CostaEXPRESS

DATABASE MANAGEMENT SYSTEMS PROJECT
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DR COSTA – SPRING 2022

Contents

Get Started:

To begin the database setup, run the following sql files in datagrip:

- createDB.sql
- getpricefunction.sql
- updatePhase3_v2.sql
- updatePhase3_v3.sql
- updatePhase3_v4.sql

Ensure that all views have been created within the functions of the sql files.

In order to run properly, the program must have the following file structure:

Note that the dbpack file is a package. If running the file returns an error stating it cannot find these classes, that means that your local system is not recognizing dbpack as a package file.

Launch the java file from the root (Demo) directory using the command:

With Windows using chocolatey:
  Make
  java -cp "postgresql-42.2.18.jar;." dbpack/CostaExpress
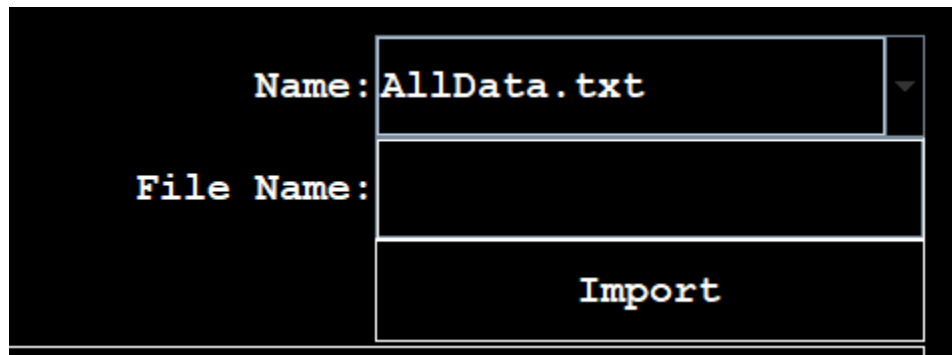
or with Mac/Linux:
  Make
  java -cp postgresql-42.2.18.jar;. dbpack/CostaExpress

Select Admin > Login with password > AllData.txt, with no file name, and select 'Import'

The import statement should have generated the demonstration data provided by the project outline which can be verified using select statements in datagrip.

Then, run the following sql file in datagrip:

- updatePhase3_v1.sql

Verify that the most recent sql statement has updates the stop_seatcount table with the command SELECT * from stop_seatcount;

The demo program should now be fully functional, no need for a restart.

