

Section 6 - Software Development

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Database Structure

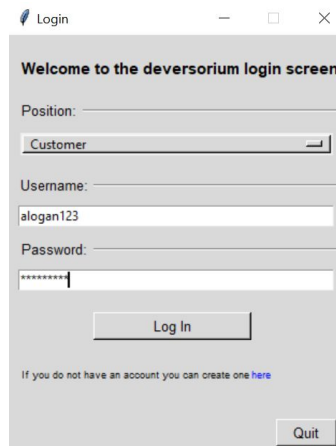
Name	Type	Schema
▼ Tables (8)		
▼ Bill		
BillID	integer	"BillID" integer
BookingID	integer	"BookingID" integer
Mini_bar_bill	float	"Mini_bar_bill" float
Main_bar_bill	float	"Main_bar_bill" float
Restaurant_bill	float	"Restaurant_bill" float
Telephone_bill	float	"Telephone_bill" float
Spa_bill	float	"Spa_bill" float
Room_service	float	"Room_service" float
Deposit_paid	boolean	"Deposit_paid" boolean
Gym_fee	float	"Gym_fee" float
Total_price	float	"Total_price" float
▼ Booking		
BookingID	integer	"BookingID" integer
Number_of_guests	integer	"Number_of_guests" integer
Check_in	string	"Check_in" string
Check_out	string	"Check_out" string
RoomID	integer	"RoomID" integer
Holiday_Type	string	"Holiday_Type" string
Price	float	"Price" float
Date_of_booking	string	"Date_of_booking" string
Offer_code	string	"Offer_code" string
CustomerID	integer	"CustomerID" integer
▼ Customer		
CustomerID	integer	"CustomerID" integer
Telephone_number	TEXT	"Telephone_number" TEXT
First_name	string	"First_name" string
Surname	string	"Surname" string
Address	string	"Address" string
Postcode	string	"Postcode" string
Payment_Type	string	"Payment_Type" string
Card_Number	integer	"Card_Number" integer
Expiry_Date	string	"Expiry_Date" string
CVC_code	integer	"CVC_code" integer
City	string	"City" string
DOB	integer	"DOB" integer
Allergies	string	"Allergies" string
Email	string	"Email" string
Username	string	"Username" string
Password	string	"Password" string
▼ Facilities		
FacilitiesID	integer	"FacilitiesID" integer
Minibar	boolean	"Minibar" boolean
Wi-Fi	boolean	"Wi-Fi" boolean
Shower	boolean	"Shower" boolean
Safe_deposit_box	boolean	"Safe_deposit_box" boolean
Air_conditioning	boolean	"Air_conditioning" boolean

Section 6 - Software Development

▼ Room	CREATE TABLE Room (RoomID integer, Room_Number integer, Price_of_room float, Room_TypeID integer, Number_of_beds integer, FacilitiesID integer, Floor integer, View string, Maintained boolean, Staff_RoomID integer)	
RoomID	integer	"RoomID" integer
Room_Number	integer	"Room_Number" integer
Price_of_room	float	"Price_of_room" float
Room_TypeID	integer	"Room_TypeID" integer
Number_of_beds	integer	"Number_of_beds" integer
FacilitiesID	integer	"FacilitiesID" integer
Floor	integer	"Floor" integer
View	string	"View" string
Maintained	boolean	"Maintained" boolean
Staff_RoomID	integer	"Staff_RoomID" integer
▼ Room_Type	CREATE TABLE Room_Type (Room_TypeID integer, Type_of_suite string, Balcony boolean, Pets boolean, Price float)	
Room_TypeID	integer	"Room_TypeID" integer
Type_of_suite	string	"Type_of_suite" string
Balcony	boolean	"Balcony" boolean
Pets	boolean	"Pets" boolean
Price	float	"Price" float
▼ Staff	CREATE TABLE "Staff" (`StaffID` integer, `Salary` float, `Frst_name` string, `Srname` string, `Email` string, `Postcode` string, `DOB` string, `contact_number` TEXT, `Username` string, `Password` string, `Job` string)	
StaffID	integer	"StaffID" integer
Salary	float	"Salary" float
Frst_name	string	"Frst_name" string
Srname	string	"Srname" string
Email	string	"Email" string
Postcode	string	"Postcode" string
DOB	string	"DOB" string
contact_number	TEXT	"contact_number" TEXT
Username	string	"Username" string
Password	string	"Password" string
Job	string	"Job" string
▼ Staff_Room	CREATE TABLE Staff_Room (Staff_RoomID integer, StaffID integer, RoomID integer, primary key(Staff_RoomID, StaffID, RoomID))	
Staff_RoomID	integer	"Staff_RoomID" integer
StaffID	integer	"StaffID" integer
RoomID	integer	"RoomID" integer

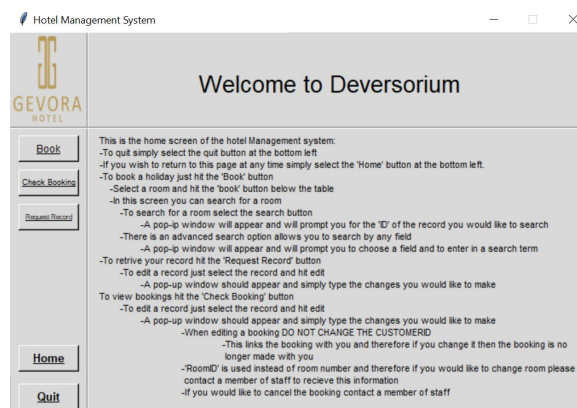
Interfaces

Logging onto the system with a customer account



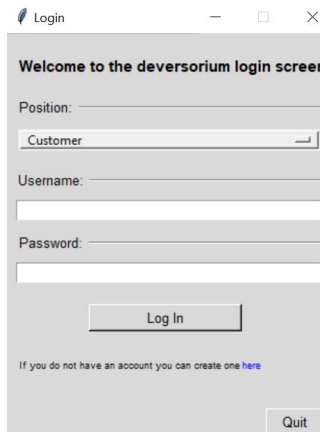
The image shows a 'Login' window titled 'Welcome to the deversorium login screen'. It contains three input fields: 'Position' with a dropdown menu showing 'Customer', 'Username' with the text 'alogan123', and 'Password' with masked characters '*****'. Below these fields is a 'Log In' button. At the bottom, there is a link that says 'If you do not have an account you can create one [here](#)' and a 'Quit' button.

