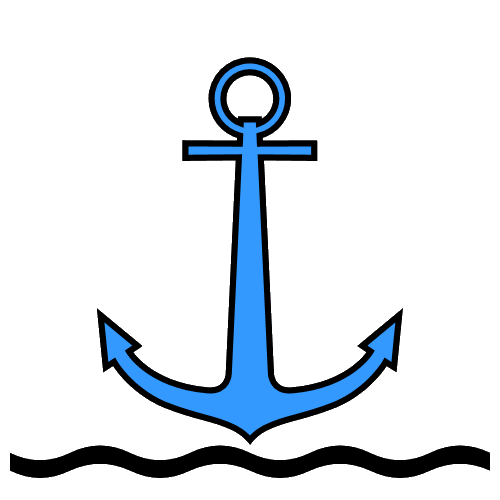
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**STEVE’S CRUISE LINE**

**PASSENGER RESERVATION APPLICATION & CRUISE CONTROL SYSTEM**

Final Report

Prepared for

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Development Team

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**Section II:** Database Design

**Section III:** System Description and Technical/User Manual

**Section IV:** System Test Cases

**Section V:** Work Distribution

**SECTION I: Project Assumptions and Company Policies**

For this project, we are making the assumption that we are an in-house development team working directly inside the STEVE’S CRUISE LINES, and therefore have input/and or direct control of the company’s internal policies.

It is also important to be aware of the following assumption: There are currently 4 trips loaded into the database; with trip ID 1 being the only trip that has occurred thus far. Trips 2-4 are currently ‘future’ trips that have yet to occur, and thus do not have any transactions or staff schedules associated with them. Trip ID 1 is the only one with such data.

**Room Policies and Pricing**

It is the policy of STEVE’S CRUISE LINES that no more than 4 people are permitted in a single room. There are three types of rooms: Inside, Ocean View, and Balcony. The pricing scheme (per regular passenger) for each room is as follows:

Inside: $1800.00

Ocean View: $2300.00

Balcony: $2800.00

Additionally, passengers who are seniors (65+) receive a special discount of 20%.

Finally, passengers who book closer to the departure date (20 days) receive a special discount of 40%, which can stack with the senior discount for a total of 60%.

**Monetary Policies**

STEVE’S CRUISE LINES has a uniform policy when it comes to all monies onboard the ships.

* All currency is in US Dollars (USD).
* Passengers are first charged when they first reserve rooms before the trip. A single passenger in each room is designated as the bill holder, who is charged at the end of the trip for all items purchased while on the trip.
* Taxes are included in all item prices.
* Any tips that a passenger wishes to give to staff is kept by the said staff in full.

**SECTION II: Database Design**

Our database for this system has a total of 28 tables, which contains everything from passenger information to the drink inventory of each ship.

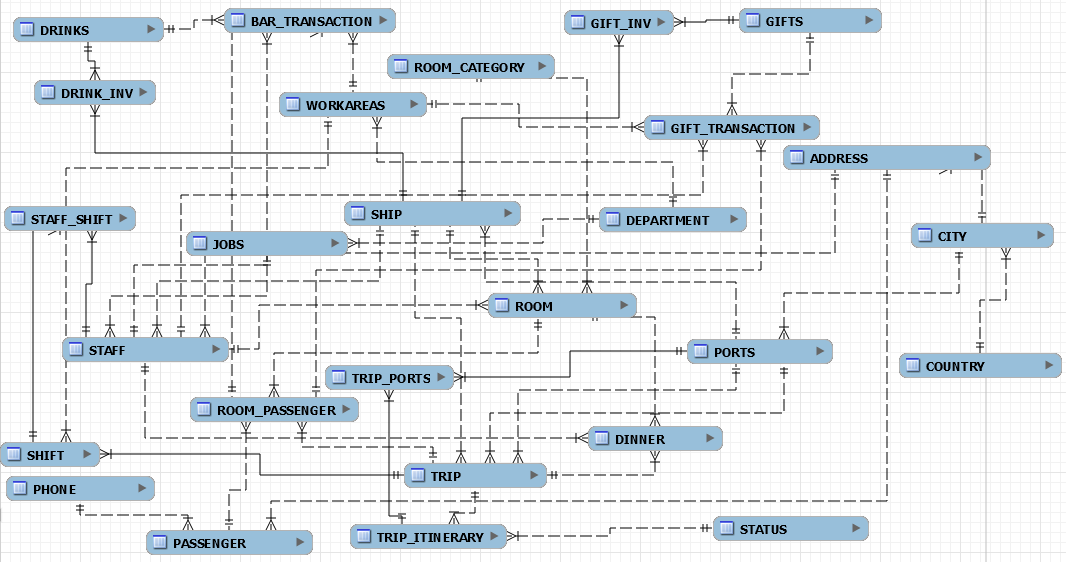
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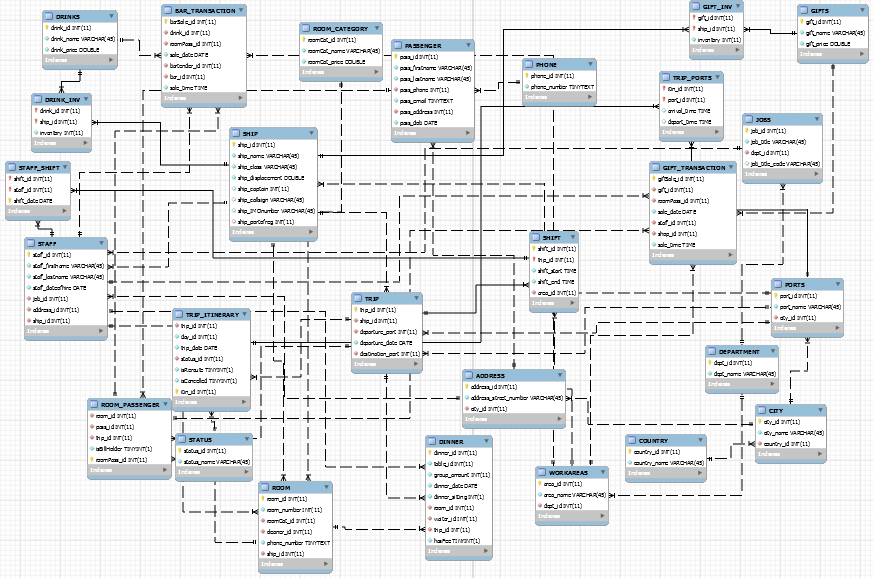
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Password: f2016\_s1\_user16

ERD (collapsed)



ERD (expanded)

