

2022

Costa**EXPRESS**



DATABASE MANAGEMENT SYSTEMS PROJECT

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DR COSTA - SPRING 2022

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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:

Demo			
Name	Date modified	Type	Size
dbpack	4/20/2022 11:41 PM	File folder	
advancedSearches.sql	4/20/2022 10:20 PM	SQL File	12 KB
AllData.txt	4/15/2022 3:23 AM	Text Document	136 KB
costa-01-01-01.png	4/15/2022 3:23 AM	PNG File	11 KB
createDB.sql	4/15/2022 3:23 AM	SQL File	6 KB
getpricefunction.sql	4/15/2022 3:23 AM	SQL File	2 KB
Makefile	4/20/2022 11:42 PM	File	1 KB
postgresql-42.2.18.jar	4/15/2022 3:23 AM	Executable Jar File	982 KB
README.md	4/19/2022 10:41 AM	MD File	6 KB
result.txt	4/15/2022 3:23 AM	Text Document	854 KB
updatePhase3_v1.sql	4/20/2022 9:50 PM	SQL File	8 KB
updatePhase3_v2.sql	4/16/2022 1:03 AM	SQL File	10 KB
updatePhase3_v3.sql	4/20/2022 10:20 PM	SQL File	7 KB
updatePhase3_v4.sql	4/20/2022 11:34 PM	SQL File	3 KB
user-01-01.png	4/15/2022 3:23 AM	PNG File	3 KB

Demo > dbpack			
Name	Date modified	Type	Size
AdminScreen.java	4/20/2022 11:24 PM	JAVA File	12 KB
AdvE.java	4/20/2022 10:20 PM	JAVA File	8 KB
AdvF.java	4/20/2022 10:20 PM	JAVA File	9 KB
SearchDatabase.java	4/20/2022 10:20 PM	JAVA File	9 KB
ImportAllText.java	4/20/2022 8:34 PM	JAVA File	18 KB
CostaExpress.java	4/20/2022 1:08 AM	JAVA File	4 KB
ComboRoute.java	4/19/2022 3:02 PM	JAVA File	20 KB
SingleRoute.java	4/19/2022 3:02 PM	JAVA File	16 KB
...

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

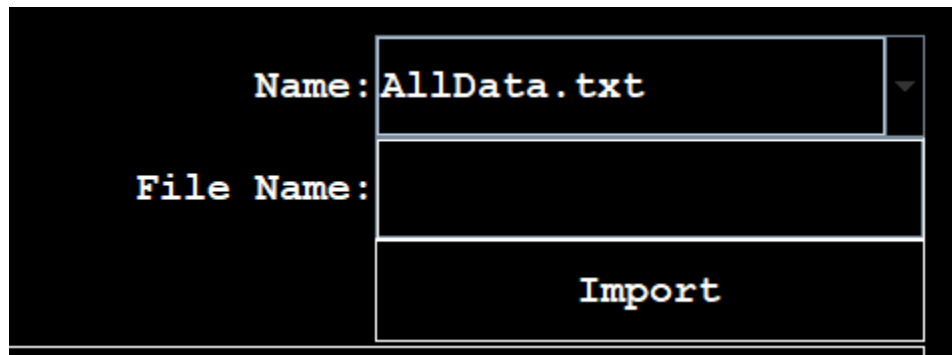
```
java -cp "postgresql-42.2.18.jar;." dbpack/CostaExpress
```

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 screenshot shows a web interface with a dark background. On the left, the text 'Name:' is followed by a text input field containing 'AllData.txt'. Below this, the text 'File Name:' is followed by an empty text input field. To the right of the 'File Name' field is a large button labeled 'Import'.