Launch Screen:
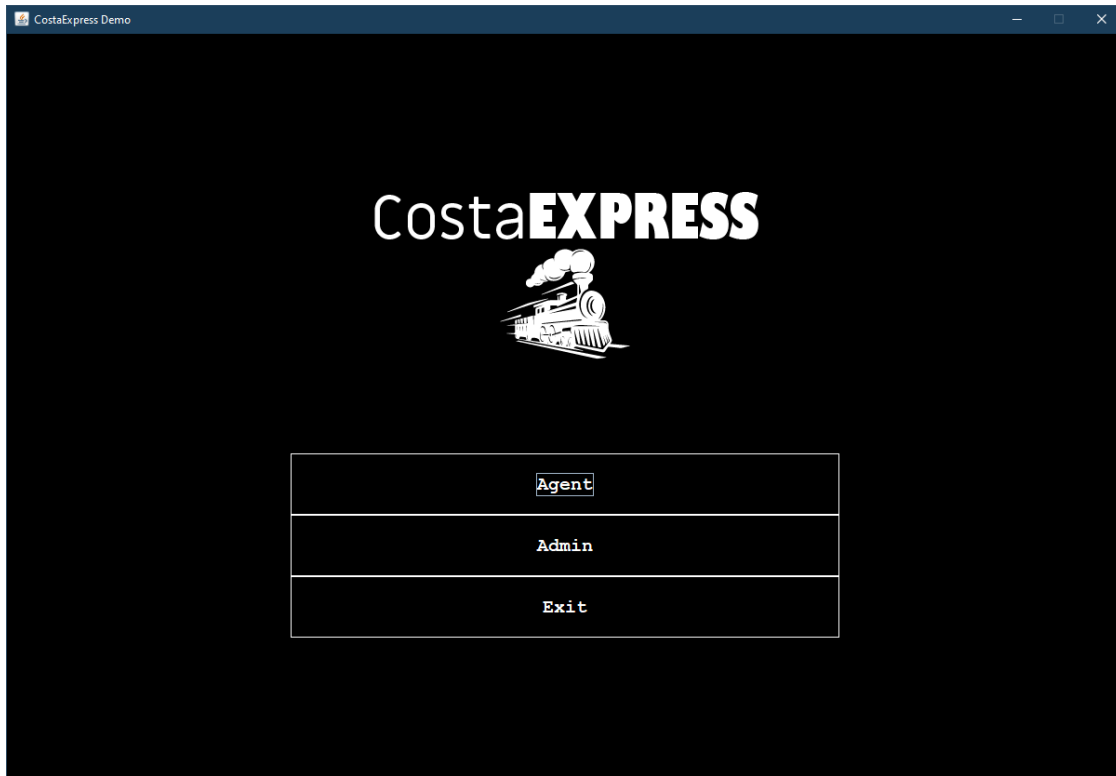
By clicking 'Agent,' the program is directed to the Agent Login Screen.
By clicking 'Admin,' the program is directed to the Admin Login Screen.

Login Screen:

Note: Username postgres is default and does not need to be entered to obtain access, however a user password must still be added.
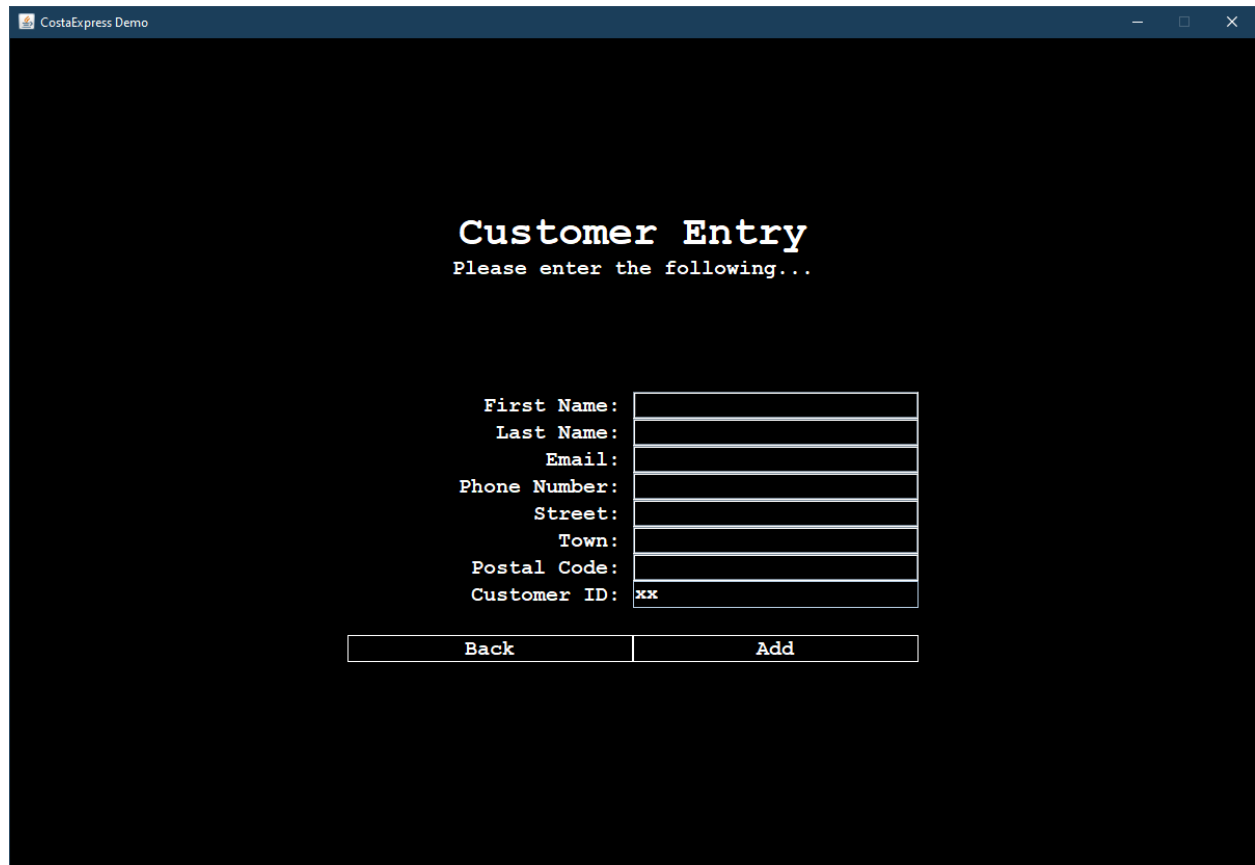
Agent Access:
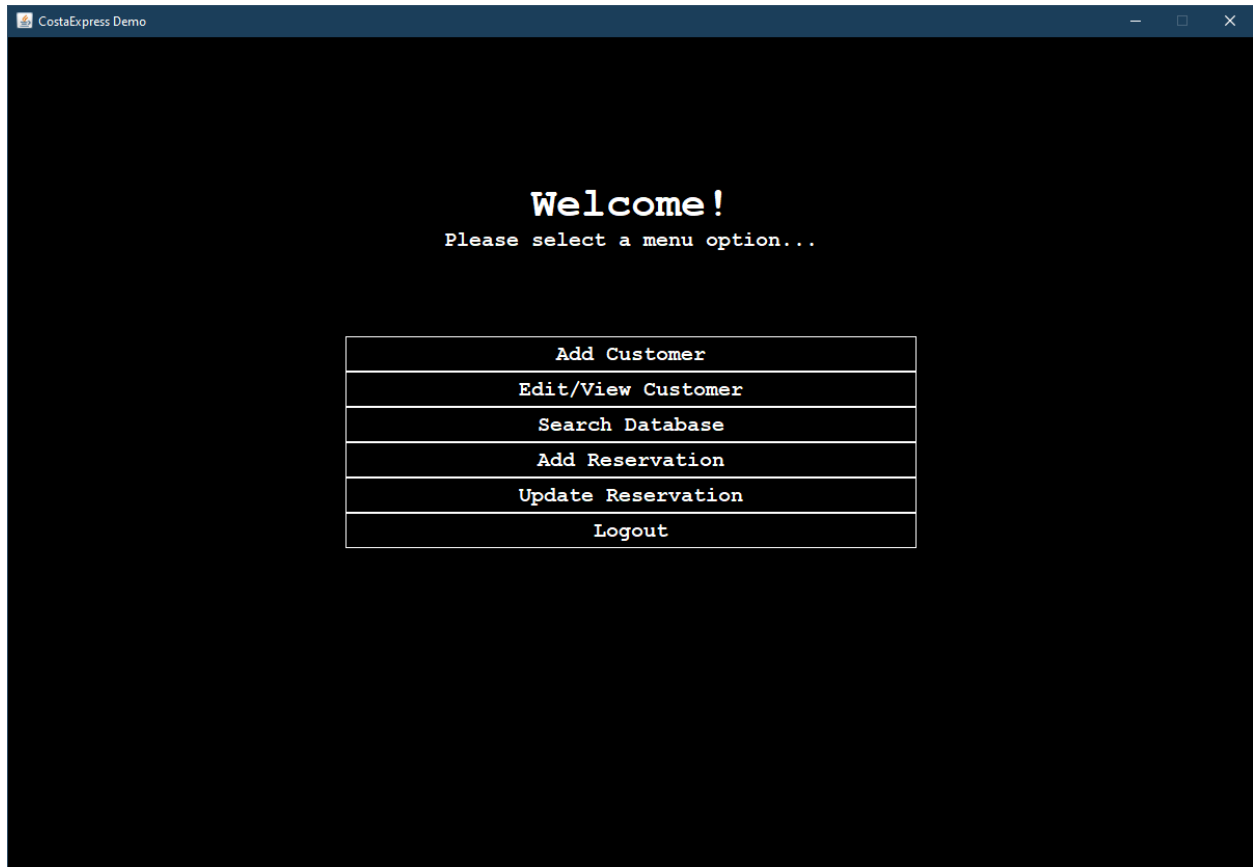
Select one of the menu options.