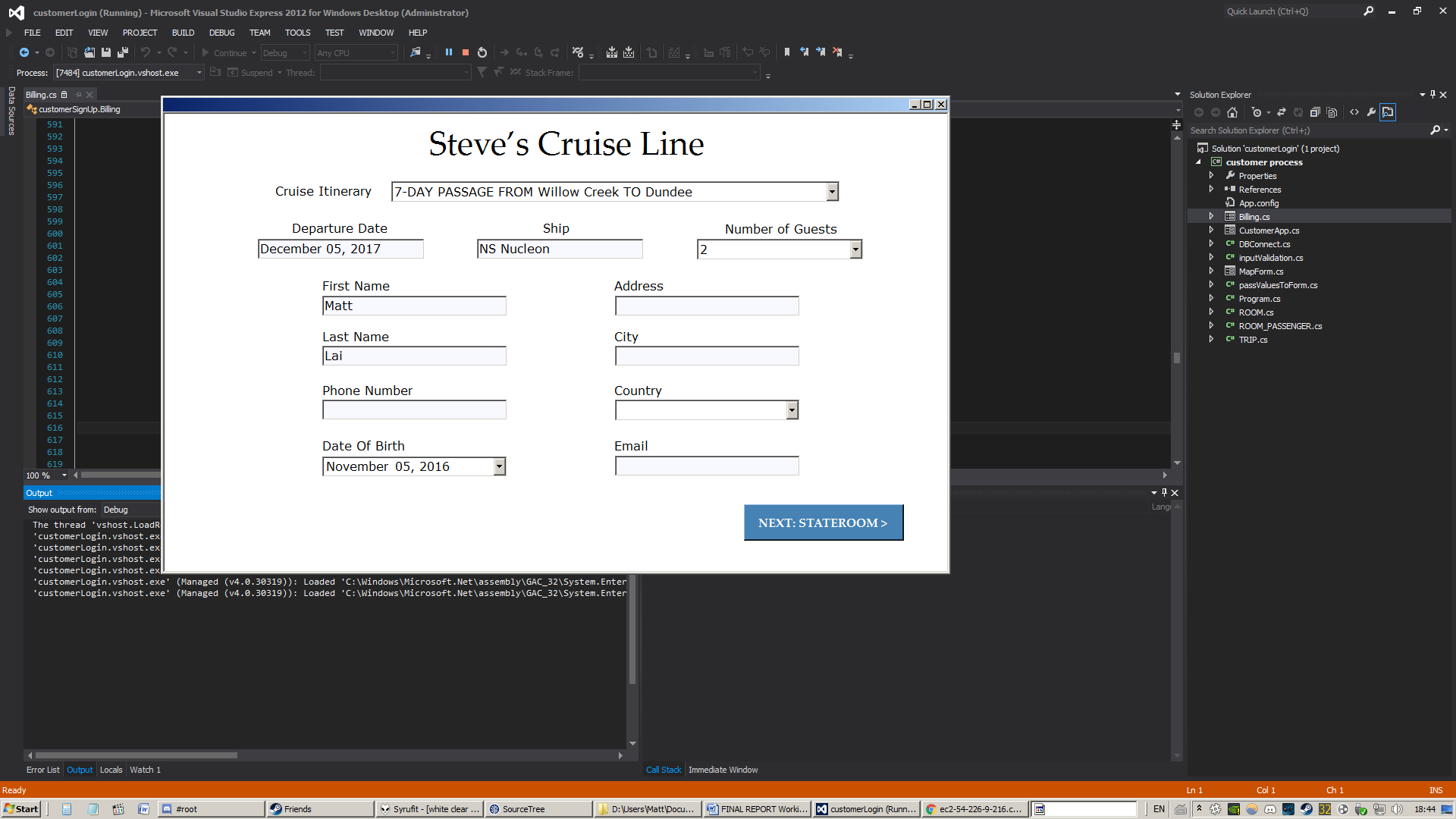


**SECTION III: System Description and Manual**

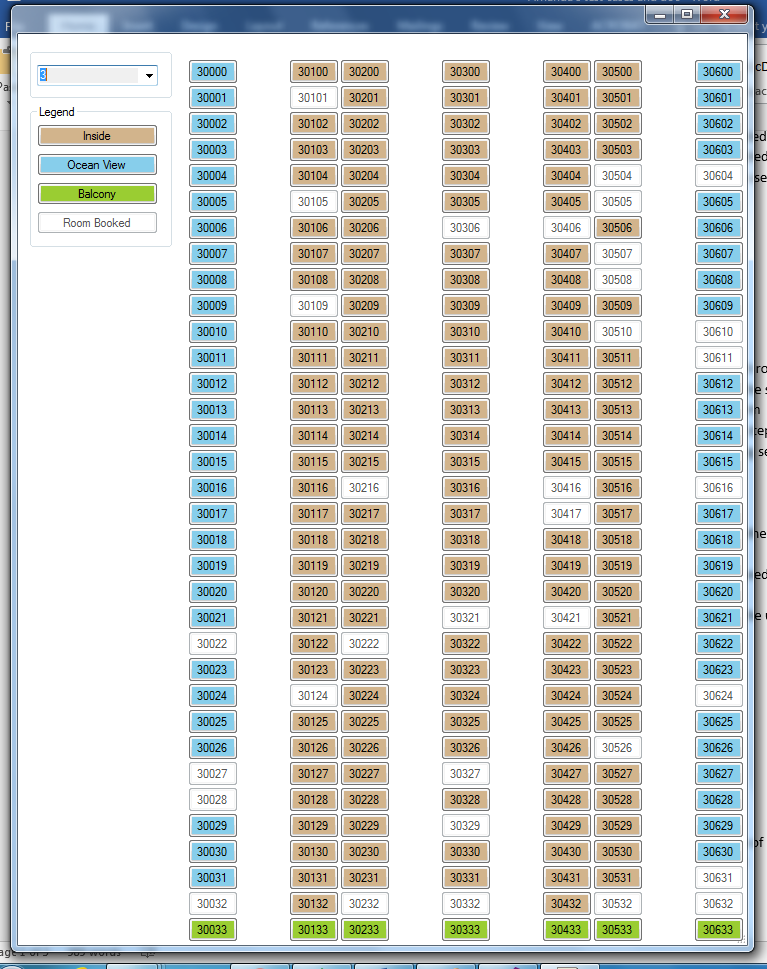
Our system consists of two programs: a reservation program intended for customers/passengers, and a CRUISE CONTROL which is a shipboard control program intended for the crew.

**Reservation Program**

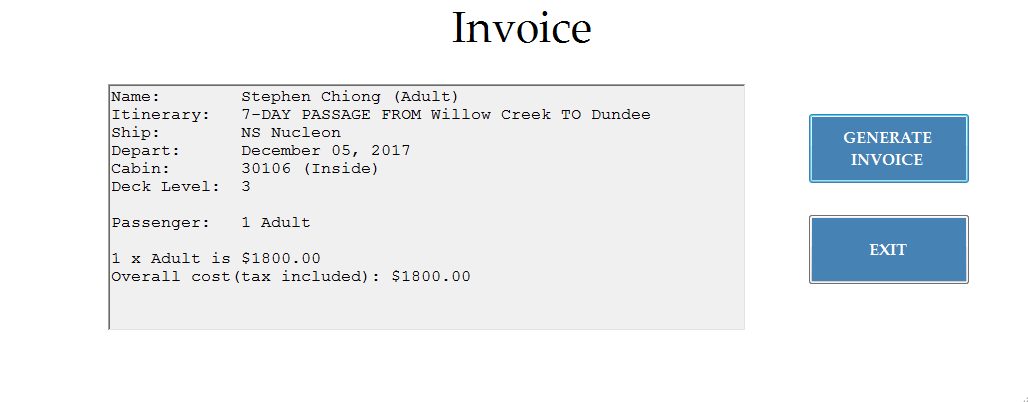
This program allows the user (in this case a customer) to book a room aboard a cruise. They are able to select a trip from a menu, and then will be prompted to enter their details. It is intended to be loaded onto a kiosk-like machine in the office for customers to use.



The user is first prompted with a blank form where they can select a trip, the amount of guests they’re bring with them (up to 3), and their personal information. Once they have filled out all the information correct, they can hit the ‘NEXT: STATEROOM’ button to continue onwards choosing a room. If they have guests, the program will prompt the user for their details first before proceeding.



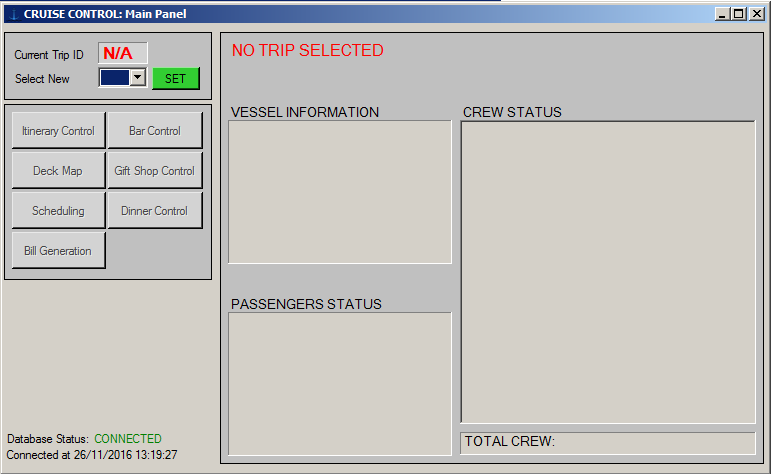
On the next form, the user is presented with a combobox in which they choose the deck they wish view. Under the combobox are non-interactive controls that make up the map legend. On selecting a deck in the combobox, a map of the selected deck is generated with. Booked rooms are represented by disabled buttons. Available rooms are represented by enabled buttons and are color coded according to the legend. Clicking on an available room assumes the user wishes to book this room and continues the program onto the final invoice form.