The 'LogIn' button is selected.



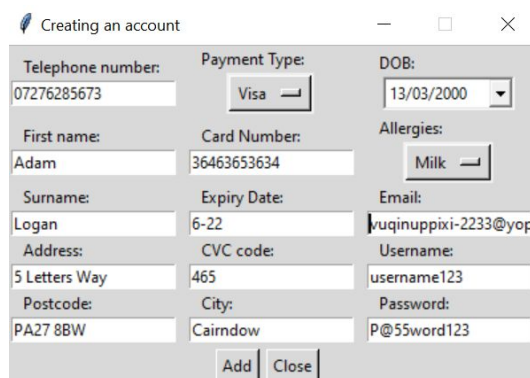
The image shows the 'Home' screen of the 'Hotel Management System'. On the left is a sidebar with buttons for 'Book', 'Check Bookings', 'Request Record', 'Home', and 'Quit'. The main area has a title 'Welcome to Deversorium' and a list of instructions for using the system, such as 'This is the home screen of the hotel Management system:', 'To quit simply select the quit button at the bottom left.', and 'To book a holiday just hit the 'Book' button'.

Creating an account via the Login Screen



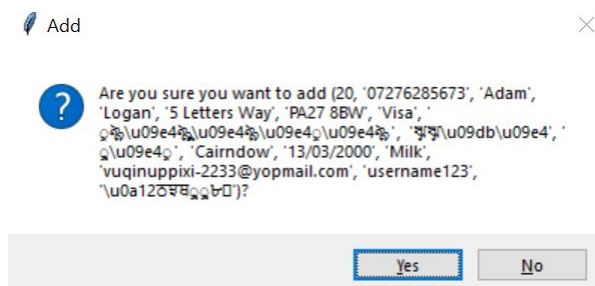
A screenshot of a 'Login' window titled 'Welcome to the deversorium login screen'. It contains a 'Position' dropdown menu set to 'Customer', a 'Username' text field, a 'Password' text field, a 'Log In' button, and a 'Quit' button. A link 'here' is visible below the password field.

The 'here' button is selected



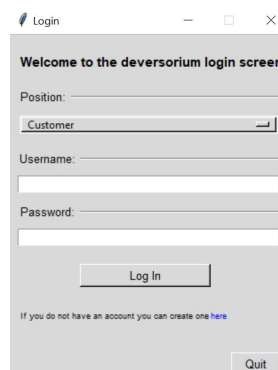
A screenshot of a 'Creating an account' window. It contains multiple fields: 'Telephone number' (07276285673), 'Payment Type' (Visa), 'DOB' (13/03/2000), 'First name' (Adam), 'Card Number' (36463653634), 'Allergies' (Milk), 'Surname' (Logan), 'Expiry Date' (6-22), 'Email' (vuqinuppixi-2233@yopmail.com), 'Address' (5 Letters Way), 'CVC code' (465), 'Username' (username123), 'Postcode' (PA27 8BW), 'City' (Cairndow), and 'Password' (P@55word123). There are 'Add' and 'Close' buttons at the bottom.

The 'add' button is selected



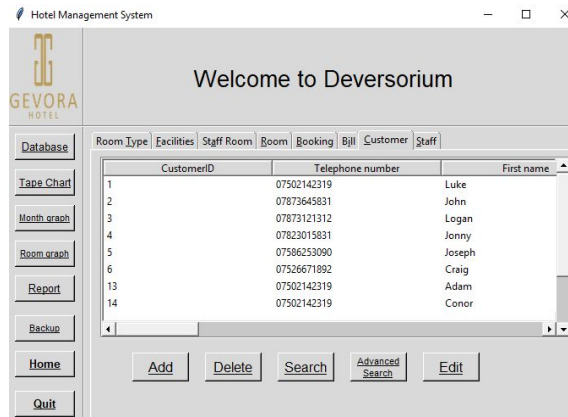
A screenshot of a confirmation dialog window titled 'Add'. It contains a question: 'Are you sure you want to add (20, '07276285673', 'Adam', 'Logan', '5 Letters Way', 'PA27 8BW', 'Visa', '36463653634', '6-22', 'vuqinuppixi-2233@yopmail.com', '5 Letters Way', 'Cairndow', '13/03/2000', 'Milk', 'vuqinuppixi-2233@yopmail.com', 'username123', 'P@55word123')?' and 'Yes' and 'No' buttons.

The 'yes' button is selected and the user is brought back to the Login Screen



A screenshot of the 'Login' window, identical to the first one, showing the 'Welcome to the deversorium login screen' with fields for Position, Username, Password, and buttons for Log In and Quit.

Creating a record in the Customer Table

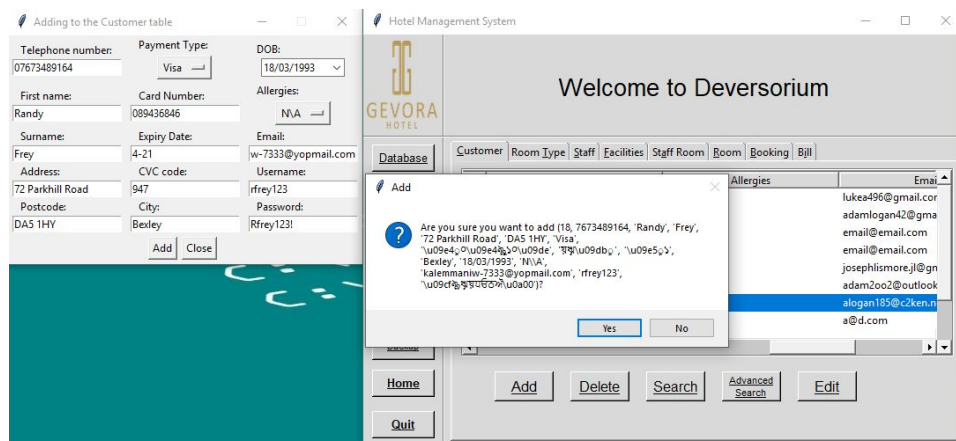


The add button has been clicked and the record added.

