ICT373 Assignment 1 – Question 2

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Supplement Services – *A Java program that tracks newspaper supplements details for customers.*

Requirements/Specification

Description:

The program should keep track of the details relating to:

- Magazines
- Supplements
- Customers
- Paying customers
- Payment methods
- Cards
- Accounts

It should create the text for weekly and monthly emails respective to their paying status.

Paying customers should get a breakdown of their own supplements as well as the customers supplements that they are paying for.

Assumptions

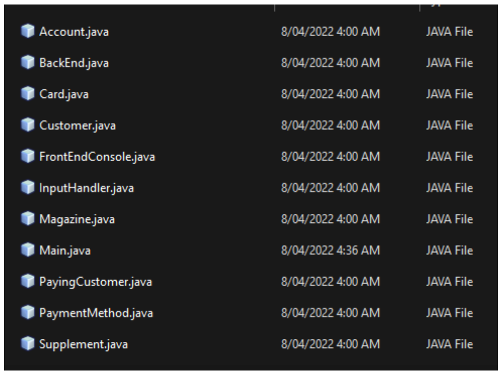
- The user knows how to use command lines.
- The user can input data.
- The user speaks English and is literate.
- If customers were to change their subscription midway through the month, then the monthly emails will be inaccurate.
- The customers cannot change their subscriptions mid-month
- Not expected to implement "time"
- It is assumed that supplements that the customer is interested in are the supplements they are subscribed to.
- Subscriptions are either valid or invalid for each whole month.
- Along the same vein I have also implemented a formula for working out the monthly cost.
- Up to date NetBeans*(8.2 or later)* has been installed on user's machine.

User Guide

How to compile/run:

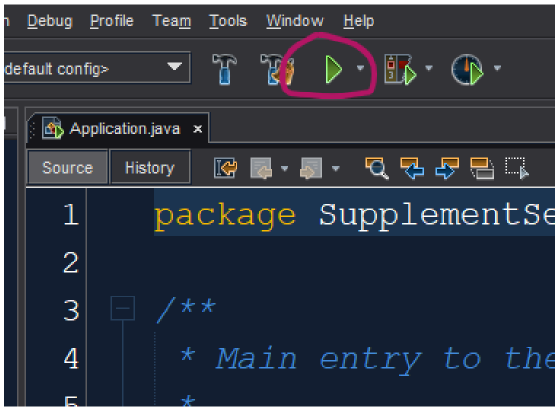
In the program directory navigate to src > SupplementServices

And double click on Main.java (below)



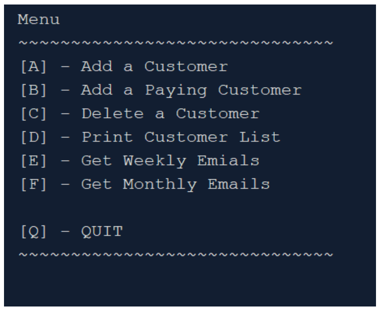
Account.java	8/04/2022 4:00 AM	JAVA File
BackEnd.java	8/04/2022 4:00 AM	JAVA File
Card.java	8/04/2022 4:00 AM	JAVA File
Customer.java	8/04/2022 4:00 AM	JAVA File
FrontEndConsole.java	8/04/2022 4:00 AM	JAVA File
InputHandler.java	8/04/2022 4:00 AM	JAVA File
Magazine.java	8/04/2022 4:00 AM	JAVA File
Main.java	8/04/2022 4:36 AM	JAVA File
PayingCustomer.java	8/04/2022 4:00 AM	JAVA File
PaymentMethod.java	8/04/2022 4:00 AM	JAVA File
Supplement.java	8/04/2022 4:00 AM	JAVA File

Once NetBeans has loaded and the Application tab is selected click the run button*(circled in red below).*



```
package SupplementSe

/**
 * Main entry to the
 *
```

How to use:

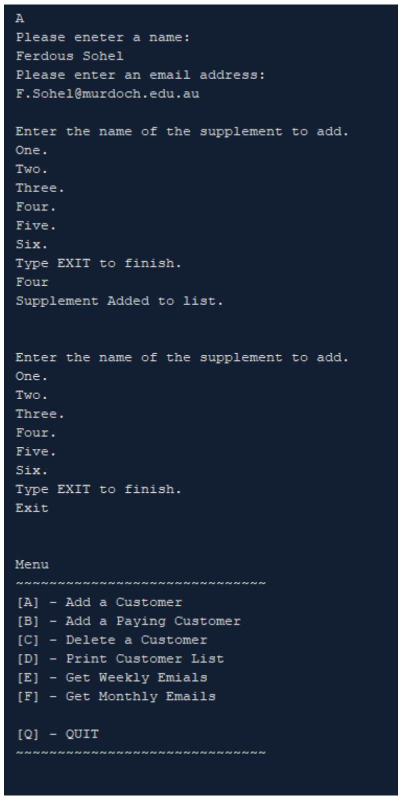


```
Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

In the console below the program should be printing a menu in the console.

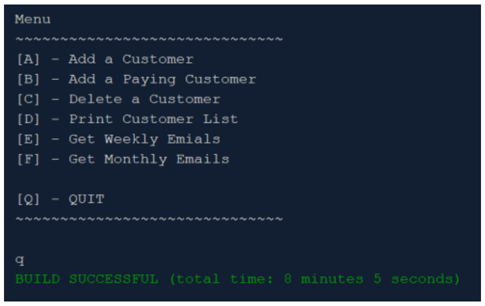
Entering a letter from A-F will choose a menu option, for example A will add a customer to the database.

Follow the prompts and enter data to build a database of customers or supplements, etc.



```
A
Please eneter a name:
Ferdous Sohel
Please enter an email address:
F.Sohel@murdoch.edu.au

Enter the name of the supplement to add.
One.
Two.
Three.
Four.
Five.
Six.
Type EXIT to finish.
Four
Supplement Added to list.


Enter the name of the supplement to add.
One.
Two.
Three.
Four.
Five.
Six.
Type EXIT to finish.
Exit


Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

Once you are finished with the program simply enter Q in the main menu to exit.(below)



```
Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

q
BUILD SUCCESSFUL (total time: 8 minutes 5 seconds)
```

Structure

Outline:

In the Main class there are 2 global variables, a FrontEndConsole and a BackEnd.

This can easily be modified to hold an array of BackEnds and FrontEnds for multiple applications.

Not doing this will mean that user input handling will be mixed up in the same class that holds the information.

This seems messy, confusing, and not scalable.

There is a customer class and a Paying Customer class that inherits from customer.

I utilize polymorphism in building the email strings.

Similarly, a Parent class PaymentMethod and child classes for Cards and Accounts.

A magazine class will hold a list of Supplement objects.

I tried to think about the problem in terms of object and implement a solution that groups like-classes into parent/child classes.

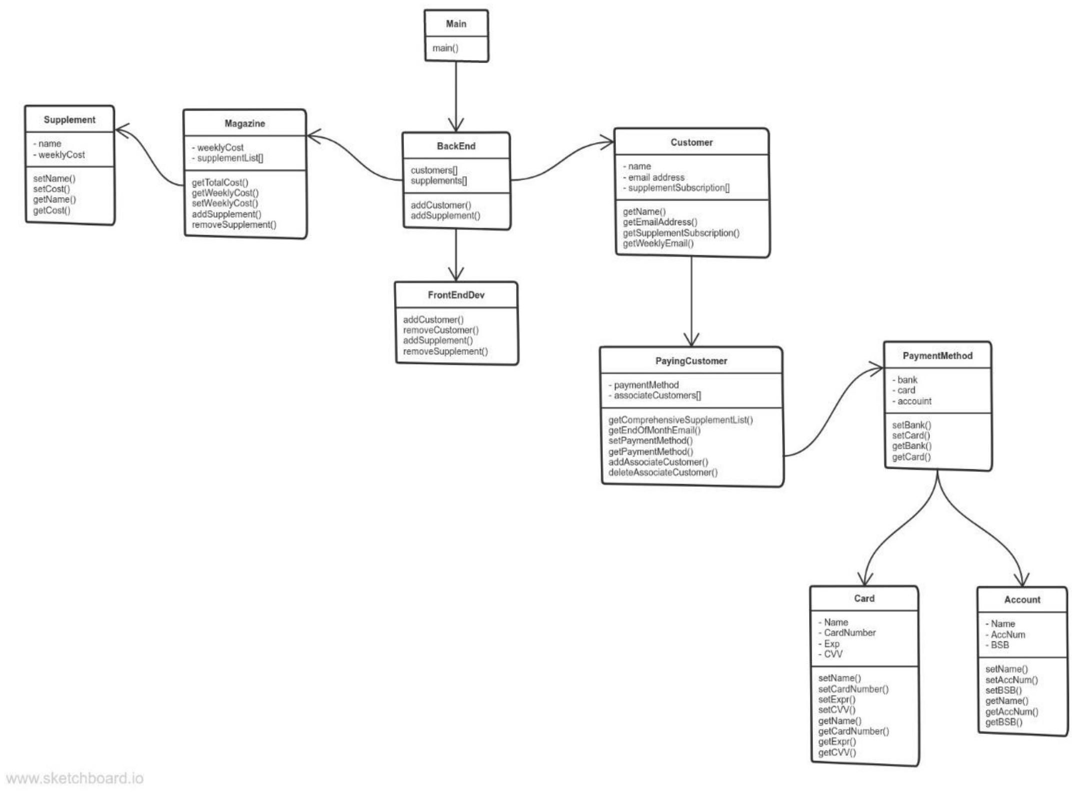
Other classes that would have been nice to implement but were not in my MVP were Classes that delt with formatting, i.e., an ExpiryDate class to handle the formatting of dates (getters and setters for day, month, year, String builders for returning that data in a particular format etc.).