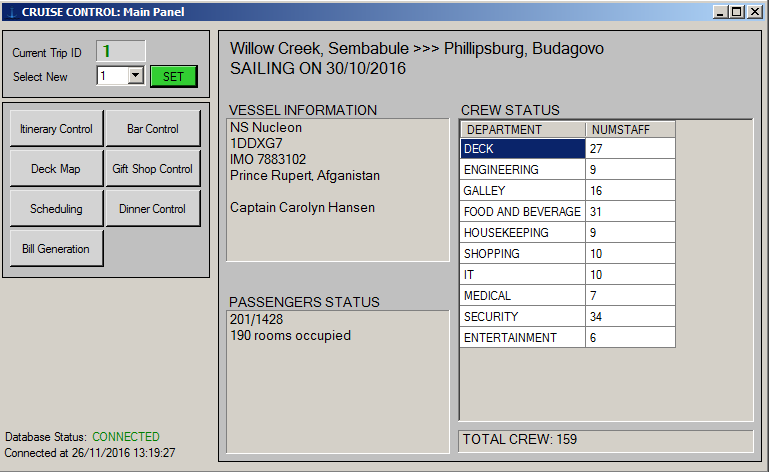
Once on the invoice form, the user clicks the ‘GENERATE INVOICE’ to print out their bill onto the display. Clicking the ‘EXIT’ button will return the user back to the first form.

**CRUISE CONTROL Program**

This program is intended for crew members of the ship to manage the functions of several areas of the ship. When the program first starts up, they will see the main control form. Note the lack of trip information.

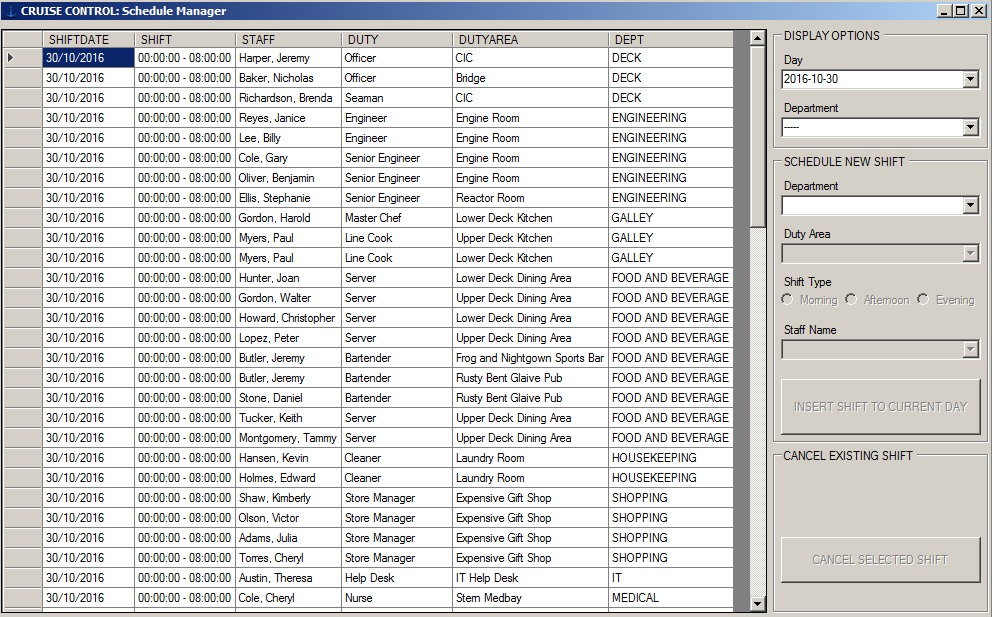


The user then uses the upper left controls to select a trip by its identification number. Information about the trip will then show itself on the right side, and the button controls on the left will become enabled.

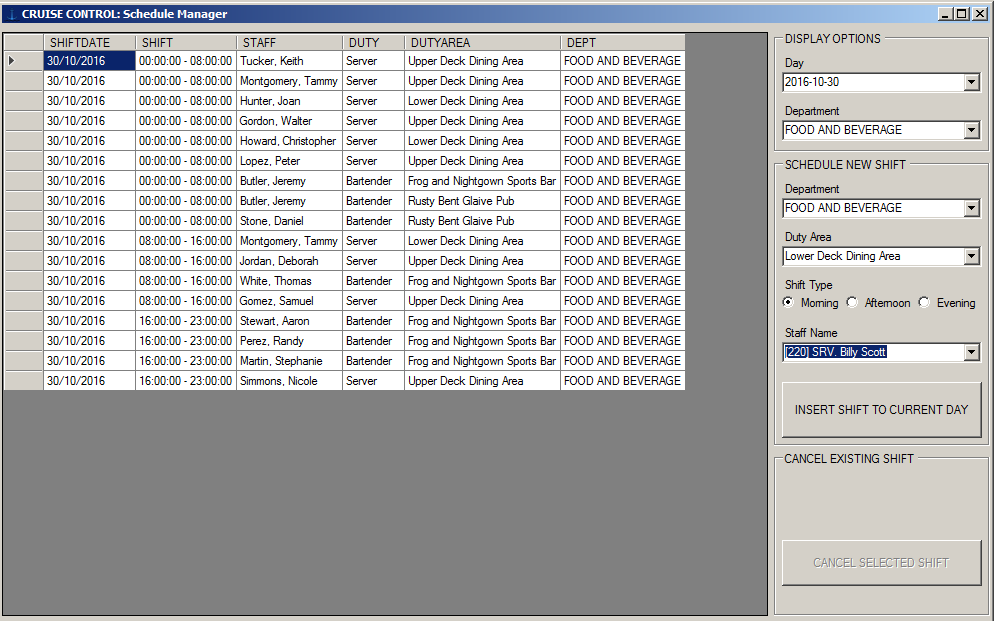


**CRUISE CONTROL: Scheduling Management**

This control is accessed from the main control program by pressing the ‘Scheduling’ button. From this control, the user is able to view the trip’s schedule by day, and filter it by departments. They are able to see information such as the shift times, the worker with their job, which area they’re assigned to, and more.



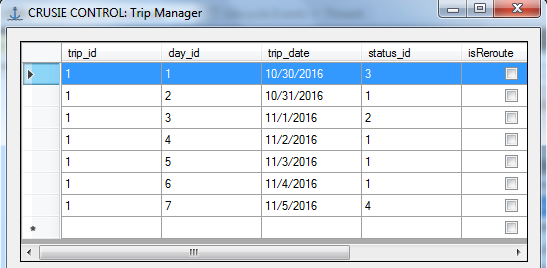
Using the controls grouped under ‘SCHEDULE NEW SHIFT’, the user is able to create new shifts and assigned them to the relevant employees.



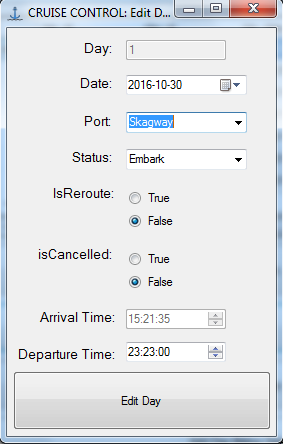
Finally, should the user wish to cancel a shift, the simply need to select the shift (row) they wish to cancel and hit the ‘CANCEL SELECTED SHIFT’ button.

**CRUISE CONTROL: Trip Manager**

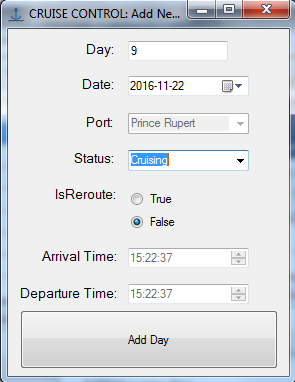
This control is accessed from the main control program by pressing the ‘Itinerary Control’ button. From this interface the user is able the edit the trip plan by adding more days and editing the contents of existing ones. To edit a day, the user selects a row from the display in the main GUI:



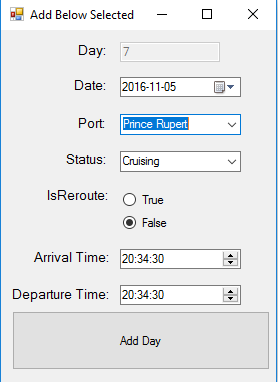
And then clicks the ‘Edit Day’ button. A new form will then appear on which they can edit the day’s details. When they are satisfied with the changes, the user clicks the ‘Edit Day’ button at the bottom of the form to save. The user then clicks the ‘Reload Days’ button on the main Trip Manager form to refresh the display.