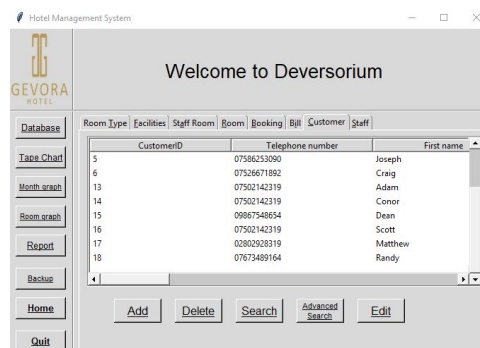
The screenshot shows the 'Adding to the Customer table' pop-up window. The 'Add' button has been clicked, and the record has been added to the database. The form contains the following data:

Telephone number:	Payment Type:	DOB:
07673489164	Visa	18/03/1993
First name:	Card Number:	Allergies:
Randy	089436846	N/A
Surname:	Expiry Date:	Email:
Frey	4-21	kalemmaniw-7333@yo
Address:	CVC code:	Username:
Flat 3, 72 Parkhill Road	947	rfrey123
Postcode:	City:	Password:
DA5 1HY	Bexley	Rfrey123!

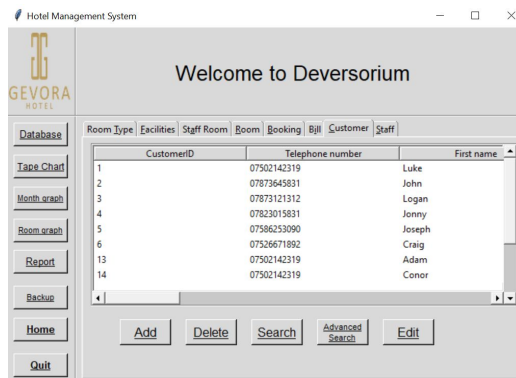
The 'add' button on the pop-up window has been clicked



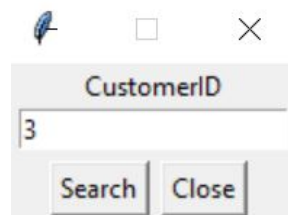
'Yes' has been selected and the record has been added to the database.



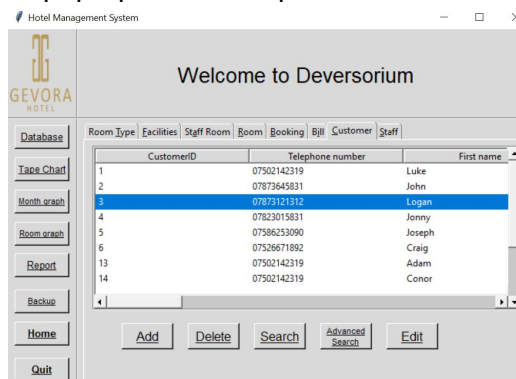
Searching for a Record in the Customer Table



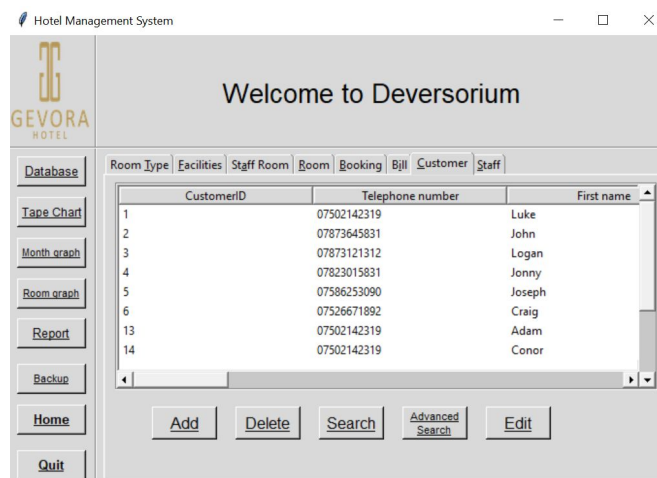
The search button is pressed



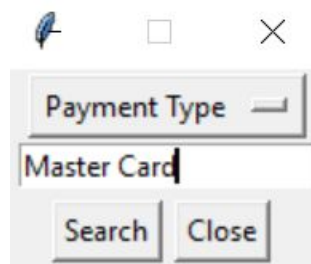
The search button within the pop-up window is pressed



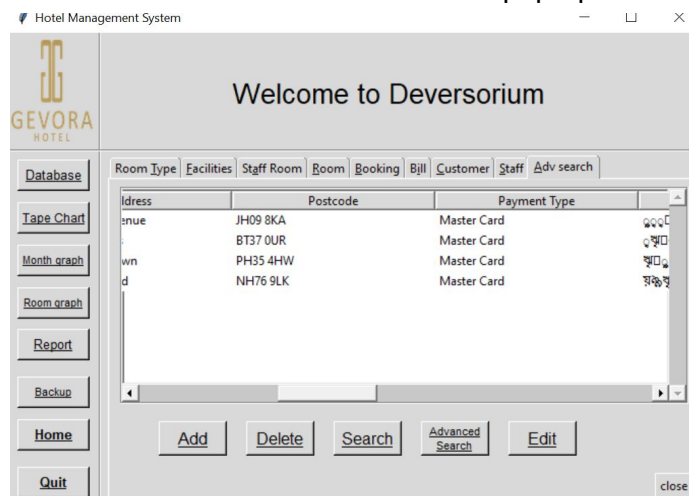
Advanced Search in the Customer Table



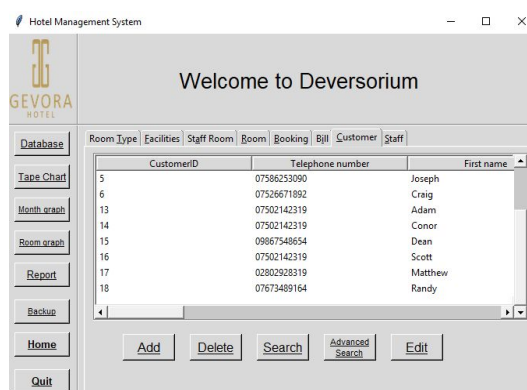
The 'Advanced Search' button is selected