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

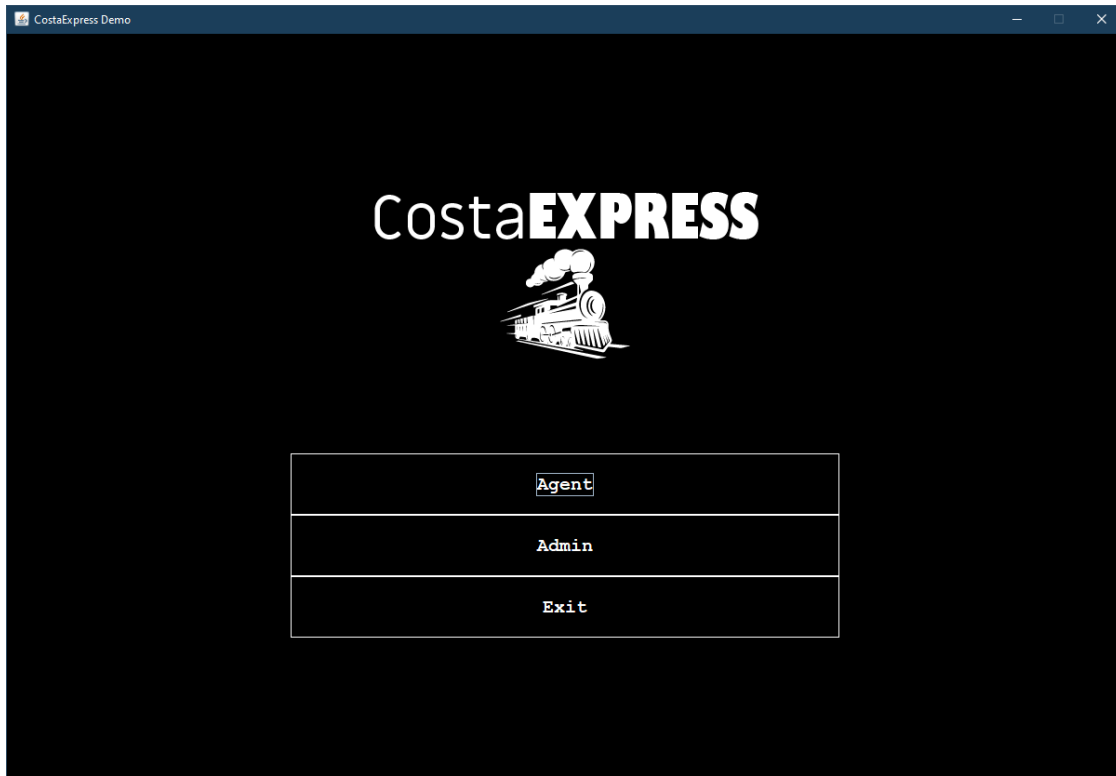
Then, run the following sql file in datagrip:

- 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:



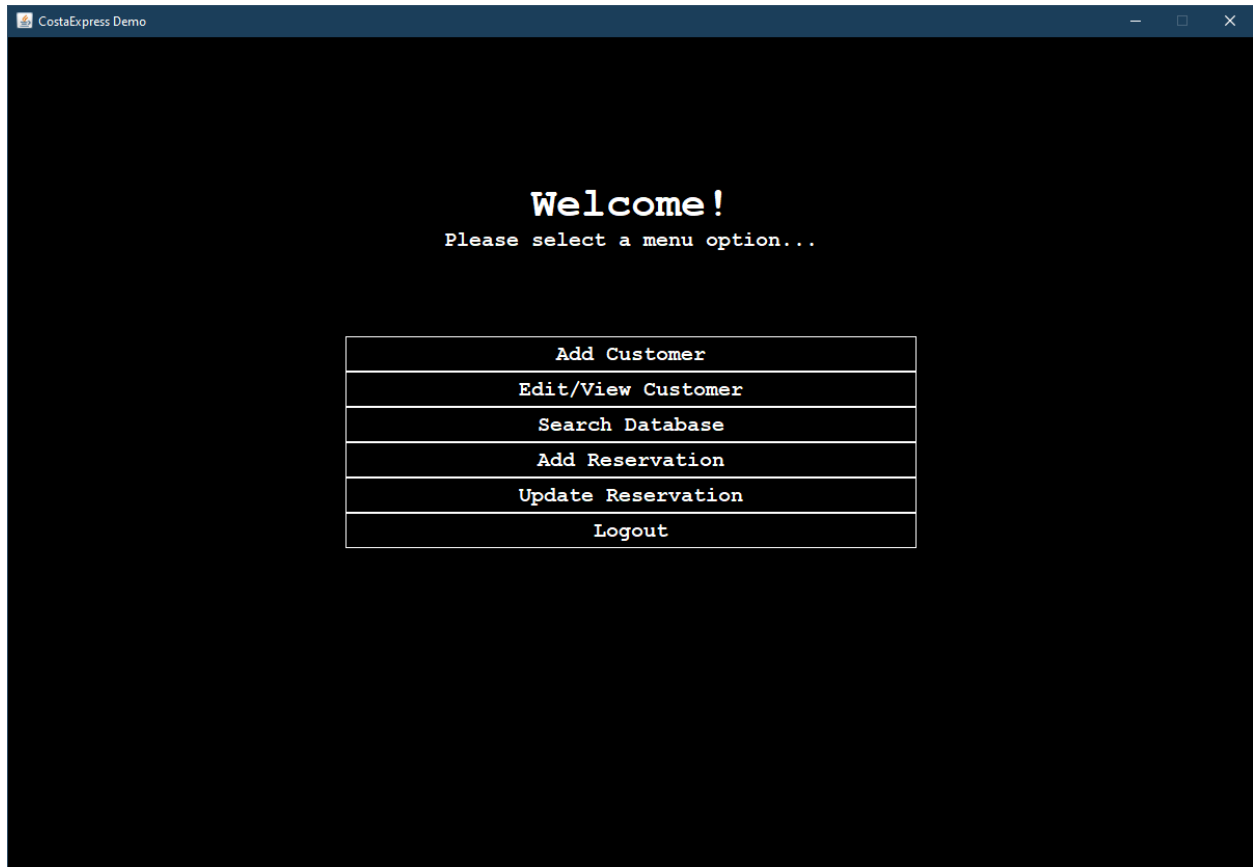
By clicking 'Agent,' the program is directed to the Agent Login Screen.
By clicking 'Admin,' the program is directed to the Admin Login Screen.

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.