To add a new day to the trip, the user clicks the ‘Add New Day’ button the main Trip Manager Form. A new form will then appear on which the user will be able to enter the details of the new day. When they are satisfied, they will click the ‘Add Day’ button at the bottom and the data will be saved. On the main Trip Manager form, the user will then click the ‘Reload Days’ button to refresh the display. Note: this function adds days to the end of the trip plan.



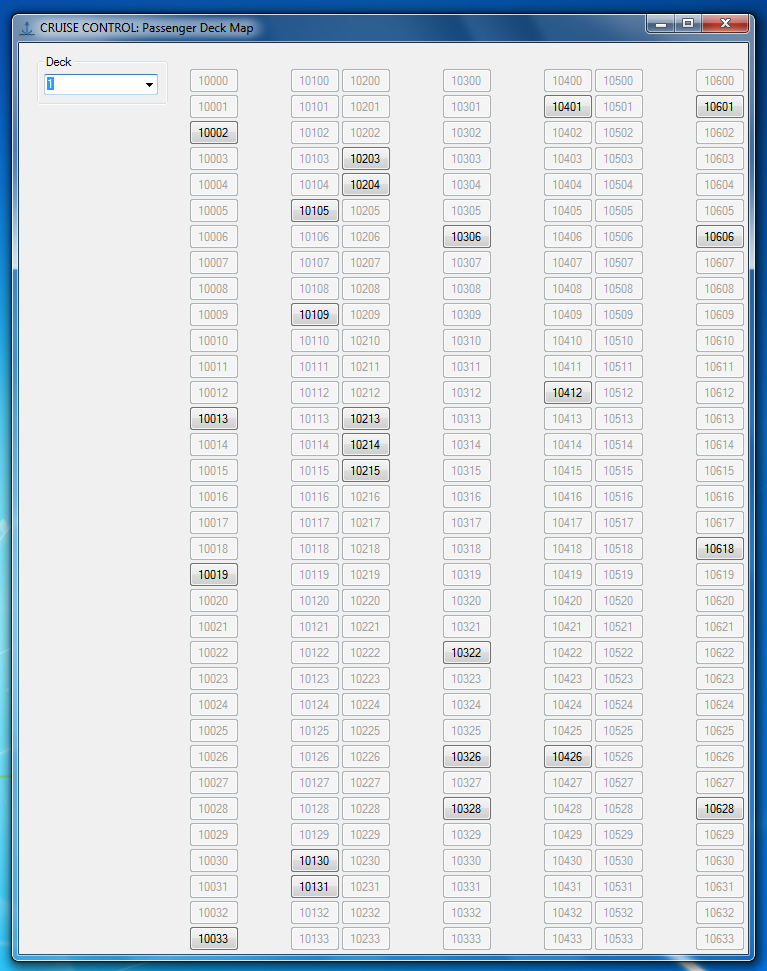
In order to add a new day between two existing days, the user must select a day on the display on the main Trip Manager form and hit ‘Add Day Below Selected’. A new form will then appear which will be very similar to the Add New Day sub-form.



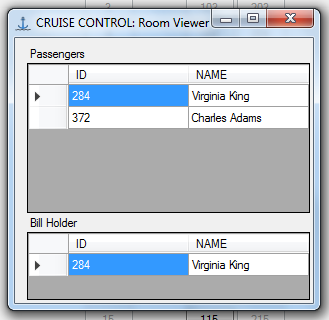
After entering the new data, the user will click the ‘Add Day’ button to save the inserted day. The user will then hit the ‘Reload Days’ button the main Trip Manager form to refresh the display. Note: it is highly recommended that the user at this point utilize the Edit Days function to cancel the inevitable duplicated day so that the newly insert day can take its place.

**CRUISE CONTROL: Deck Map**

This control is access from the main control program by clicking the ‘Deck Map’ button. This interface displays the floor plan of the ship and allows the user to view what passengers are in the selected room.



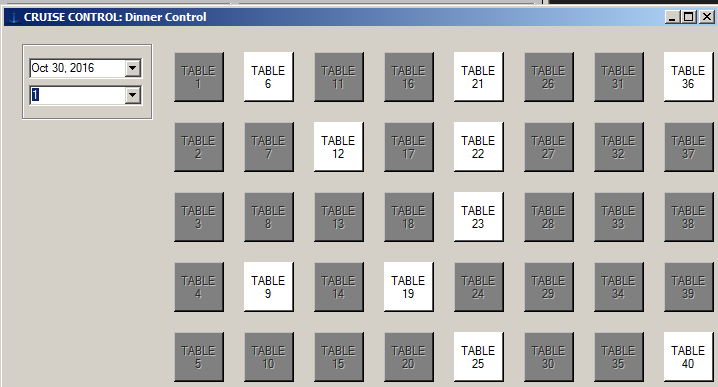
On launching the customer ship map, the user is presented with a combobox in which they choose the deck they wish view. On selecting a deck in the combobox, a map of the selected deck is generated with. Unlike the customer ship map, empty rooms are disabled and filled rooms are enabled.



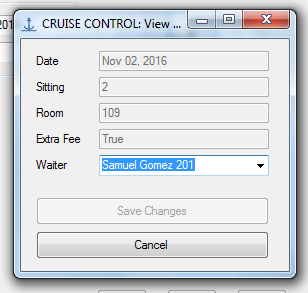
Clicking on a room brings up a form that lists the passengers residing in the room and the passenger whom is the bill holder for that room.

**CRUISE CONTROL: Dinner Control**

This control is access from the main control program by clicking the ‘Dinner Control’ button. This interface allows the user to see what tables in the dining area are booked, as well as how many guests are at the table and which waiter is assigned to it.



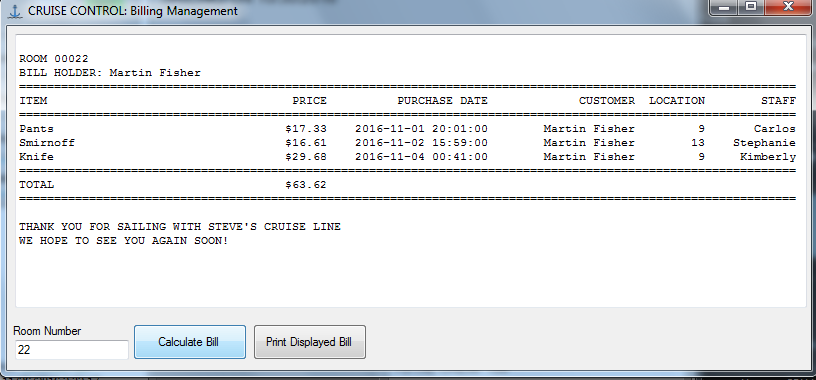
On launching the dinning map, the user is presented with two comboboxes in which they choose the date of dinning and the sitting number. When both values are selected, a map is generated with buttons. Empty tables are disabled and booked tables are enabled.



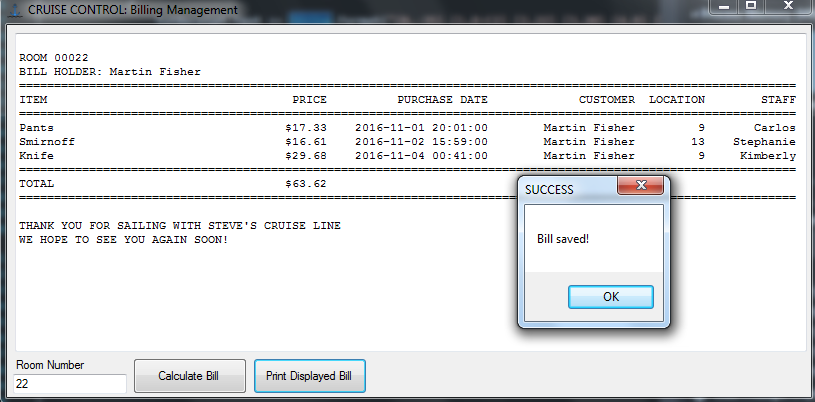
Clinking on an enabled table brings up a form with additional information: the date, the sitting number, the room of passengers who booked the table, if they’re paying an extra fee and their assigned waiter. The waiter value is displayed in a combobox which may be changed to assign a different waiter. This combobox contains all eligible employees, which are employees who are working on the current ship and whom are waiters. After selecting a different employee, the save changes button becomes enabled. Clicking this button assigns this waiter to the table in our database. The cancel button closes the information form without committing changes.