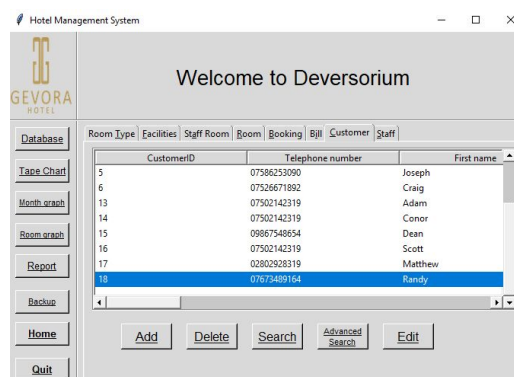
The correct field is selected and the 'search' button in the pop-up window is selected



Updating a record in the Customer Table



The record to be updated will be selected from the table.



The edit button will be clicked.

Editing the Customer table

Telephone number: 7673499164	Payment Type: Visa	DOB: 18/03/1993
First name: Randy	Card Number: 089436846	Allergies: N/A
Surname: Frey	Expiry Date: 4-21	Email: ekippell@6789@yop
Address: 72 Parkhill Road	CVC code: 947	Username: rfrey123
Postcode: DA5 1HY	City: Bexley	Password: Rfrey123!

Buttons: Edit, Close

The 'edit' button within the 'pop-up' window will be clicked

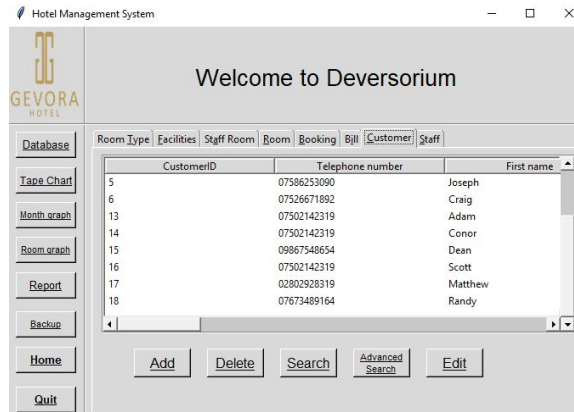
Are you sure you want to edit (18, 07673489164, Randy, Frey, 72 Patchill Road, DA5 1TH, Visa, u09d4c, u09d94d6, u09d9d, 77u09d9db, u09e5c, Bexley, 18/03/1993, N\A, kalemmaniw-7333@yopmail.com, rfrey123, u09d9c7u09d9c7u09da001 to (18, 07673489164, Randy, Frey, 72 Patchill Road, DA5 1TH, Visa, u09d4c, u09d94d6, u09d9d, 77u09d9db, u09e5c, Bexley, 18/03/1993, N\A, kippalless-6789@yopmail.com, rfrey123, u09d9c7u09d9c7u09da001)?

Yes No

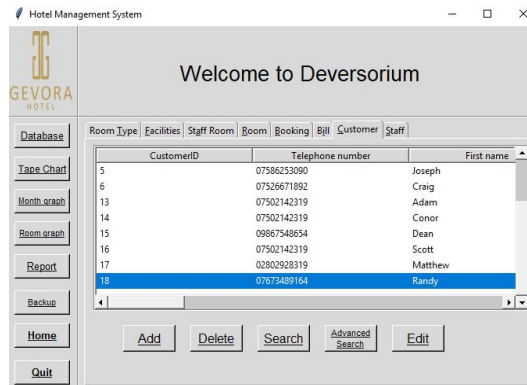
The 'yes; button will be clicked

Deleting a record in the Customer Table

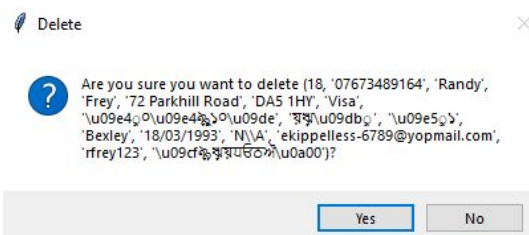
(Note: Multiple records can be deleted by holding down the 'Ctrl' button and selecting the records. For each record an individual message box will appear for that record)



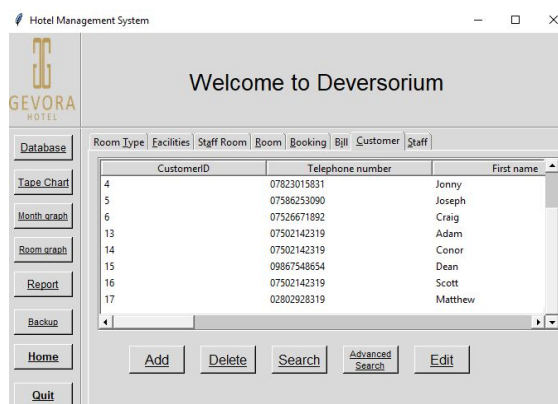
The record is selected.



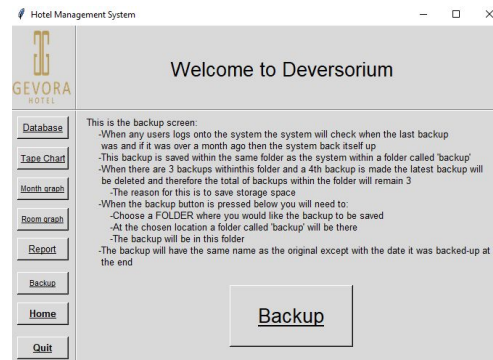
The 'delete' button is clicked.