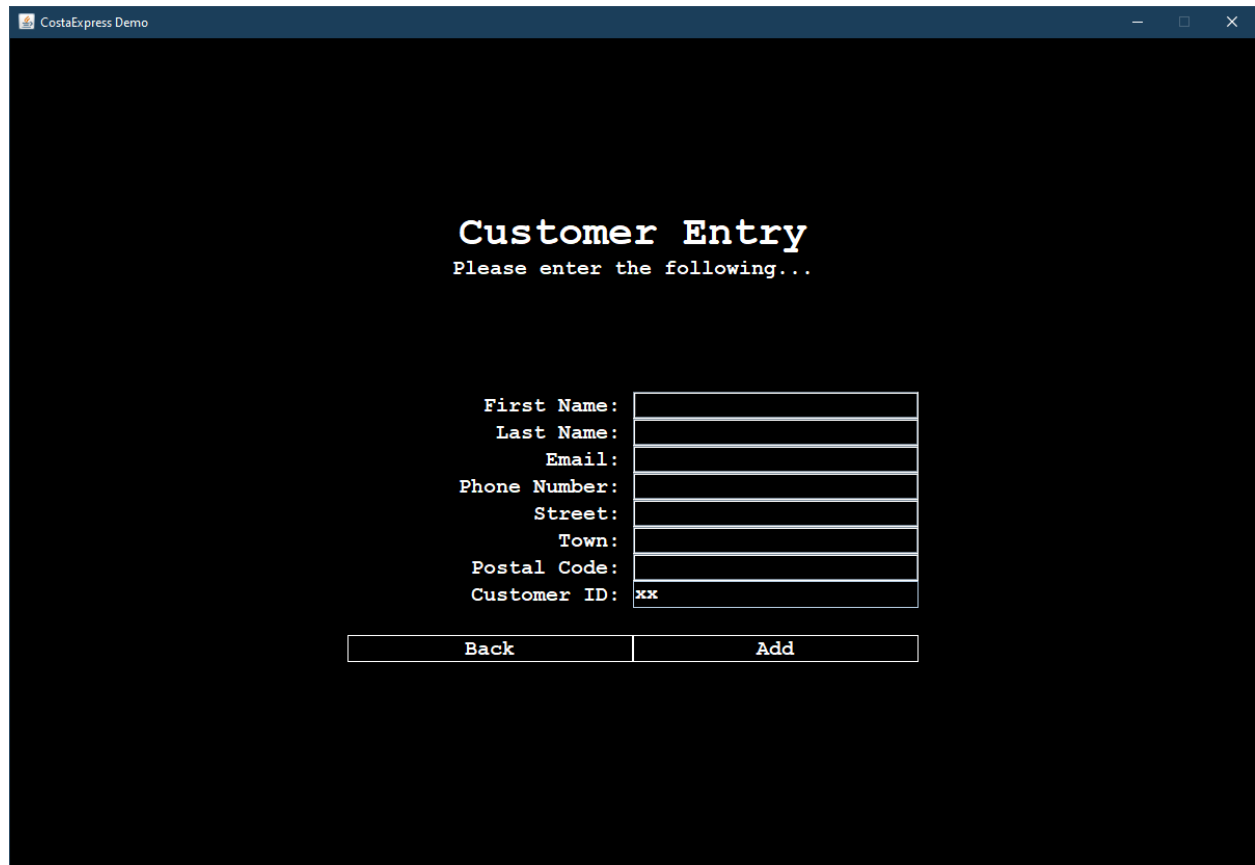
Agent Access:



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:
 - o Search by Single Route
 - o Search by Combination Route
 - o 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:



The screenshot shows a window titled "CostaExpress Demo" with a dark background. In the center, the text "Customer Entry" is displayed in a large, bold, white font, followed by "Please enter the following..." in a smaller white font. Below this, there is a form with several input fields, each preceded by a label in a white monospace font. The labels are: "First Name:", "Last Name:", "Email:", "Phone Number:", "Street:", "Town:", "Postal Code:", and "Customer ID:". The "Customer ID:" field contains the text "xx". At the bottom of the form, there are two buttons: "Back" and "Add", both in a white monospace font.

First Name:	
Last Name:	
Email:	
Phone Number:	
Street:	
Town:	
Postal Code:	
Customer ID:	xx

Back Add

Enter the requested information and select the 'Add' button.