**CRUISE CONTROL: Billing Control**

This form is accessed by clicking the ‘Bill Generation’ button on the main control program. This interface handles the creation of bills to be charged to passengers at the end of the trip.



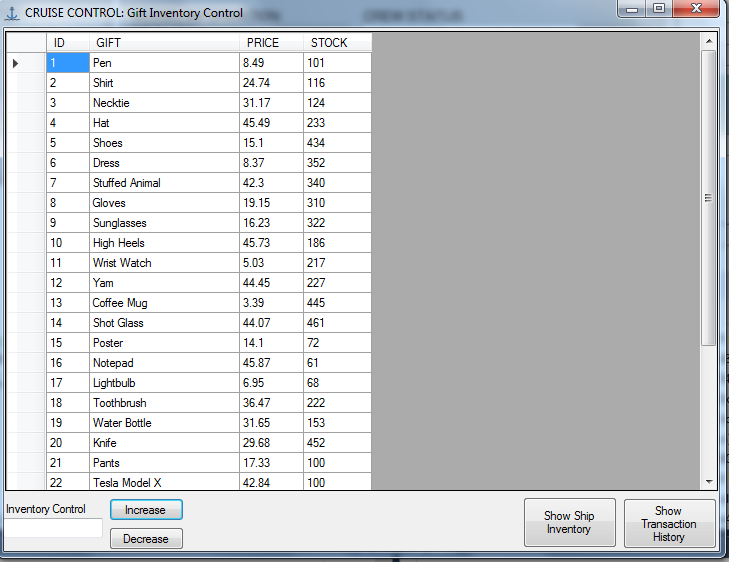
Upon start-up, the user will be presented with a blank display. The user can then enter a room number into the ‘Room Number’ text field. If the room is occupied with passengers and they’ve made onboard purchases, then upon the user clicking the ‘Calculate Bill’ button their bill will be displayed with the details of their purchases.



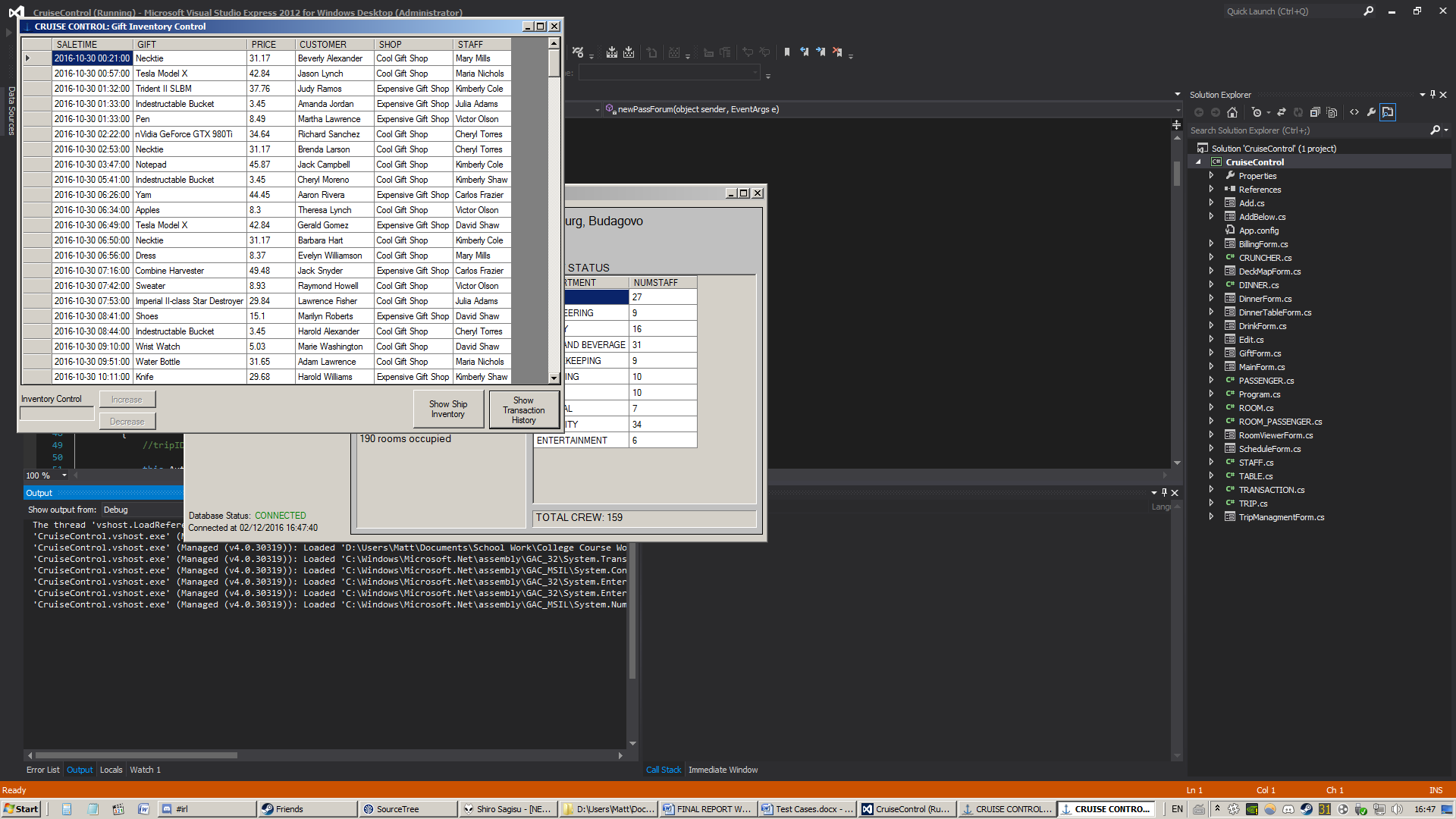
If the user clicks the ‘Print Displayed Bill’ button, the program will save the currently displayed bill to a text file titled “ROOM [room number] BILL.txt” located in the ‘SAVED BILLS’ folder.

**CRUISE CONTROL: Gift Control**

This form is access by clicking the ‘Gift Shop Control’ button on the main control program. This interface allows the user to manage the inventory of the gift shops aboard the ship as wells view a log of the transactions that have occurred.



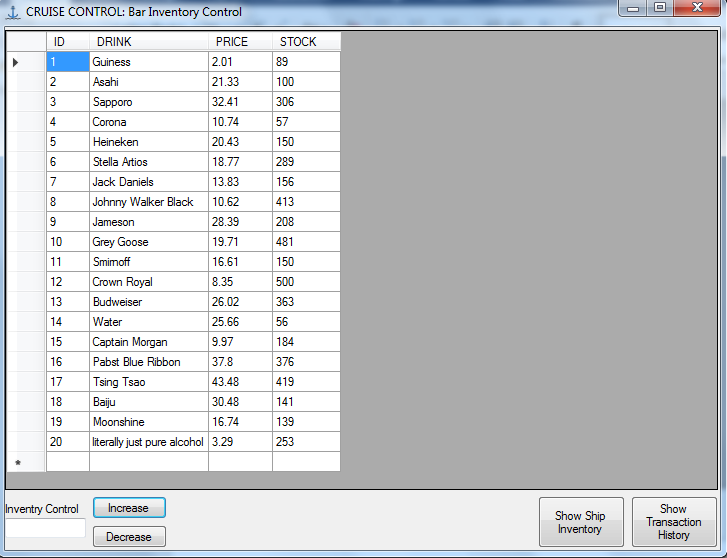
To update the stock of an item, the user clicks on the ‘STOCK’ cell of the desired item’s row, and then enters a number in the text field under ‘Inventory Control’. The user then clicks the ‘Increase’ or ‘Decrease’ button to add or subtract the entered number from the inventory.