- Add Customer gives the option to add a Customer to the database.
- Edit/View Customer gives the option to edit and view database Customers.
- Search Database provides a menu of search options including:
    - Search by Single Route
    - Search by Combination Route
    - Advanced Search Options A – I
- Add Reservation gives the option to add a new reservation.
- Update Reservation gives the option to update an existing reservation.
- Logout returns the user to the login menu.

Add Customer:

Enter the requested information and select the 'Add' button.
On successful creation, a customer ID is generated and returned into the Customer ID field.
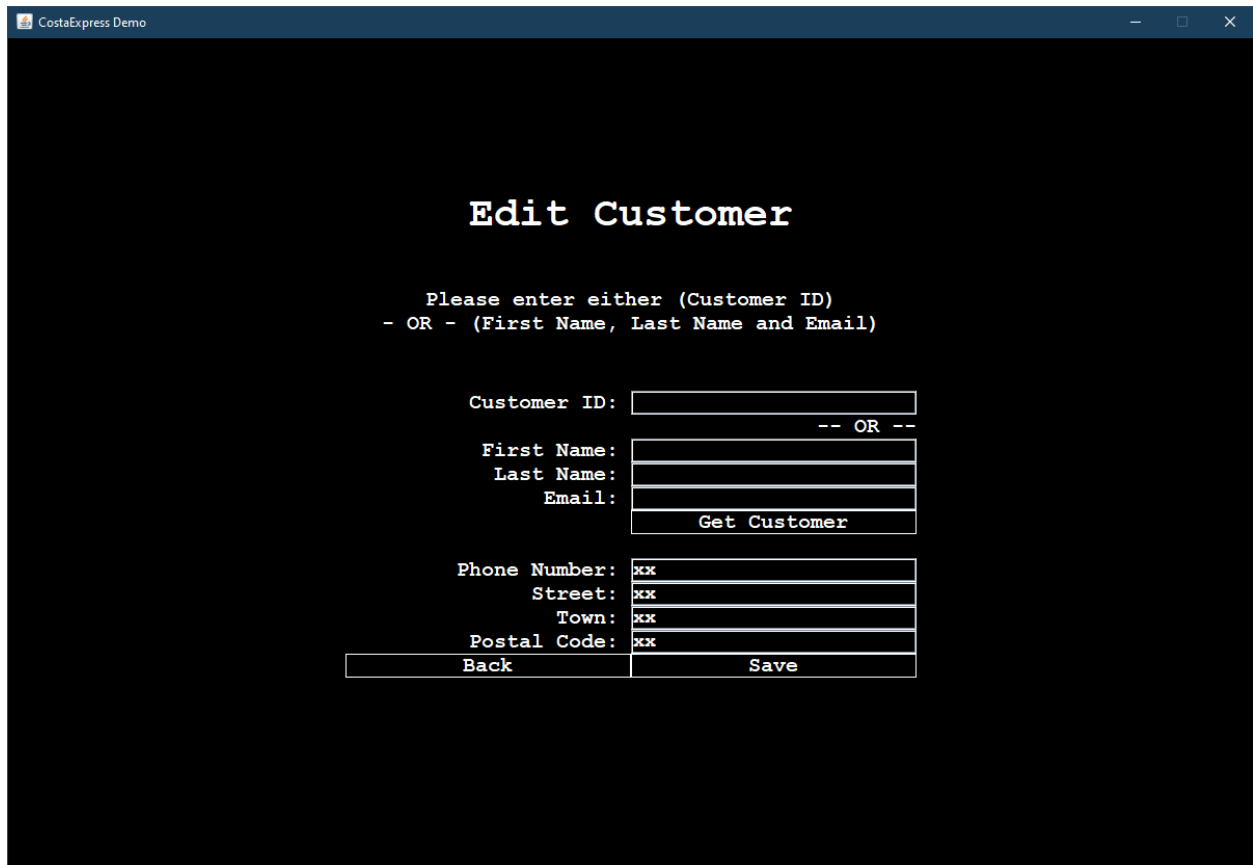
Edit/View Customer:

Enter either the (Customer ID) or (First Name, Last Name and Email Address).
Then select 'Get Customer.'
The Customer's information is displayed in the relative fields and can now be updated.
To update, select the 'Save' button.
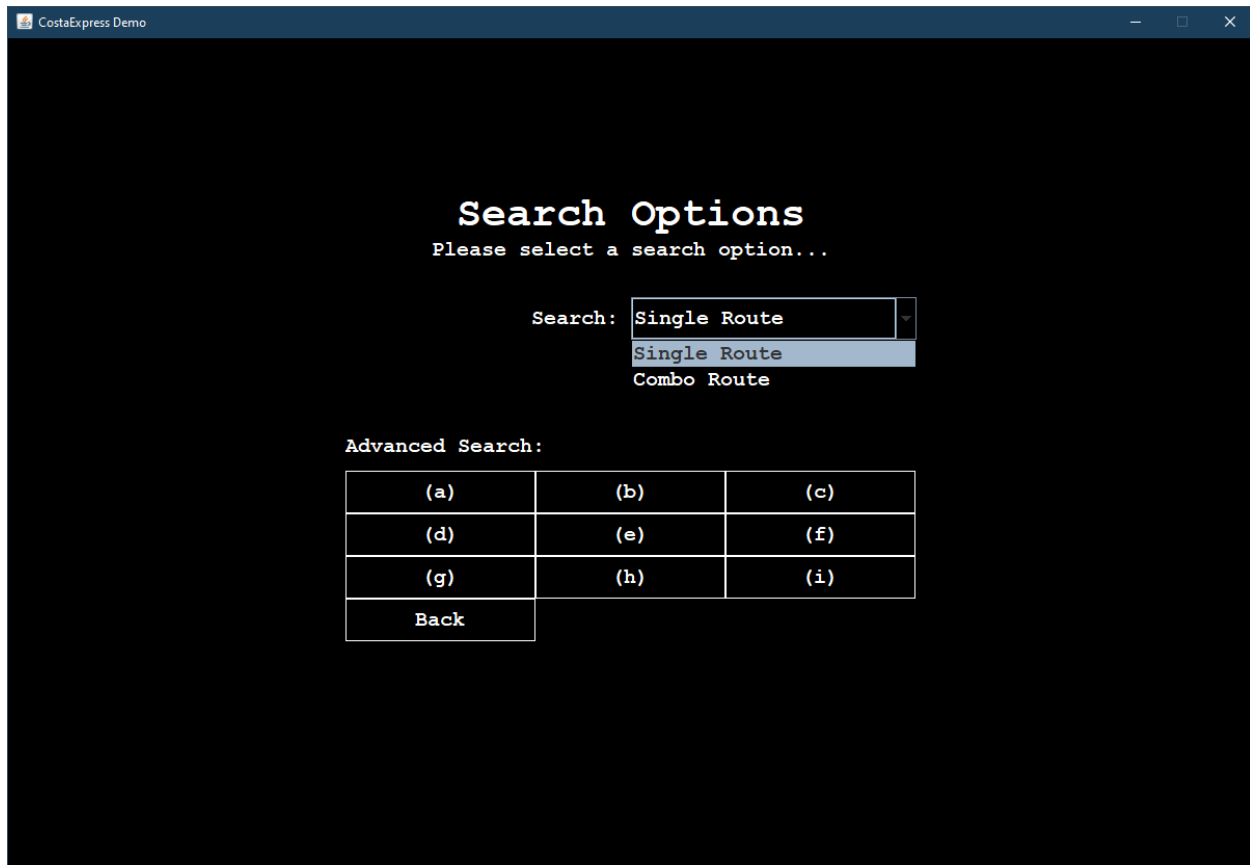
The Search Option Menu corresponds to the original assignment pdf for search parameters. Additionally, we added a Search Customer Reservation feature.