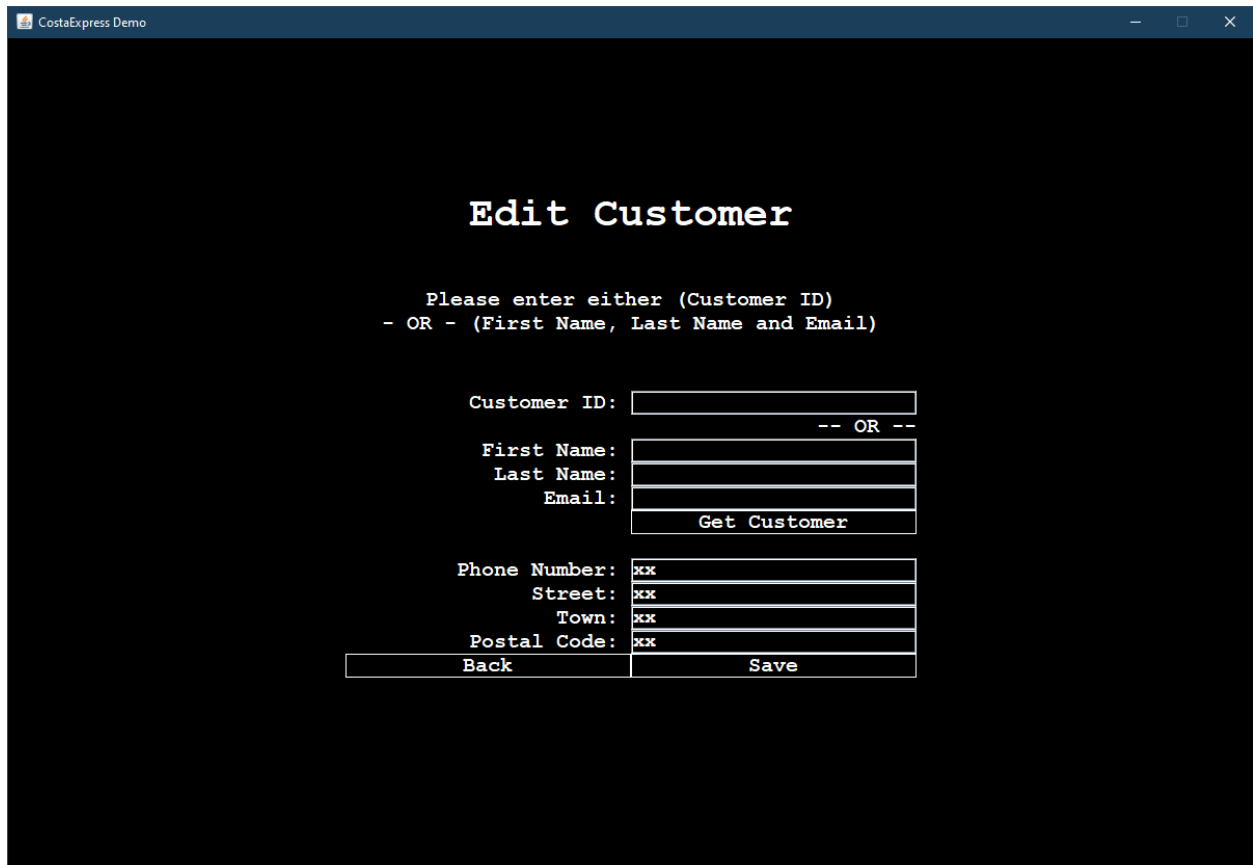
On successful creation, a customer ID is generated and returned into the Customer ID field.



A close-up of the "Customer ID:" label and its corresponding input field. The input field contains the number "4" in a green monospace font.

Customer ID:	4
--------------	---

Edit/View Customer:

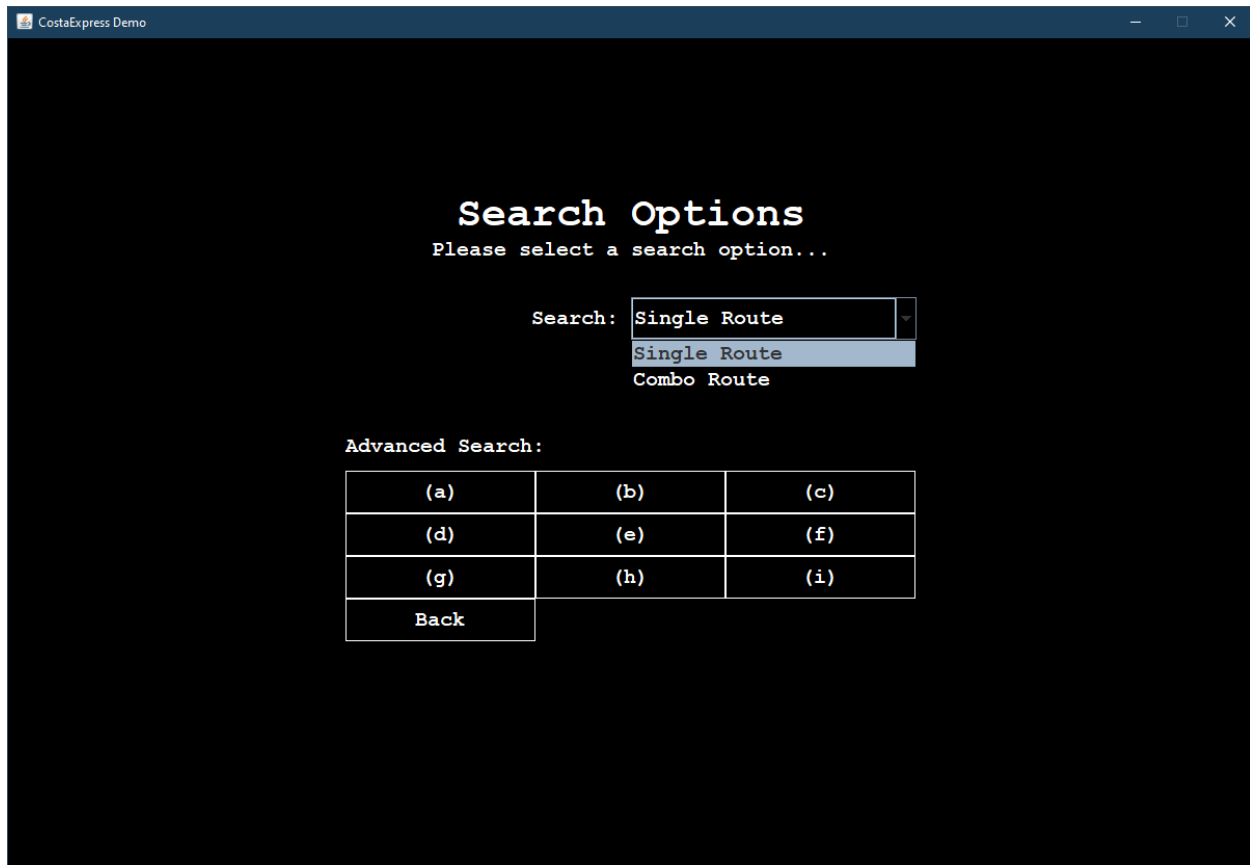


The screenshot shows a window titled 'CostaExpress Demo' with a dark background. The main heading is 'Edit Customer' in a large, white, monospace font. Below it, a message in a smaller monospace font reads: 'Please enter either (Customer ID)' followed by '- OR - (First Name, Last Name and Email)'. The form consists of several input fields and buttons. The first section has a 'Customer ID:' label and a single-line text input. Below this is a separator '-- OR --'. The second section has labels for 'First Name:', 'Last Name:', and 'Email:', each followed by a single-line text input. A 'Get Customer' button is positioned below the 'Email' input. The third section has labels for 'Phone Number:', 'Street:', 'Town:', and 'Postal Code:', each followed by a single-line text input. At the bottom, there are two buttons: 'Back' and 'Save'.

Customer ID:	<input type="text"/>
-- OR --	
First Name:	<input type="text"/>
Last Name:	<input type="text"/>
Email:	<input type="text"/>
Get Customer	
Phone Number:	<input type="text"/>
Street:	<input type="text"/>
Town:	<input type="text"/>
Postal Code:	<input type="text"/>
Back	Save

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.

Search Options:



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
 - o A – Find all trains that pass through a specific station at a specific day/time combination
 - o B – Find the routes that travel more than one rail line
 - o C – Rank the trains that are scheduled for more than one route
 - o D – Find routes that pass through the same stations but don't have the same stops
 - o E – Find any stations through which all trains pass
 - o F – Find all the trains that do not stop at a specific station
 - o G – Find routes that stop at least at XX% of the stations they visit
 - o H – Display the schedule of a route
 - o 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.

Single Route Search:

CostaExpress Demo

Single Route Search

Route:	Time:	Day:	TrainID:	Seats:	Start:	End:
--------	-------	------	----------	--------	--------	------

Start Station(as ID):

End Station(as ID):

Day:

Order By: Lowest Price

Next >

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.