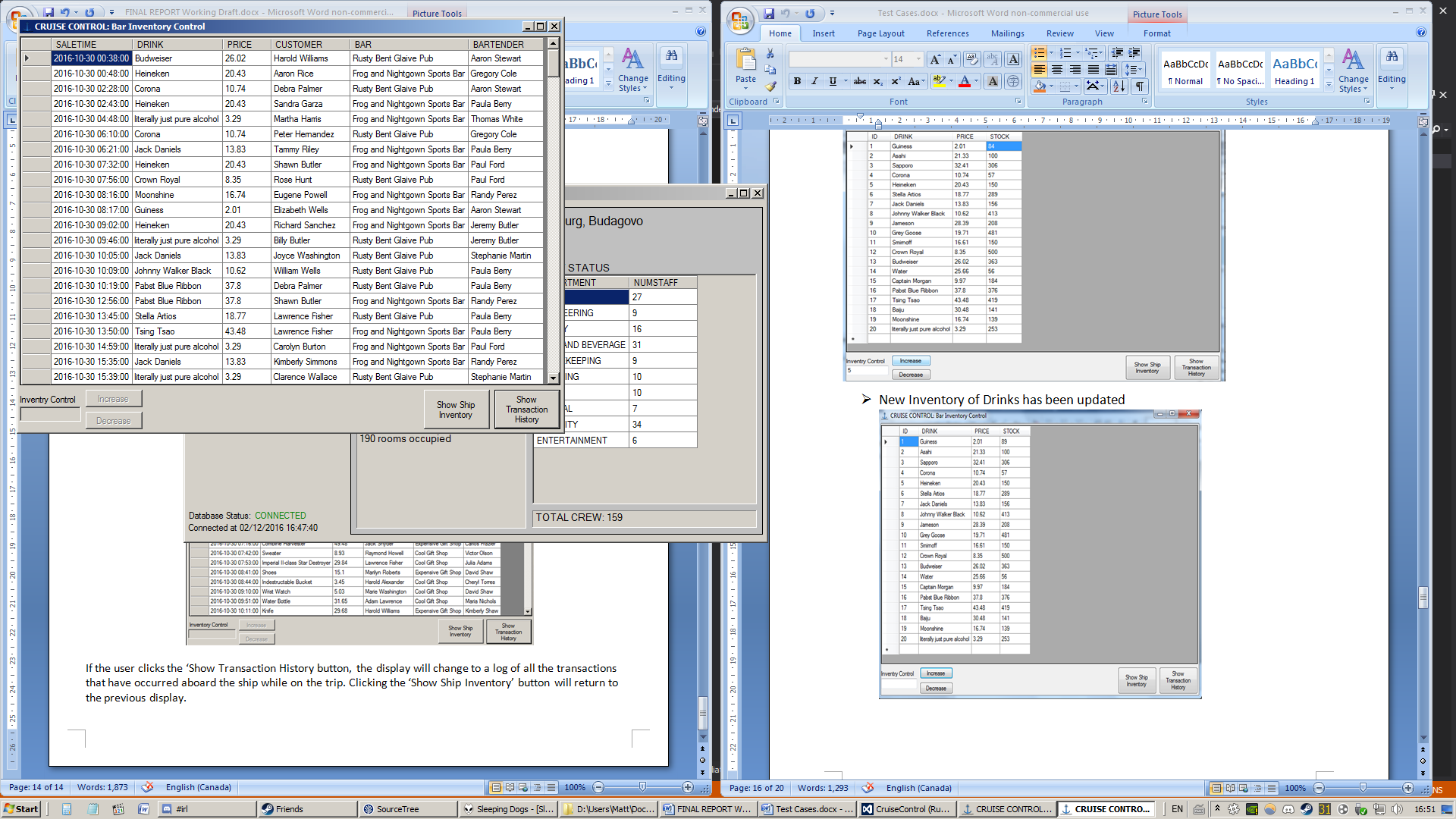
If the user clicks the ‘Show Transaction History button, the display will change to a log of all the transactions that have occurred aboard the ship while on the trip. Clicking the ‘Show Ship Inventory’ button will return to the previous display.

**CRUISE CONTROL: Bar Control**

This form is access by clicking the ‘Bar Control’ button on the main control program. This interface allows the user to manage the inventory of the bars aboard the ship as wells view a log of the transactions that have occurred.



To update the stock of a drink, the user clicks on the ‘STOCK’ cell of the desired drink’s row, and then enters a number in the text field under ‘Inventory Control’. The user then clicks the ‘Increase’ or ‘Decrease’ button to add or subtract the entered number from the inventory.



If the user clicks the ‘Show Transaction History button, the display will change to a log of all the transactions that have occurred aboard the ship while on the trip. Clicking the ‘Show Ship Inventory’ button will return to the previous display.

**SECTION IV: System Test Cases**

This section contains 10 test cases which document and demonstrate the system’s functionalities in action.

|  |  |
| --- | --- |
| **ID** | 1 |
| **Title** | Edit Day |
| **Pre-Conditions** | Set trip ID to 1 and click itinerary control |
| **Test Steps** | 1. Select a day in the datagridview      1. Click the “Edit Day” button to open the Edit form      1. Make changes to data   Original Edited     1. Click Edit Day, on the Edit form |
| **Expected Results** | Message box with the message “Day Edited” |

|  |  |
| --- | --- |
| **ID** | 2 |
| **Title** | Add New Day |
| **Pre-Conditions** | Set Trip ID to 1 and click Itinerary Control |
| **Test Steps** | 1. Click the “Add New Day” Button      1. Fill form with data      1. Click Add Day button 2. Click the Reload days button |
| **Expected Results** | New row in datagridview |

|  |  |
| --- | --- |
| **ID** | 3 |
| **Title** | Add Day Below Selected |
| **Pre-Conditions** | Set Trip ID to 1 and click Itinerary Control |
| **Test Steps** | 1. Select a row or cell in the datagridview      1. Click the “Add Day Below Selected” button 2. Fill the “Add Below Selected” form with data      1. Click the “Add Day” button 2. Click the “Reload Days” button |
| **Expected Results** | Adds a new row of data below the selected row  Changes the day\_id for all rows below the added row |

|  |  |
| --- | --- |
| **ID** | 4 |
| **Title** | Add 1 x Customer(number of guest 0) |
| **Pre-Conditions** | All fields must be filled/selected before proceeding to the next form:   * Cruise Itinerary = 7-DAY PASSAGE FROM Willow Creek TO Dundee * Number of Guest = 0 * All textboxes * Date Of Birth = May 4, 1990 |
| **Test Steps** | 1. Fill/select every fields, Figure 4.1 2. Click button “NEXT:STATEROOM>,” Figure 4.1 3. Select Ship Deck level, Figure 4.2 4. Choose cabin number, room colors are according to cabin type based on the legend, Figure 4.2 5. Click “GENERATE INVOICE” button, Figure 4.3 6. Click “EXIT” button to restart a new form, Figure 4.3 |
| **Expected Results** | * Customers Information will be inserted into database * Invoice generated displaying: * Passenger name * Itinerary name * Ship name * Departure date * Cabin number and type * Deck level * Total number of passengers * Price of per type of passenger * Overall cost(tax included) |