The Search Selections are as follows:

- Single Route -
- Combo Route -
- Advanced Searches
  - A – Find all trains that pass through a specific station at a specific day/time combination
  - B – Find the routes that travel more than one rail line
  - C – Rank the trains that are scheduled for more than one route
  - D – Find routes that pass through the same stations but don't have the same stops
  - E – Find any stations through which all trains pass
  - F – Find all the trains that do not stop at a specific station
  - G – Find routes that stop at least at XX% of the stations they visit
  - H – Display the schedule of a route
  - I – Find the availability of a route at every stop on a specific day and time
- Back Button – Select to return to the previous screen.

Enter the ID number for the Start and End station, as well as the day and a sorting option.
Clicking the 'Search' button populates the result table.

Combination Route Search:

```
CostaExpress Demo                                                    —  ☐  ✕

 Combination Route Search
 ┌──────────────────────────────────────────────────────────────────┐
 │    Day:    |  Time:  | Rt: | Train:| Start Station: | End Station: | Avail. Seats: │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                      ┌────────────────────────┐    │
 │                                      │        Next  >         │    │
 │              Start Station(as ID):15 │                        │    │
 │                End Station(as ID):20 │                        │    │
 │                              Day:Monday                        │    │
 │                         Order By:Lowest Price                  │  ▾ │
 ├───────────────────────────────┬──────────────────────────────┤    │
 │            Back               │            Search             │    │
 └───────────────────────────────┴──────────────────────────────┘
```

Enter the ID number for the Start and End station, as well as the day and a sorting option.
Clicking the 'Search' button populates the result table.

Day:	Time:	Rt:	Train:	Start Station:	End Station:	Avail. Seats:
1st : Monday	03:37:00	1029	227	15	40	75
2nd : Monday	12:21:00	4025	51	40	20	150
1st : Monday	03:37:00	1029	227	15	12	75
2nd : Monday	15:55:00	1758	51	12	20	150
1st : Monday	03:37:00	1029	227	15	8	75
2nd : Monday	15:55:00	1758	51	8	20	150
1st : Monday	03:37:00	1029	227	15	28	75
2nd : Monday	15:55:00	1758	51	28	20	150
1st : Monday	03:37:00	1029	227	15	8	75
2nd : Monday	14:55:00	3957	266	8	20	200
1st : Monday	03:37:00	1029	227	15	8	75
2nd : Monday	12:21:00	4025	51	8	20	150

The First route is the first 'leg' of the journey, with the end station that functions as a layover station.
The Second route is the second 'leg' of the journey, with the start station that functions as a layover station.

Advanced Search (A):

Finds all trains that pass through a specific station during a specific day/time combination.

Enter the Station ID, day and time.

When the 'Search' button is selected, the screen will populate with trains that pass through a specific station during the specified day/time combination.