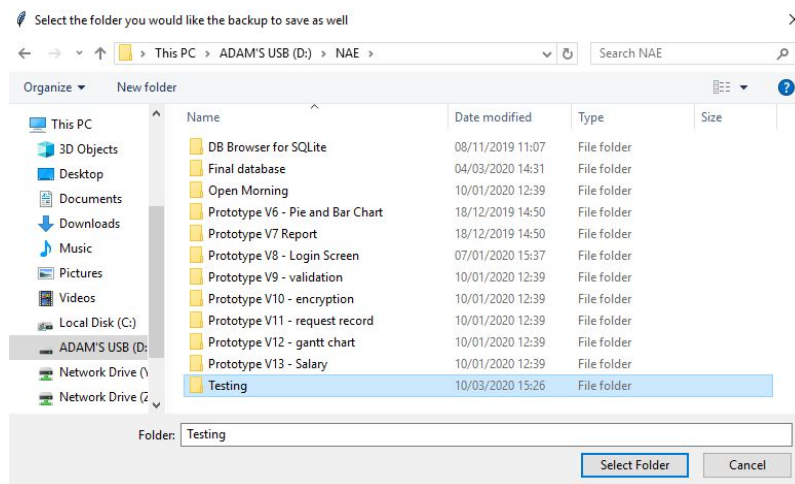
The 'yes' button is clicked.



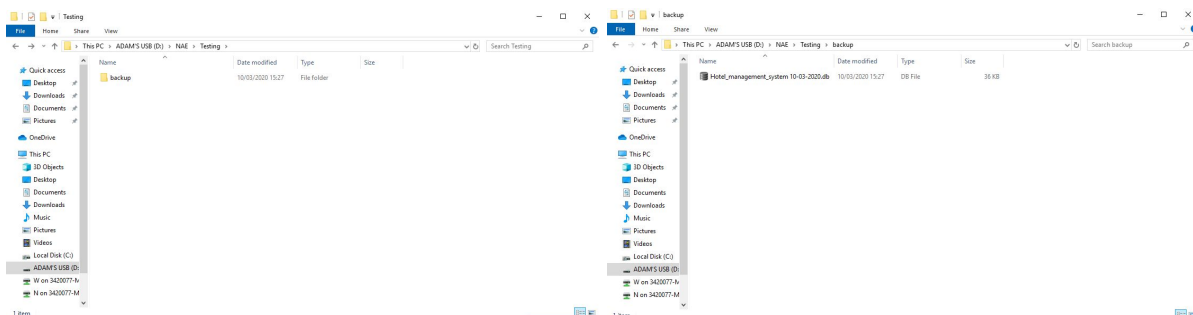
Manual Backup



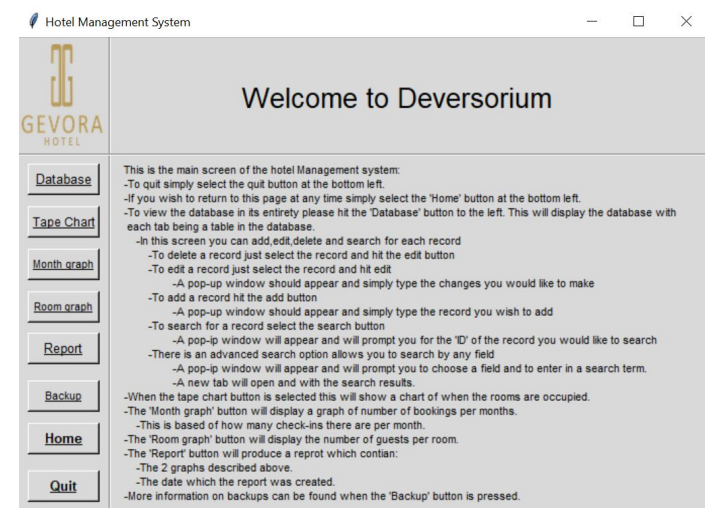
The 'backup' button is selected.



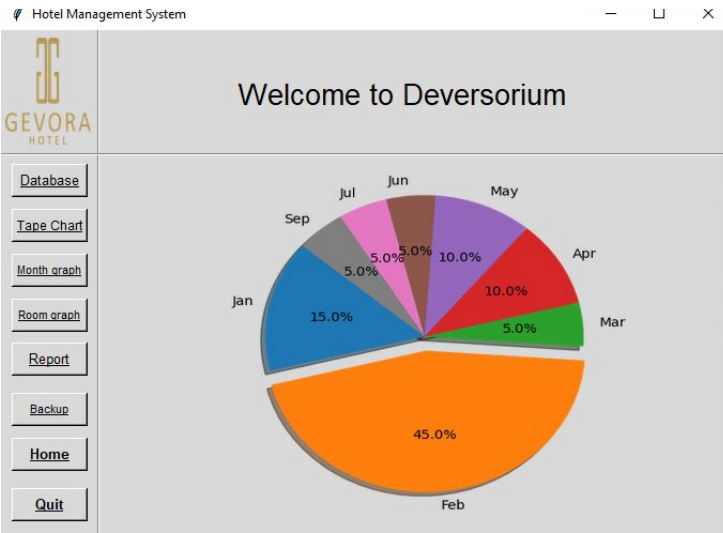
The button 'Select Folder' is then clicked. The screenshot to the left is what is inside the 'testing' (D:\NAE\Testing) folder while the screenshot to the right is within the 'backup' folder (D:\NAE\Testing\backup)