Route:	Time:	Day:	TrainID:	Seats:	Start:	End:
85	13:41:00	Tuesday	244	175	1	2
4772	11:08:00	Tuesday	149	200	1	2
4775	08:34:00	Tuesday	315	150	1	2
114	08:09:00	Tuesday	73	150	1	2
4768	13:46:00	Tuesday	24	150	1	2
2346	03:45:00	Tuesday	145	100	1	2
22	07:29:00	Tuesday	249	75	1	2
22	07:29:00	Tuesday	249	75	1	2
22	07:29:00	Tuesday	249	75	1	2
22	07:29:00	Tuesday	249	75	1	2

Start Station(as ID):

End Station(as ID):

Day:

Order By: Lowest Price

Next >

Back

Search

Combination Route Search:

CostaExpress Demo

Combination Route Search

Day: | Time: | Rt: | Train: | Start Station: | End Station: | Avail. Seats:

Start Station(as ID): 15

End Station(as ID): 20

Day: Monday

Order By: Lowest Price

Back

Next >

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.

Train_ID: Route_ID:	
Station(as ID):	15
Day:	Monday
Time (as 00:00:00):	03:37:00
Back	Search

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.

```
Train_ID: | Route_ID:
1029    | 227
```

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

Back Next >

Advanced Search (C) :

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

CostaExpress Demo

Advanced Search (C)

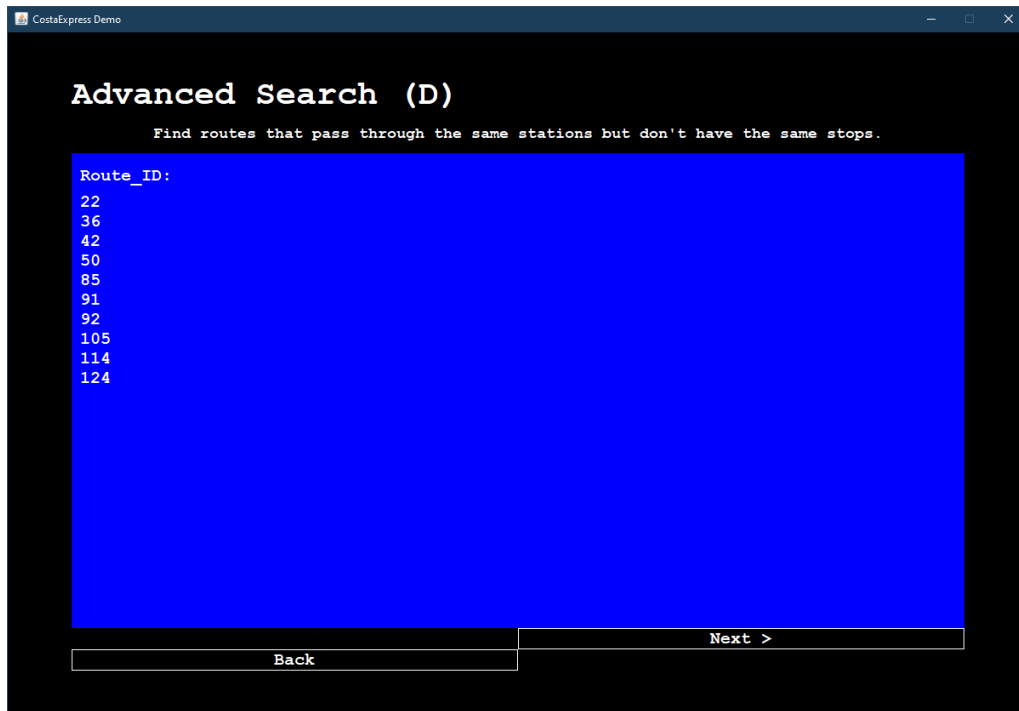
Rank the trains that are scheduled for more than one route.

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

Back Next >

Advanced Search (D)

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



The screenshot shows a software window titled "CostaExpress Demo" with standard Windows window controls. The main content area has a black background with white text. The title "Advanced Search (D)" is at the top. Below it is a subtitle: "Find routes that pass through the same stations but don't have the same stops." A large blue rectangular area contains a list of route IDs under the label "Route_ID:". The list includes: 22, 36, 42, 50, 85, 91, 92, 105, 114, and 124. At the bottom of the window, there are two buttons: "Back" on the left and "Next >" on the right.