Advanced Search (B):

Finds the Routes that travel more than one rail line.

```
CostaExpress Demo                                    −   □   ✕

Advanced Search (B)
              Find routes that travel more than one rail line.

Route_ID:
22
36
42
50
85
91
92
105
114
124




                                              Next >
          Back
```

Advanced Search (C):

Ranks the trains that are scheduled for more than one route.

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CostaExpress Demo                                    −   □   ✕

Advanced Search (C)
              Rank the trains that are scheduled for more than one route.

Train_ID: | Rank:
1         |    1
2         |    1
3         |    1
4         |    1
5         |    1
6         |    1
8         |    1
11        |    1
12        |    1
13        |    1




                                              Next >
          Back
```
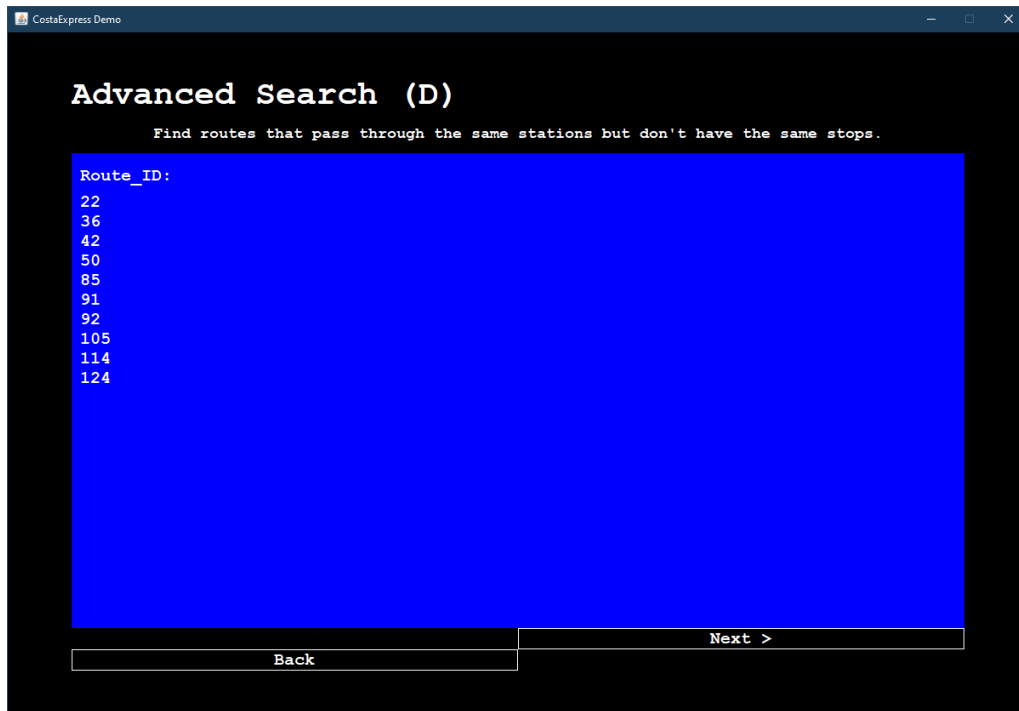
Advanced Search (D)

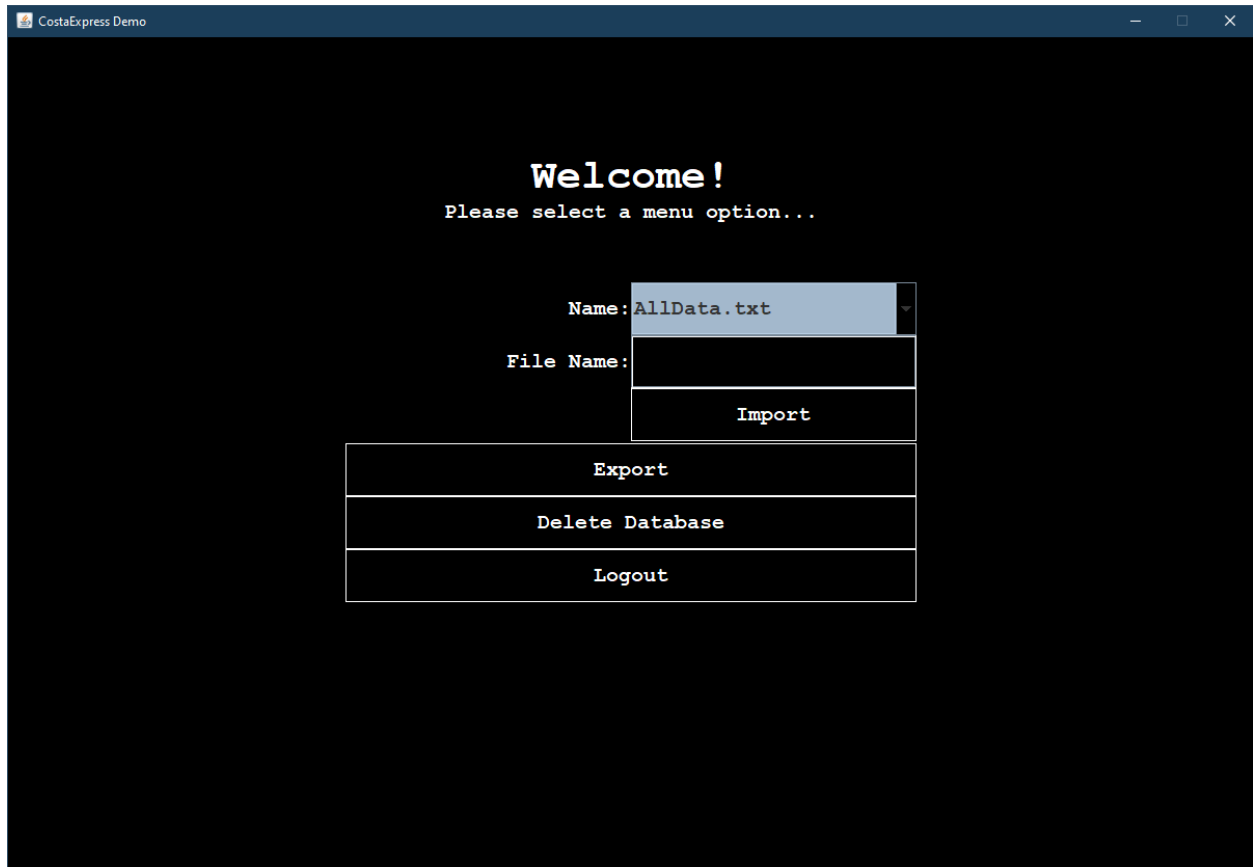Finds the routes that pass through the same stations but don't share the same stops.

Advanced Search (D)

Find routes that pass through the same stations but don't have the same stops.

```
Route_ID:
22
36
42
50
85
91
92
105
114
124
```

Next >

Back

Admin Screen:

Import:

AllData.txt – No file name should be entered. This option uses the AllData.txt file in the root directory to generate demo data.

All other options – These options can import data that was generated *using the program's export option.* Thus, this option should not be used unless Export has generated export .txt files from the database.

> If data has been exported using the Export button, select the desired table data to import and add a direct file name to the location of the export data, be sure to fill in the entire path.

> EX: C:\... all this stuff too...\CS1555_CostaExpress\export\tickets.txt

Export:

Before using the export function:

> Open updatePhase3_v4.sql and update the export file location to your system specific export file location. Run updatePhase3_v4.sql to save these updates.

You may now safely export the database data to the chosen export file. This can be verified with new .txt documents reflecting the name of the table.

Delete Database:

This brings up an option to either confirm the deletion or cancel. Select 'Yes' to delete the data within the database.