Limitations:

This program has no way of stopping excessive memory allocation.

This could be easily fixed by limiting the list's size.

Structure Chart:



Testing

Strategy:

My strategy is to build a database automatically of customers, paying customers, supplements etc,.

Once there is already a database, I will then go through each menu option and test the functionality further.

I want to add incorrect values and see how the program handles it.

I want to add correct values and see that everything works as expected.

Test Cases:

TestID	Description	Data	Expected Output	Result	Pass/Fail
1	Test case conversion works	a	"Please eneter a name:	"Please eneter a name:	Pass
2	Test that menu redisplays when inopout is incorrect	k	menu	menu	Pass
3	See if program handles symbol input	#	"Invalid input. Enter Y or N. Do you want to enter another customer? (Y or N)"	"Invalid input. Enter Y or N. Do you want to enter another customer? (Y or N)"	Pass
4	Add a customer Input customer data Exit Print customer list	a Callum Peel Callum.epeel@gmail.com Supplement = Three D	Callum Peel printed in customer list	Callum Peel printed in customer list N)"	Pass
5	Add a Paying Customer and print names of customers	B Boris B@gmail.com Two Exit West Bank 1234 1234 1234 1234 12/03/2023 123 Tim Phil Exit F	Boris added to customer list	Boris added to customer list	Pass
6	Add a Paying Customer then get monthly emails	B Boris B@gmail.com Two Exit West Bank 1234 1234 1234 1234 12/03/2023 123 Tim Phil	Monthly email: Boris: Supplement 2 Tim's and Phil's supplement breakdown	Monthly email: Boris: Supplement 2 Tim's and Phil's supplement breakdown	Pass

		Exit F			
7	Delete a customer with correct name	D C Dom D	Name removed from the list	Name removed from the list	Pass
8	Delete a customer with correct name	D C Hans D	Customer not found	Customer not found	Pass
9	Delete a customer with case insensitive name pass for a name	D C dom D	“Please enter something. Please enter the name of the person:”	“Please enter something. Please enter the name of the person:”	Pass
10	Check for new line entry on main menu	\n	Redisplay menu	Redisplay menu	Pass
11	Number entry when char is expected in main menu	1	Menu redisplayed	Menu redisplayed	Pass*
12	Check for new line entry on change input	\n	“Incorrect input, please try again... Please enter the coin value for the person:”	“Incorrect input, please try again... Please enter the coin value for the person:”	Pass

Test Data:

Supplements:
One, 2.4
Two, 6.3
Three, 7
Four, 8
Five, 11
Six, 3.4

Regular customers:
“Callum", "callum@gmail.com", supplementList1
“Maddie", "Maddie@gmail.com", supplementList2

"Dom", "Dom@gmail.com", supplementList3
“Tim", "Tim@gmail.com", supplementList4
“Sally", "Sally@gmail.com", supplementList2
“Fin", "Fin@gmail.com", supplementList4

Customer Lists for Paying Customers:
customerList1 = Callum, Maddie, Dom
customerList2 = Callum, Dom, Tim
customerList3 = Dom, Tim, Sally
customerList4 = Sally, Fin, Matthew