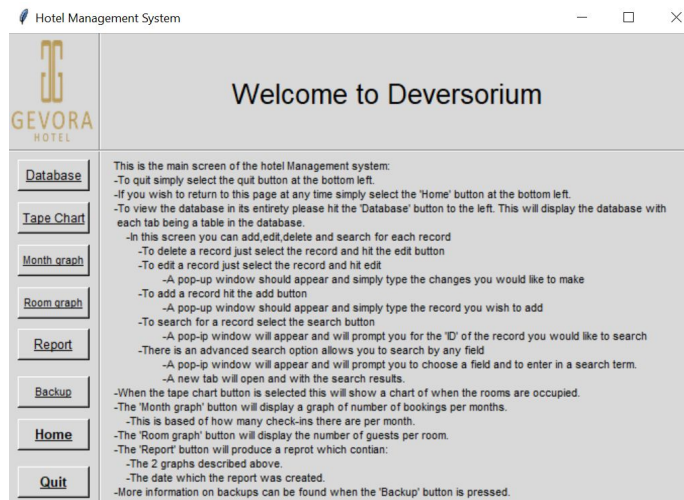
Month Graph



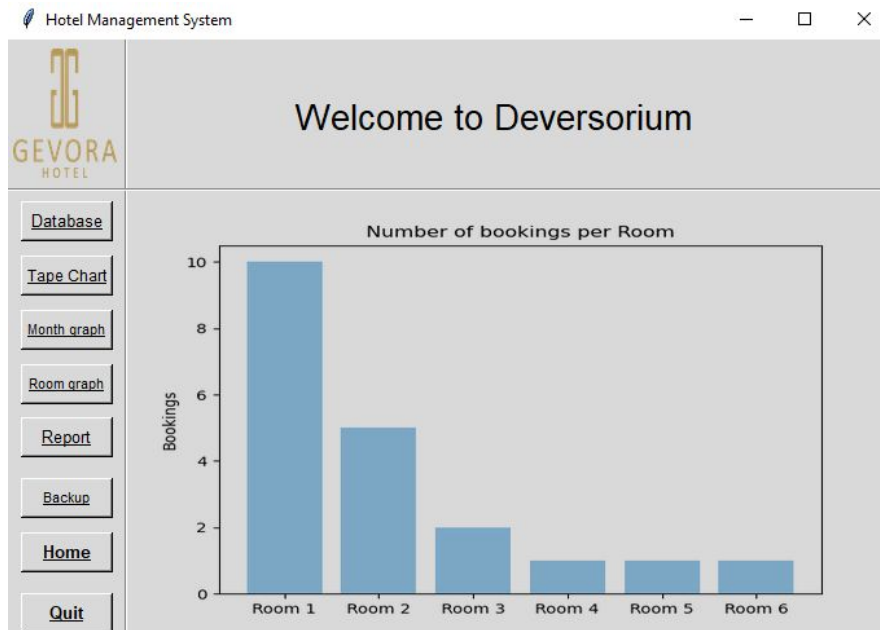
The 'Month graph' button is selected



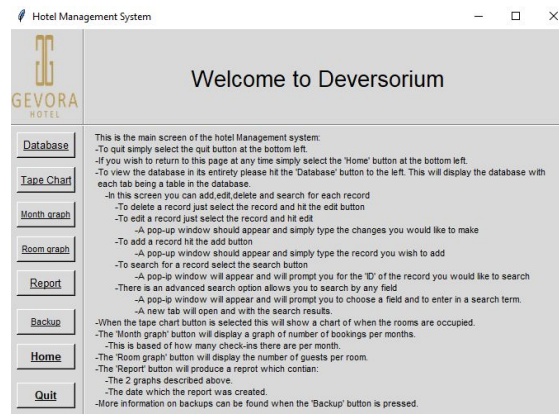
Room Graph



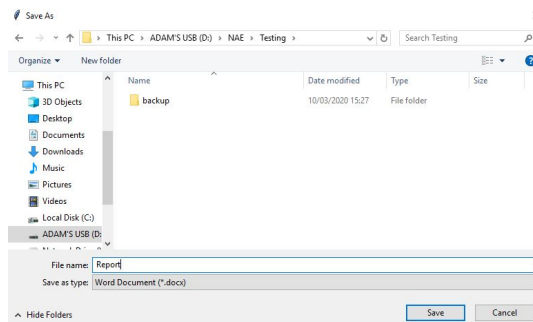
The 'Room graph' button is selected



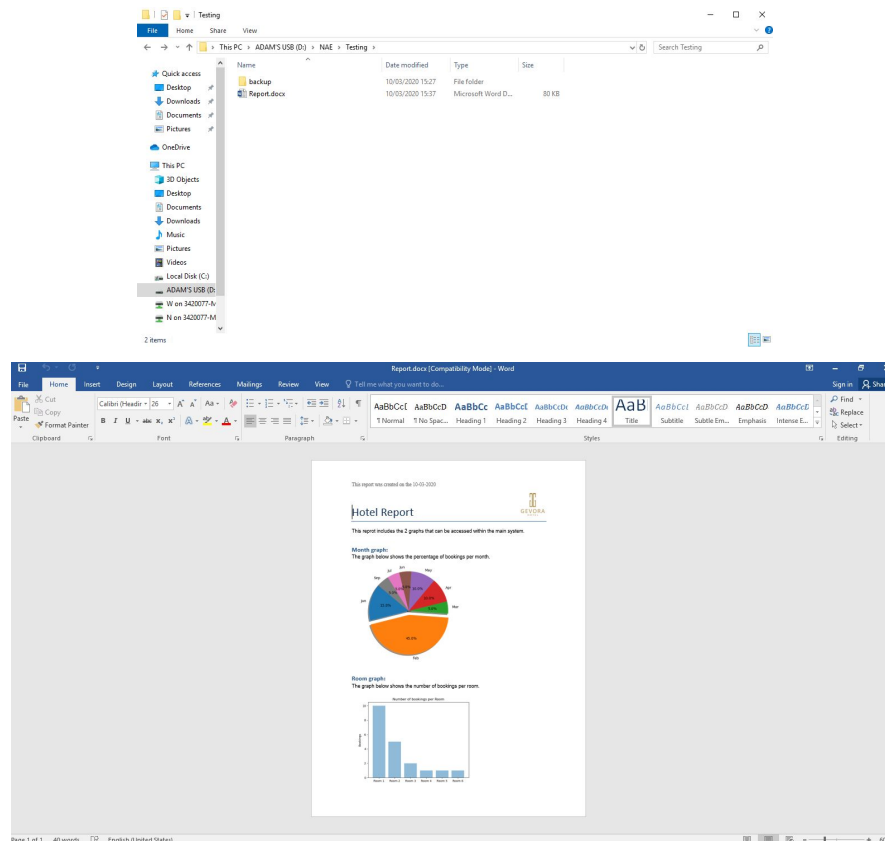
Report



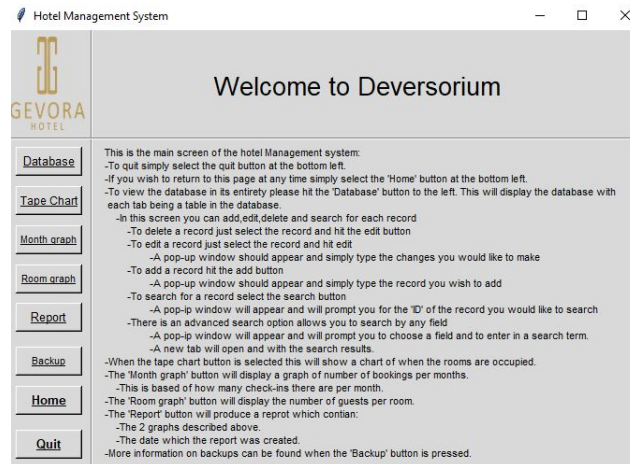
'Report' button is clicked



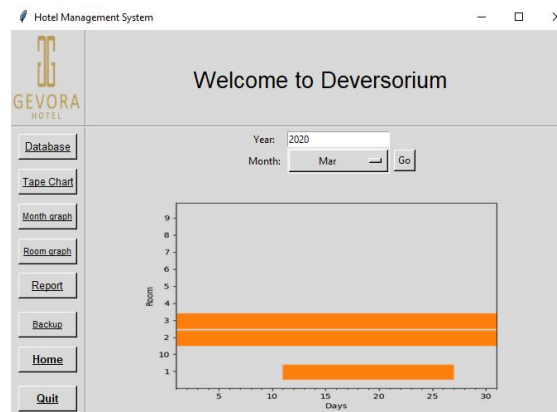