CostaExpress Demo

Advanced Search (D)

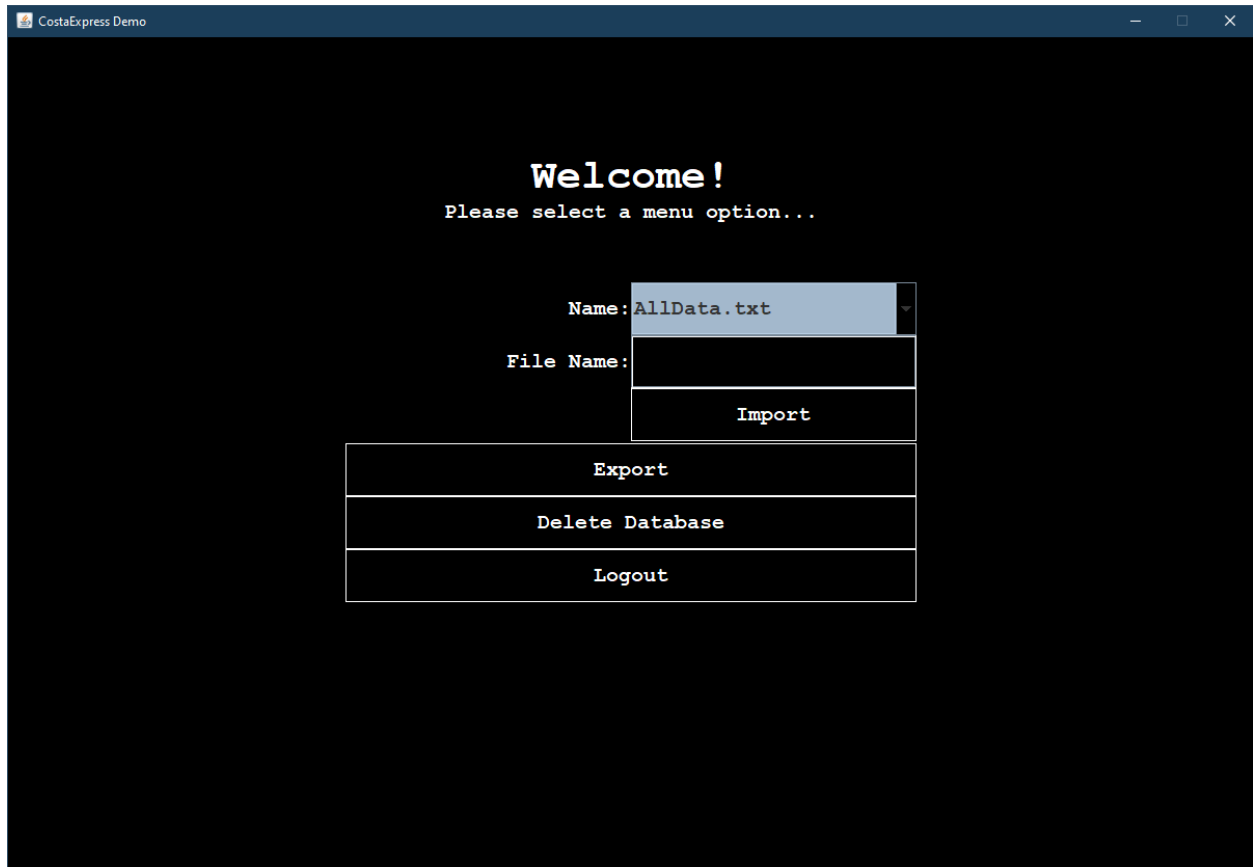
Find routes that pass through the same stations but don't have the same stops.

Route_ID:

- 22
- 36
- 42
- 50
- 85
- 91
- 92
- 105
- 114
- 124

Back Next >

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.