliner aliner = (Airliner) airlinerTable.getValueAt(r, 4);  // the 4th column
                                                                // is where we save the supplier object
}
```

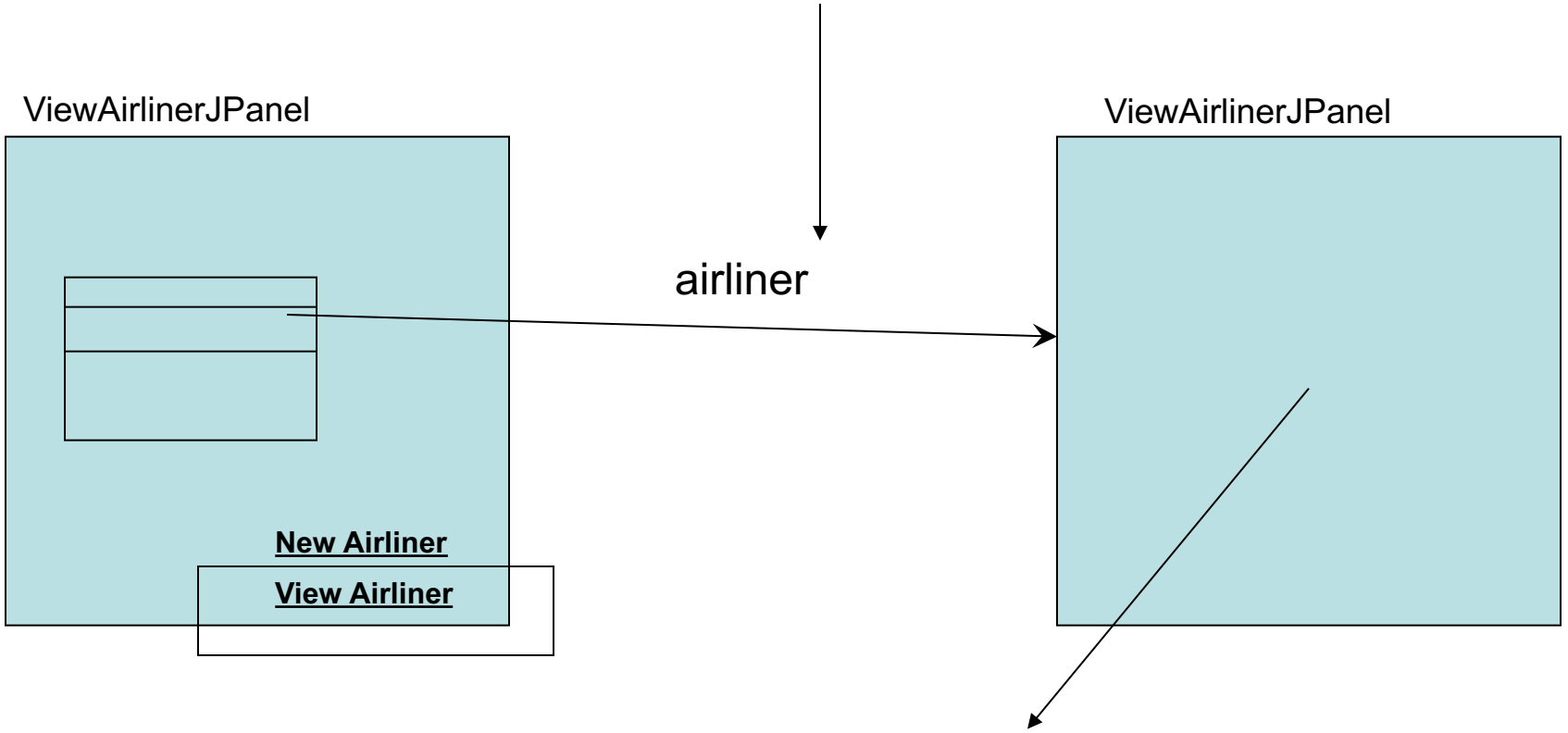
The Airliner Use Case



How to handle travel agency search for flights through the masterschedule



How to pass selected airliner?



Extra Credit

- Expand the model for the travel agency to travel services such as
  - Car rental from car rental companies
  - Hotel reservations from local hotels in the area
  - Provide support for multiple stops on a travel plan
- Explain how one would implement such a model in java
  - Prepare a report with specifications