'Save' button is selected



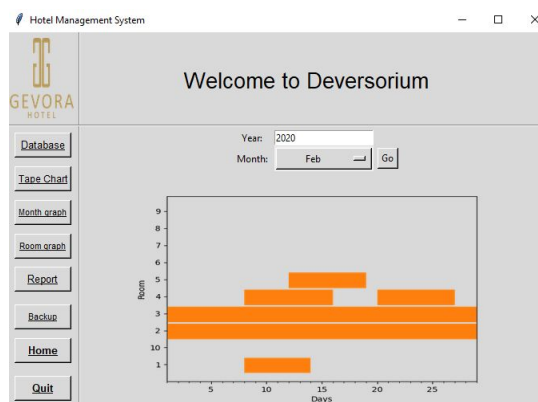
Tape Chart



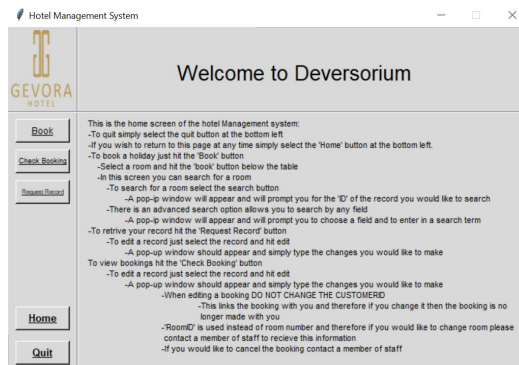
The 'Tape chart' button is clicked



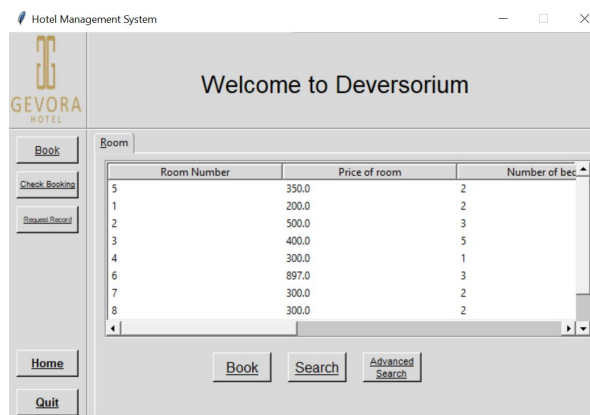
The drop-down menu is clicked and 'Feb' is selected. Then the 'Go' button is clicked



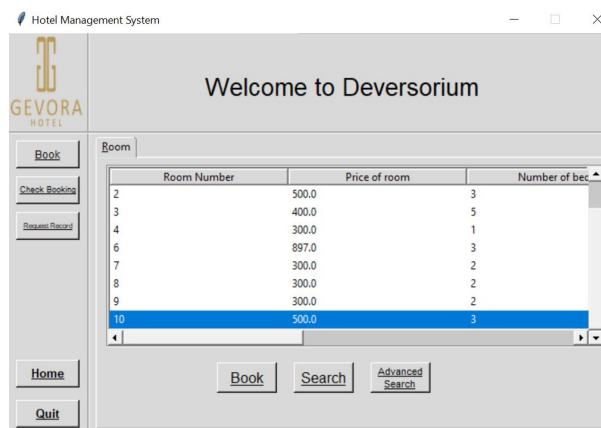
Customer Booking a Record



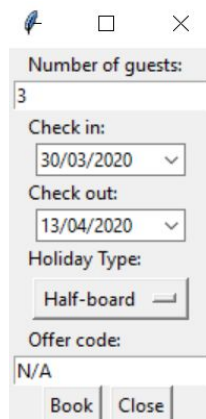
The 'book' button is selected.