Figure 4.1. Main Form



Figure 4.2. Stateroom

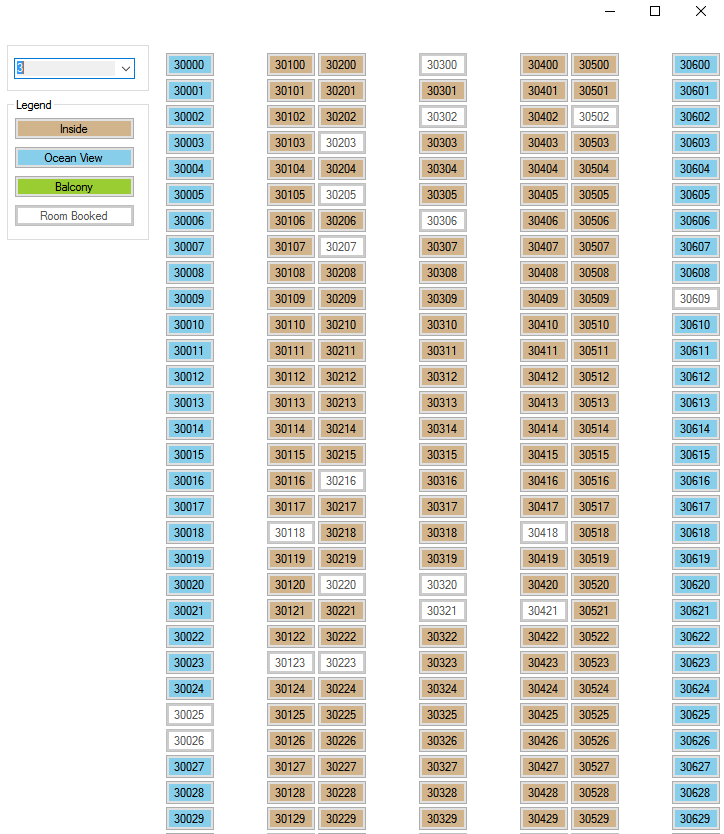
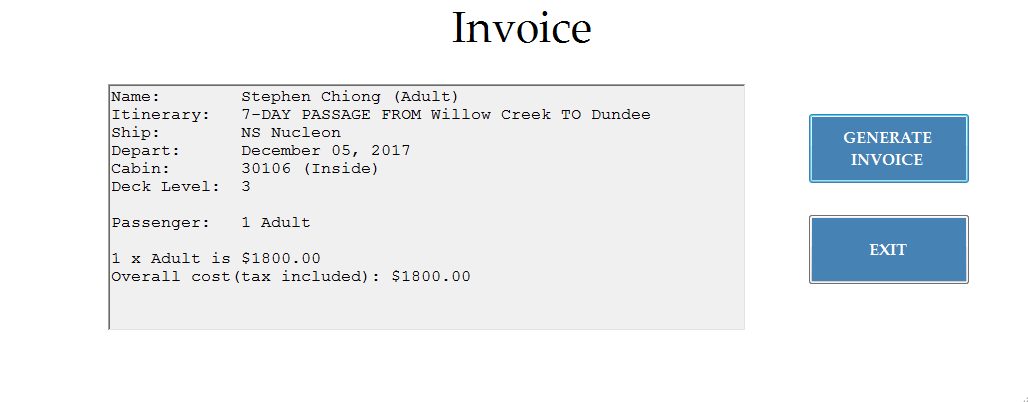
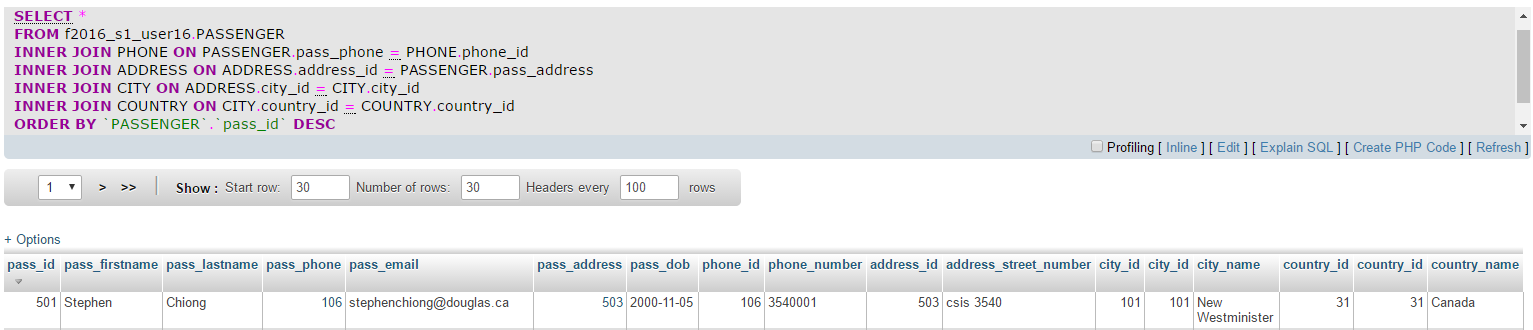


Figure 4.3. Invoice



SQL database



|  |  |
| --- | --- |
| **ID** | 5 |
| **Title** | Error handling responds - fail to fill in any fields |
| **Pre-Conditions** | * Trying to proceed to next form without filling up all fields |
| **Test Steps** | 1. Click “NEXT:STATEROOM” button, Figure 5.1 2. Click “OK” on error box, Figure 5.1 3. Fill/select one field – City=New Westminster, Figure 5.2 4. Click “NEXT:STATEROOM” button, Figure 5.2 5. Click “OK” on error box, Figure 5.2 6. Fill/select all except one field, Figure 5.3 7. Click “NEXT:STATEROOM” button, Figure 5.3 |
| **Expected Results** | * Error box appear * Error prompt removed on one field (when it’s been filled) * Error box will appear even with one unfilled field |