Paying Customers:
"Matthew", "Matthew@gmail.com", supplementList1
new PaymentMethod("", new Card("Matthew", "1234 1234 1234 1234", "12/24", 232)), customerList1)

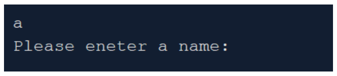
"Steven", "Steven@gmail.com", supplementList2),
new PaymentMethod("", new Card("Steven", "1234 4444 1234 2222", "10/24", 513)), customerList2)

Mark", "Mark@gmail.com", supplementList3),
new PaymentMethod("", new Card("Steven", "6666 4444 3333 2222", "11/25", 765)), customerList3)

"Phil", "Phil@gmail.com", supplementList4),
new PaymentMethod("", new Card("Phil", "3233 1313 1111 4344", "12/23", 748)), customerList3)

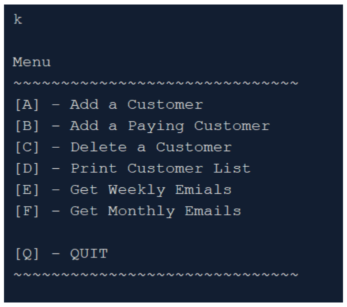
Testing Output:

1



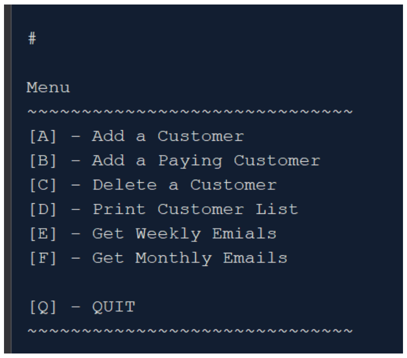
```
a
Please eneter a name:
```

2



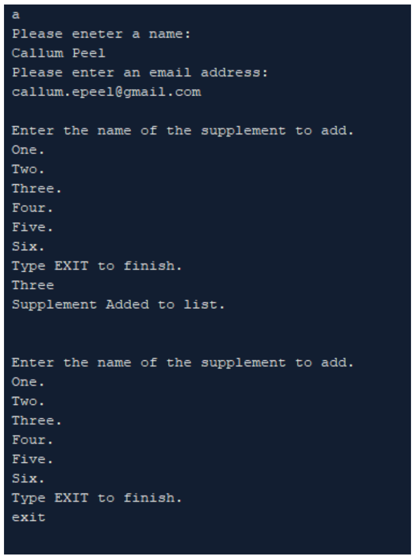
```
k

Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

3

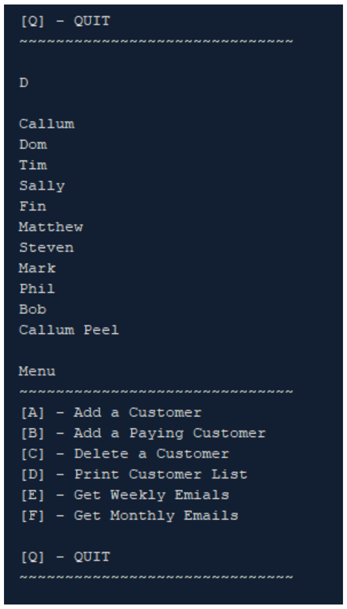


```
#

Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

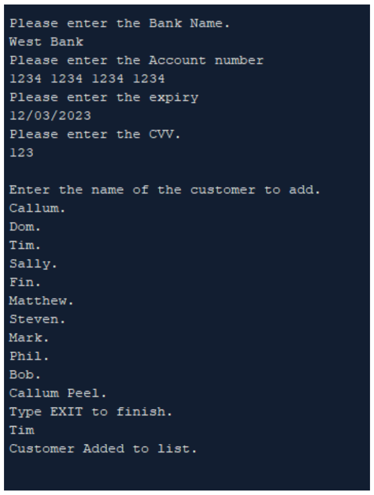
4.

