**Design 2**

I have decided to add more forms and change parts of my code in order to make further developments of my project a lot easier and to avoid errors.

Changes:

1. I have decided to make the number of records added to the csv files limited due to limited storage and testing purposes.
2. I have also decided to add more variables in my Structures to provide more information to the customers and to make development easier. These changes will happen mostly in the module and include:

* Adding a surname to the customer database so that when it comes to searching for a customer, the user can search more specifically. I have also renamed the variable “name” to “Forename”.
* Adding the “make” of the car because the variable “name” is too general and does not provide enough information as the make of the vehicle is important information to the customers.
* Adding the “Fuel Type” of the vehicle is also important as customers will care about whether the car uses petrol or diesel and so when it comes to refueling the car, they know what type of fuel to use.
* I am also going to create a new Structure called Staff. This is to allow the staff working to have their own login and keep of track of their sales. The Staff Database will hold 6 Variables: ID, Forename, Surname, Username, Password and Authority Level.

1. I will also make the ID fully automated due to numerous amounts of detail that the staff have to enter. This will make user experience a lot easier as they will have to

think a lot less about the details they are entering.

1. I have also created a variable called “sep” which is a string that holds a comma, I have decided to create this variable in my module because it has been used in most of my buttons.
2. I have also created a Constant that holds the maximum number of records, instead of using different maximum number of records for each of my structures.

Due to these changes, the module will look like this:

Module Module1

Structure Customer

Dim ID As Integer

Dim Forename As String

Dim Surname As String

Dim Contact As String

Dim Address As String

End Structure

'Creates a Structure For customers

Structure Vehicle

Dim ID As Integer

Dim Name As String

Dim CostPerDay As Double

Dim Make As String

Dim FuelType As String

End Structure

'Creates a Structure For Cars

Structure Staff

Dim ID As Integer

Dim Forename As String

Dim Surname As String

Dim Username As String

Dim Password As String

Dim AuthorityLevel As String

End Structure

'Creates a Structure for Staff

Public Const MaxNumOfRecords As Integer = 9

Public sep As String = ","

Public CustomerDatabase(MaxNumOfRecords) As Customer

Public NumOfCustomers As Integer = 0

Public Customerfilename As String = "CustomerDatabase.csv"

'Setting the number of records that the database can hold

'Attaching the file name to a string to make it easier type up

Public VehicleDatabase(MaxNumOfRecords) As Vehicle

Public NumOfVehicles As Integer = 0

Public VehicleFilename As String = "VehicleDatabase.csv"

Public StaffDatabase(MaxNumOfRecords) As Staff

Public NumOfStaff As Integer = 0

Public StaffFilename As String = "StaffDatabase.csv"

End Module

I also created a top-down design with the new changes:



Changes to the success criteria will also be made due to the ID being automated and adding the two new variables to the Customer Structure.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number | What Testing | Input | Expected Result | Justification |
| 4 | Adding a record | **ID:** Depends on record number  **Forename**: Bilal  **Surname**: Habib  **Contact:** 07123456789  **Address:** 1 Baker Street  **Email:**  Bilal.habib67@gmail.com | The record (customer) gets added to the csv file | This is so that the business can keep track of customers and their purchases |
| 5 | Adding a record | **ID:** 0  **Forename**: Bilal  **Surname**: Habib  **Contact:**  **Address:** 1 Baker Street  **Email:**  Bilal.habib67@gmail.com | Due to a blank textbox, the record should not be added to the database and the user will get a message saying that a textbox is empty | This is to avoid errors and to make sure that every record gets imported from the csv file |
| 7 | Adding a record | **ID:** 0  **Forename**: Bilal  **Surname**: Habib  **Contact:**  071234  **Address:** 1 Baker Street  **Email:**  Bilal.habib67@gmail.com | The record should not be added due to the contact number not being 11 numbers long | This is to avoid situations in which the company would want to contact the customer and would fail in doing so due to missing information |
| 8 | Deleting a record | **ID:** 0 | The record in the csv file with ID number 0 should get removed from the file | This is to remove a customer who no longer wants their data to be in the business’s database |
| 10 | Searching for a record | **ID:** 0 | The data-grid-view should be cleared and only show records that have an ID of 0 (which should only be one record) | This gives the user the option to search for customers based on their ID |
| 11 | Searching for a record | **Forename**: Bilal | The data-grid-view should be cleared and only show records that have a Forename of Bilal | This gives the user the option to search for customers based on their forename |
| New test due to adding surname to the databases | Searching for a record | **Surname**: Habib | The data-grid-view should be cleared and only show records that have a Surname of Habib | This gives the user the option to search for customers based on their surname |
| 12 | Searching for a record | **Contact:** 07123456789 | The data-grid-view should be cleared and only show records that have a contact number of 07123456789 | This gives the user the option to search for customers based on their contact number |
| 13 | Searching for a record | **Address:** 1 Baker Street | The data-grid-view should be cleared and only show records that have an address of 1 Baker Street | This gives the user the option to search for customers based on their home address |
| New test because the variable “email” was added to the customer Structure | Searching for a record | **Email:**  Bilal.habib67@gmail.com | The data-grid-view should be cleared and only show records that have an email of bilal.habib67@  gmail.com | This gives the user the option to search for customers based on their email address |
| 14 | Searching for a record | **ID:** 0  **Forename**: Bilal  **Surname**: Habib  **Contact:** 07123456789  **Address:** 1 Baker Street  **Email:**  Bilal.habib67@gmail.com | The data-grid-view should be cleared and should only records that have:  **ID**: 0 OR  **Forename**: Bilal  OR  **Surname**: Habib  OR  **Contact**: 07123456789 OR  **Address**: 1 Baker Street  OR  **Email:**  Bilal.habib67@  gmail.com | This is to give the user the option to search for any of the customer’s details. Meaning they can search for a customer based on their ID, forename, surname, contact number or address or email address |
| 15 | Editing a record | **ID:** 0 | The program will delete the record with ID 0 in the database and add it back in with the textboxes values we’ve changed | This is to change a customer’s piece of information so that the business is up to date with the customers and does not have missing information |
| 16 | Refreshing the data-grid-view | **none** | The data-grid-view should be filled with records from the csv file | This is to be able to see the customers information and therefore make appropriate changes |
| 17 | Exit Button | **none** | The program should close the customer database form and open up the main menu | This is to ease navigation and avoid the user having to restart the program |

Test numbers 6 and 9 have been deleted because the ID Textbox is read-only meaning that the ID cannot be manually changed. This was done to avoid errors and recurring ID numbers. (Refer to the original Success criteria on page “”)

Some of the tests have been changed because I added the variable “surname” to the Customer Structure.