Figure 5.1. Error box appear

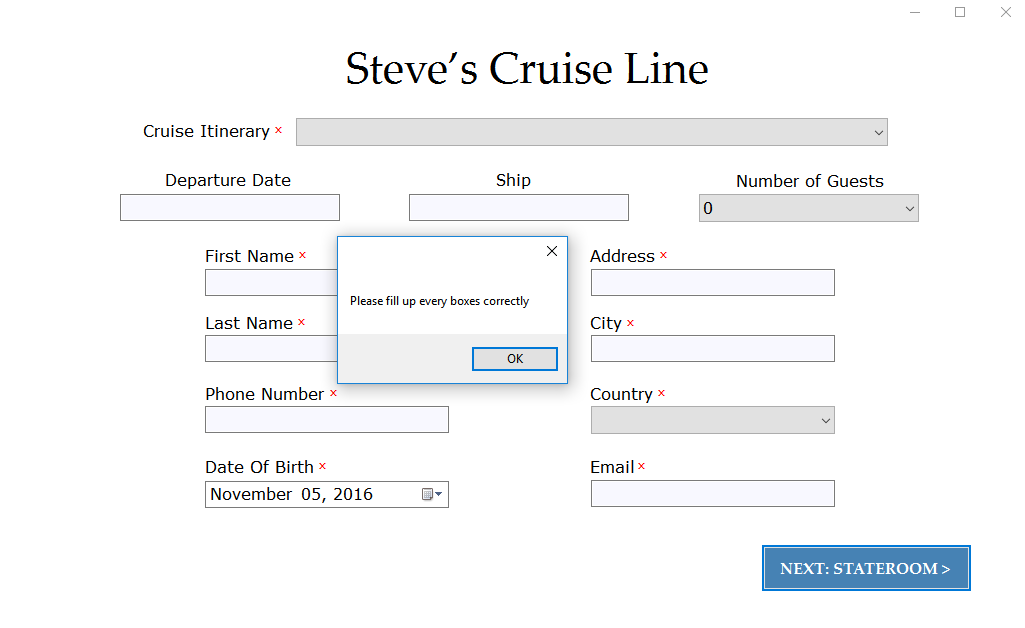


Figure 5.2. Error prompt removed on one field

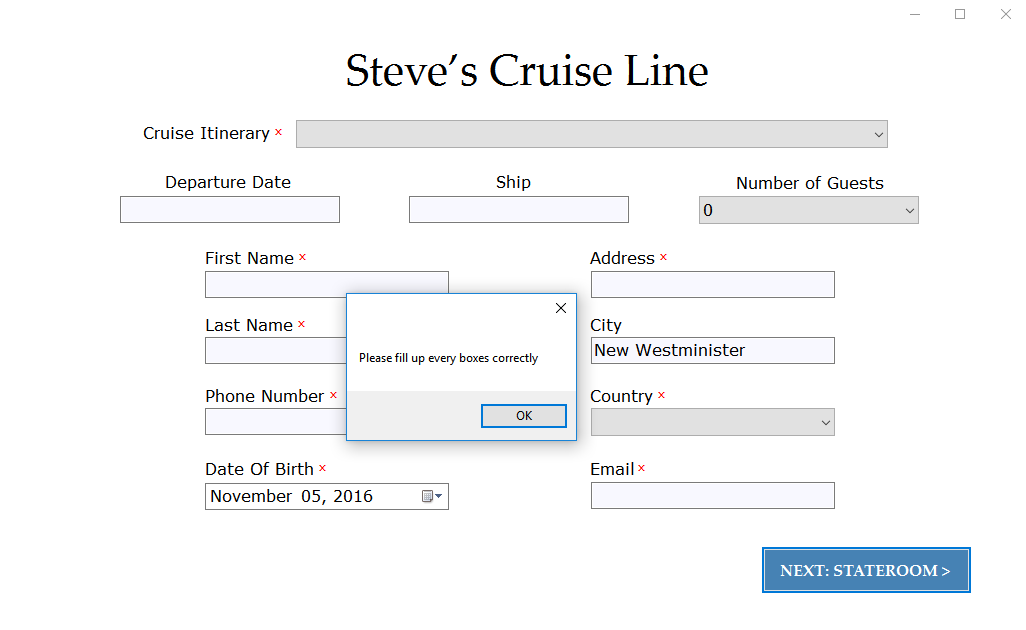
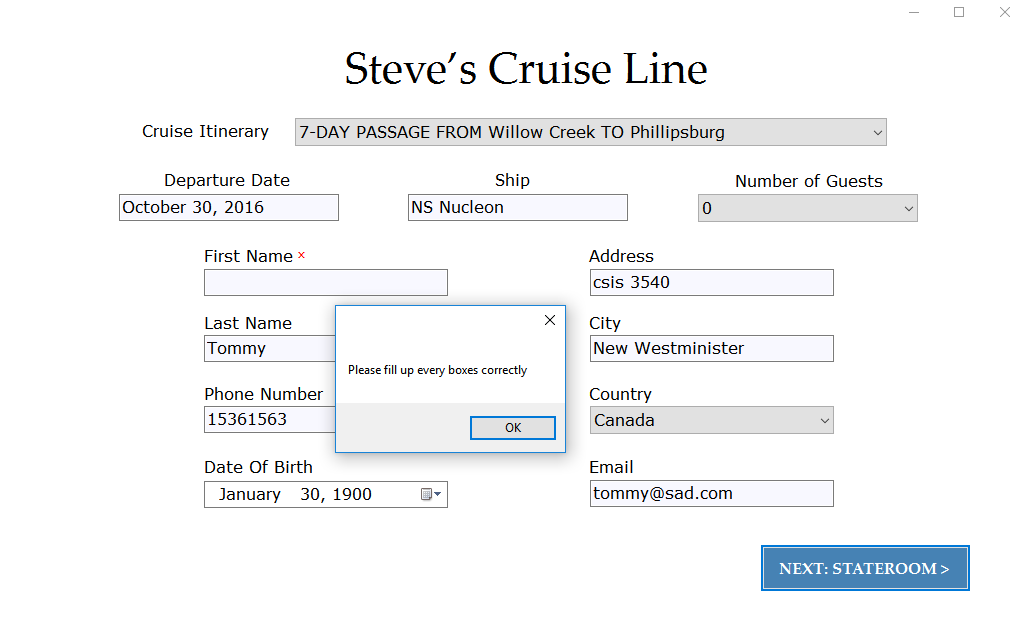


Figure 5.3. Error prompt removed on all except one field



|  |  |
| --- | --- |
| **ID** | 6 |
| **TITLE** | Billing Calculations |
| **PRE-CONDITIONS** | 1. System must be connected to the database. 2. Passenger must be a Bill Holder |
| **TEST STEPS** | 1. Enter Room number. For ex. Room number is 22 2. Click on “**Calculate Bill**” button. 3. To print out the bill, click on “**Print Displayed Bill**” button. |
| **EXPECTED RESULTS** | 1. Your bill will be calculated on the basis of items purchased by all the passengers in the room when you are onboard and the calculated total bill will be shown in the “textbox” on the screen along with the Bill Holder’s name and room number on the top of it.      1. A message in the message box “**Bill saved!**” tells that the bill is printed out successfully. |

|  |  |
| --- | --- |
| **ID** | 7 |
| **TITLE** | Billing Calculations |
| **PRE-CONDITIONS** | 1. System must be connected to the database. 2. Passenger must be a Bill Holder. |
| **TEST STEPS** | 1. Enter Room number. For ex. Room number is 8. 2. Click on “**Calculate Bill**” button. 3. To print out the bill , click on “**Print Displayed Bill**” button. |
| **EXPECTED RESULTS** | 1. A message in the message box “**No passenger in the selected room!**” tells that there is no passenger staying in the given room and bill can be calculated only for the rooms having bill holders staying in them.      1. A message in the message box “**No bill loaded!**” shows that there is no bill to save or print out for the given room as there is no passengers in it. |

|  |  |
| --- | --- |
| **ID** | 8 |
| **TITLE** | Drink Inventory Control by Increasing and Decreasing its Stock. |
| **PRE-CONDITIONS** | 1. System must be connected to the database. 2. Passenger must click Increase or Decrease button. |
| **TEST STEPS** | 1. Select the Row of Drink Inventory value.      1. Enter the amount, you would like to increase or decrease the inventory. 2. Click the “Increase” button to increase the stock or Click the “Decrease” button to decrease the stock of Drinks.      1. To check the new updated Inventory Click “Show ship inventory” button. |
| **EXPECTED RESULTS** | Selected drink’s inventory value will be updated according to the amount entered. And it updates the original database at the backend. |

|  |  |
| --- | --- |
| **ID** | 9 |
| **TITLE** | Gifts Inventory Control by Increasing and Decreasing its Stock. |
| **PRE-CONDITIONS** | 1. System must be connected to the database. 2. Passenger must click Increase or Decrease button. |
| **TEST STEPS** | 1. Select the Row of Gifts Inventory value.      1. Enter the amount, you would like to increase or decrease the inventory. 2. Click the “Increase” button to increase the stock or Click the “Decrease” button to decrease the stock of Drinks.      1. To check the new updated Inventory Click “Show ship inventory” button. |
| **EXPECTED RESULTS** | Selected Gift’s inventory value will be updated according to the amount entered. And it updates the original database at the backend. |

|  |  |
| --- | --- |
| **ID** | 10 |
| **Title** | Display Map |
| **Pre-Conditions** | Select trip 1 in the previous form |
| **Test Steps** | 1. Select deck 3 in the combo box. Note the state of each room drawn   pass_map 1   1. Select deck 1 in the combo box. Note the changes in the states of the rooms 2. Close the ship map and select trip 4 in the previous form 3. Select deck 3. Compare the rooms with the map from step 2 and 3 4. Book room 30000 in trip 1, deck 3. Refer to the booking section of the user manual 5. Find room 30000 by selecting trip 1 deck 3 again 6. Note the changes to the map |
| **Expected Results** | 1. The maps noted in the steps should differ from each other. 2. The map in step 1 should match the provided picture 3. Room 30000 should be disabled in step 8 when compared to the map in step 2 |

**SECTION V: Work Distribution**

This section details the work distribution that was followed during the development of the system.

**DATABASE MODULE**

Schema: Matthew Lai

Data Generation: Matthew Lai

Data Cleaning: Matthew Lai

Shaun Yerui Lu

Manjot Sangha

**RESERVATION MODULE**

Customer Input Form: Shaun Yerui Lu

Room Selection Form: Amanda Lee

Invoice Generation Form: Shaun Yerui Lu

Final Integration: Shaun Yerui Lu

**CRUISE CONTROL**

Main Form: Matthew Lai

Trip Planning Form(s): Manjot Sangha

Passenger Deck Map: Amanda Lee

Scheduling Form: Matthew Lai

Bill Generation Form: Pawanpreet Kaur

Gift Inventory Form: Manupreet Kaur

Bar Inventory Form: Manupreet Kaur

Dinner Control Form(s): Amanda Lee

Final Integration: Matthew Lai

**FINAL REPORT**

Preamble: Matthew Lai

User Manual(s): Manupreet Kaur

Pawanpreet Kaur

Matthew Lai

Amanda Lee

Shaun Yerui Lu

Manjot Sangha

Test Cases: Manupreet Kaur

Pawanpreet Kaur

Amanda Lee

Shaun Yerui Lu

Manjot Sangha

Formatting: Matthew Lai

Manjot Sangha