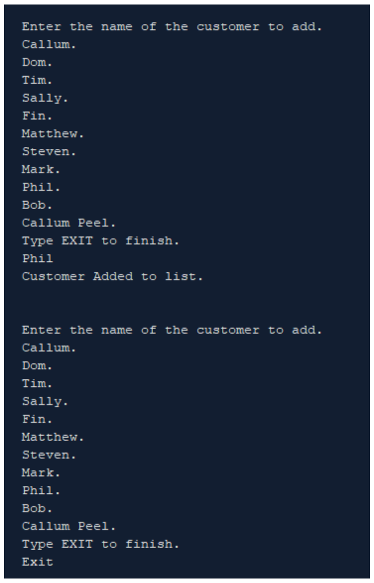


```
a
Please eneter a name:
Callum Peel
Please enter an email address:
callum.epeel@gmail.com

Enter the name of the supplement to add.
One.
Two.
Three.
Four.
Five.
Six.
Type EXIT to finish.
Three
Supplement Added to list.


Enter the name of the supplement to add.
One.
Two.
Three.
Four.
Five.
Six.
Type EXIT to finish.
exit
```

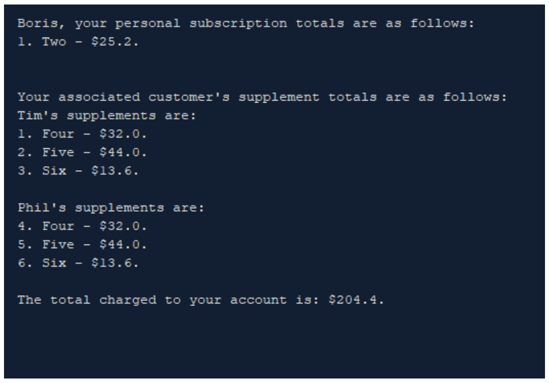

```
[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

D

Callum
Dom
Tim
Sally
Fin
Matthew
Steven
Mark
Phil
Bob
Callum Peel

Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

5.


```
Please enter the Bank Name.
West Bank
Please enter the Account number
1234 1234 1234 1234
Please enter the expiry
12/03/2023
Please enter the CVV.
123

Enter the name of the customer to add.
Callum.
Dom.
Tim.
Sally.
Fin.
Matthew.
Steven.
Mark.
Phil.
Bob.
Callum Peel.
Type EXIT to finish.
Tim
Customer Added to list.
```

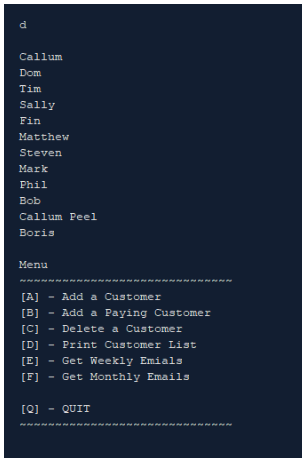


```
Enter the name of the customer to add.
Callum.
Dom.
Tim.
Sally.
Fin.
Matthew.
Steven.
Mark.
Phil.
Bob.
Callum Peel.
Type EXIT to finish.
Phil
Customer Added to list.


Enter the name of the customer to add.
Callum.
Dom.
Tim.
Sally.
Fin.
Matthew.
Steven.
Mark.
Phil.
Bob.
Callum Peel.
Type EXIT to finish.
Exit
```



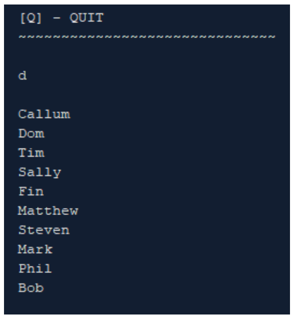
```
Boris, your personal subscription totals are as follows:
1. Two - $25.2.


Your associated customer's supplement totals are as follows:
Tim's supplements are:
1. Four - $32.0.
2. Five - $44.0.
3. Six - $13.6.

Phil's supplements are:
4. Four - $32.0.
5. Five - $44.0.
6. Six - $13.6.

The total charged to your account is: $204.4.
```

6.

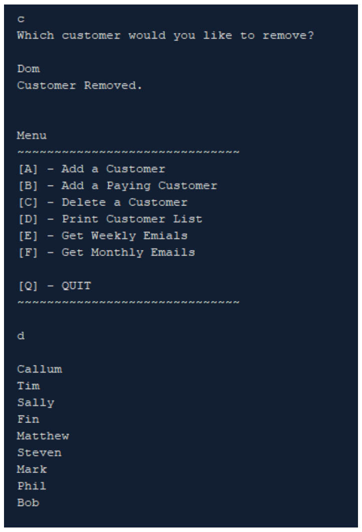