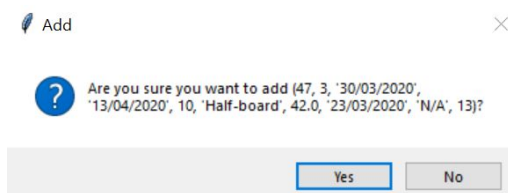
A room from the table is selected



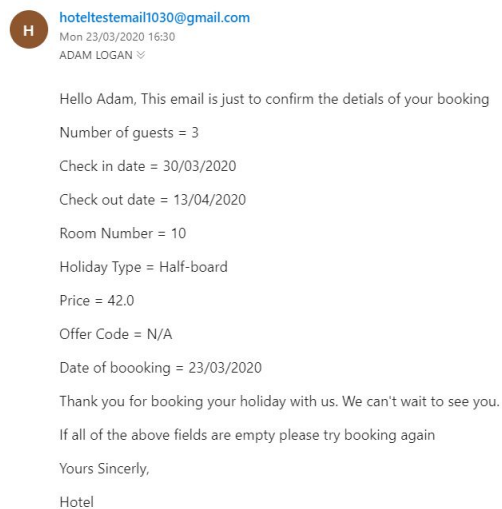
The 'book' button is pressed



The 'book' button within the pop-up window is pressed



The 'yes' button is selected and an email is sent to the user



H hoteltestemail1030@gmail.com
Mon 23/03/2020 16:30
ADAM LOGAN ✓

Hello Adam, This email is just to confirm the details of your booking

Number of guests = 3

Check in date = 30/03/2020

Check out date = 13/04/2020

Room Number = 10

Holiday Type = Half-board

Price = 42.0

Offer Code = N/A

Date of booking = 23/03/2020

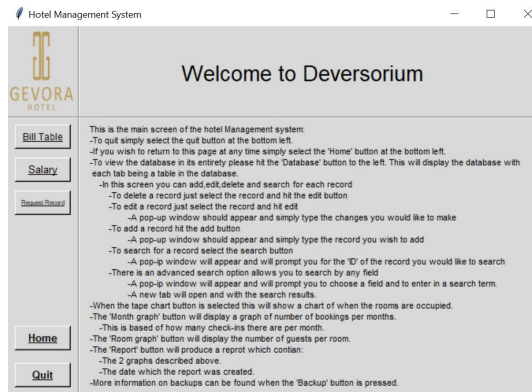
Thank you for booking your holiday with us. We can't wait to see you.

If all of the above fields are empty please try booking again

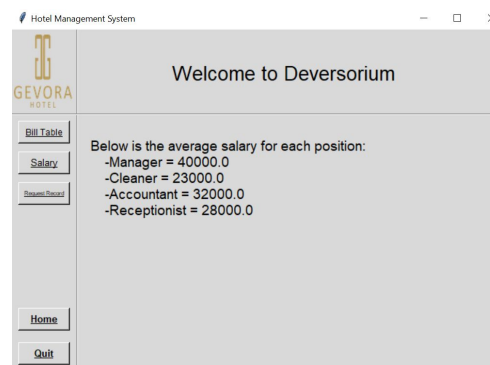
Yours Sincerely,

Hotel

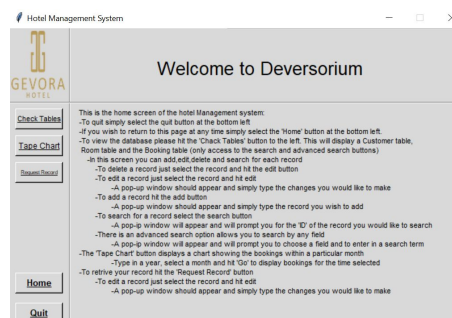
Average Salary



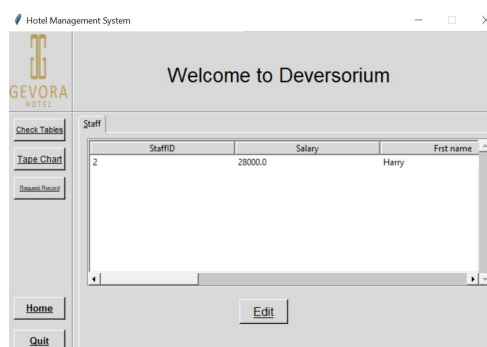
The 'Salary' button is selected



Request Record from Receptionist Screen



The 'Request Record' button is selected



References

- Kill a python script:
 - [How to stop/terminate a python script from running?](#)
- Disable resizing a window:
 - [How to make a Tkinter window not resizable?](#)
- Finding which tab is open:
 - [Finding the currently selected tab of Ttk Notebook](#)
- Emails:
 - [Send mail from your Gmail account using Python](#)
 - [How to send an email using python 3.6 smtp lib Send mail with attachment from your Gmail account using Python](#)
- Pickling:
 - [How could I save data after closing my program?](#)
- Notebook traversal:
 - [37. ttk.Notebook](#)
- Date entry widgets:
 - [Example — tkcalendar 1.5.0 documentation](#)
 - [tkcalendar Documentation](#)
- Regular expressions
 - [street address](#)
 - https://en.wikipedia.org/wiki/Postcodes_in_the_United_Kingdom#Validation
 - [Email Address Regular Expression That 99.99% Works.](#)
- Message widget:
 - https://www.python-course.eu/tkinter_message_widget.php
- Drop down menu:
 - [The Tkinter OptionMenu Widget](#)
 - [How do populate a Tkinter optionMenu with items in a list](#)
- Keyboard bindings:
 - [GUI Programming with Python: Events and Binds](#)
 - [Events and Bindings](#)
 - [Python | Binding function in Tkinter](#)
- Classes:
 - [Python Tutorial: Class vs. Instance Attributes](#)
 - [Getting the class name of an instance?](#)
- Report:
 - [WD_PARAGRAPH_ALIGNMENT](#)
 - [Set paragraph font in python-docx](#)

- [Changing Paragraph formatting in python-docx](#)
- https://www.youtube.com/watch?v=26vNgM_wSAE&list=PLB5jA40tNf3uCLarFvR0dS0kDwC-VU0Z9&index=8
- [Python PIL | Image.crop\(\) method](#)
- [How to crop an image using PIL?](#)
- <https://www.geeksforgeeks.org/python-asksaveasfile-function-in-tkinter/>
- **Postcode:**
 - <https://regex101.com/r/gB5hM1/1>
- **Date validation:**
 - <https://www.tutorialspoint.com/How-to-do-date-validation-in-Python>
- **How to insert a value into a tuple:**
 - <https://thispointer.com/python-tuple-append-insert-modify-delete-elements-in-tuple/>
- **How to remove a tuple of strings from a list:**
 - <https://www.geeksforgeeks.org/python-remove-all-strings-from-a-list-of-tuples/>
- **Gantt/Tape chart:**
 - https://subscription.packtpub.com/book/big_data_and_business_intelligence/9781849513265/3/ch03lvl1sec48/controlling-tick-spacing
 - <https://stackoverflow.com/questions/14720331/how-to-generate-random-colors-in-matplotlib>