```
d

Callum
Dom
Tim
Sally
Fin
Matthew
Steven
Mark
Phil
Bob
Callum Peel
Boris

Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

7.



```
[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

d

Callum
Dom
Tim
Sally
Fin
Matthew
Steven
Mark
Phil
Bob
```



```
c
Which customer would you like to remove?

Dom
Customer Removed.


Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
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[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

d

Callum
Tim
Sally
Fin
Matthew
Steven
Mark
Phil
Bob
```
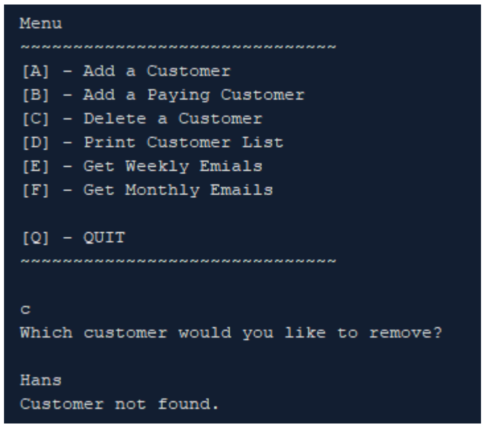

8.



```
Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
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[D] - Print Customer List
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[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

c
Which customer would you like to remove?

Hans
Customer not found.
```
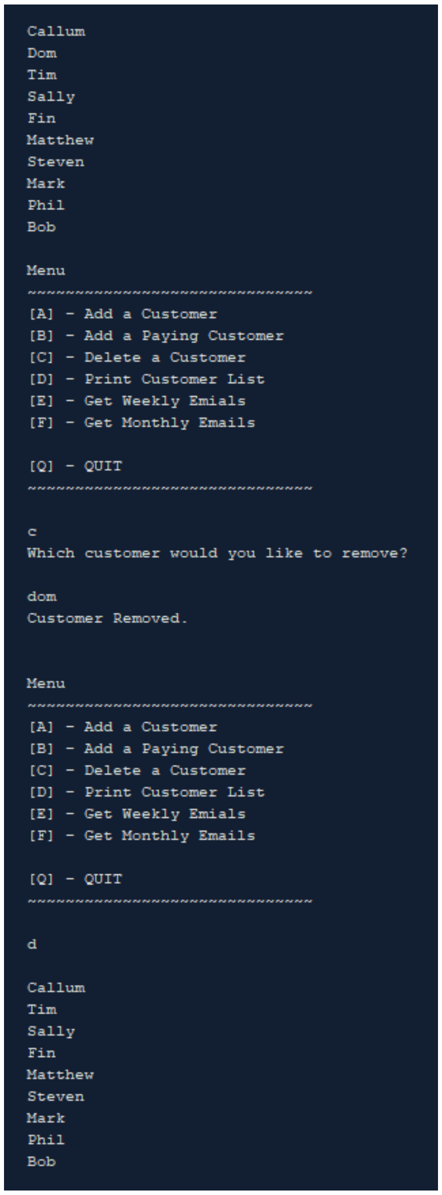
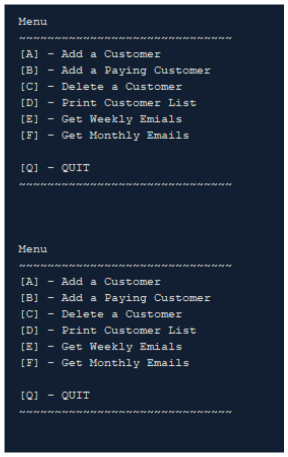

9.



```
Callum
Dom
Tim
Sally
Fin
Matthew
Steven
Mark
Phil
Bob

Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

c
Which customer would you like to remove?

dom
Customer Removed.


Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

d

Callum
Tim
Sally
Fin
Matthew
Steven
Mark
Phil
Bob
```

10.



```
Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~



Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
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[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```
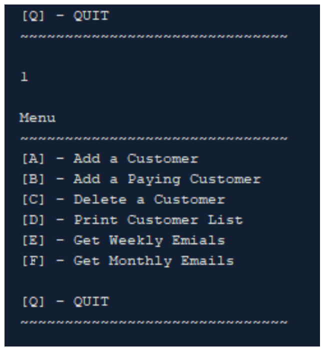

11.



```
[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1

Menu
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
[A] - Add a Customer
[B] - Add a Paying Customer
[C] - Delete a Customer
[D] - Print Customer List
[E] - Get Weekly Emials
[F] - Get Monthly Emails

[Q] - QUIT
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```