TUNKU ABDUL RAHMAN UNIVERSITY OF MANAGEMENT AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

BACS1013 Problem Solving and Programming

Assignment

202405

Program : RDS1S1

Tutorial Group : GROUP 2

Application/System Name : Luxury Beauty Bar Application

Name (Block Capital)	**Registration No.**	**Signature**	**Marks** (For Tutor use)
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Tutor's Name : MS SAFINAZ BINTI MUSTAPHA

Date of Submission : 22/9/2024

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TUNKU ABDUL RAHMAN UNIVERSITY OF
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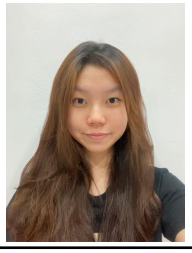
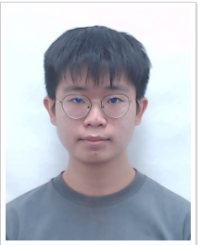
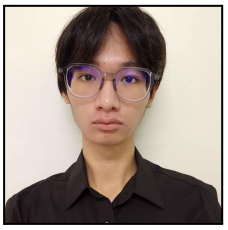
FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

Declaration of Originality

We confirm that we have read and shall comply with all the terms and conditions of TAR University of Management and Technology plagiarism policy.

We declare that this assignment is free from all forms of plagiarism and for all intents and purposes is our own properly derived work.

Name :	THO HUI YEE	LIM FENG ZHI	NG CHIAO HAN	THAM ZHEN HERN
Photo :				
Signature :				

Tutorial Group : RDS1S1G2

Date : 22/9/2024

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Task Distribution

Team members contribution in Assignment

No.	Team Member	Task(s) Completed	Overall Contribution (%)
1.	THO HUI YEE	- Flowchart - Coding about us - Testing and Output	25
2.	LIM FENG ZHI	- Structure chart - Coding Booking system, admin, expert, sorting, linear search, generate sales report, file system, view customer details, view expert schedules, overall schedule, refund payment system, design - Additional Functionalities - Testing and Output Additional Run 1 and 2	25
3.	NG CHIAO HAN	- Flowchart - Coding Payment system - Testing and output	25
4.	THAM ZHEN HERN	- Introduction - Codding customer login and register - Testing and Output	25

Introduction

Brief Description / Purpose

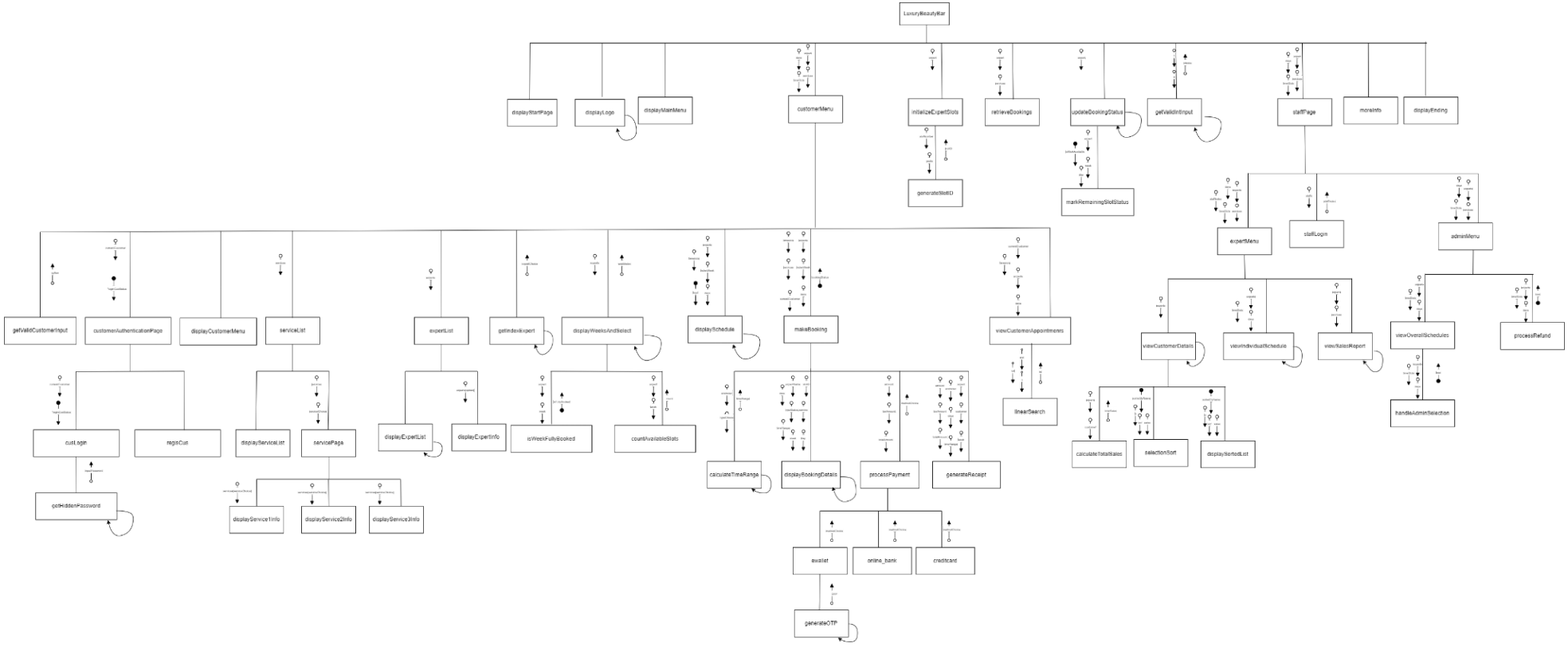
Our team is excited with the opportunity to develop a beauty service booking application for Luxury Beauty Bar. This application will elevate the experience for both the customers and the staff at Luxury Beauty Bar. The primary purpose of this application is to streamline the booking process for Luxury Beauty Bar, this will provide an interface for both customers and staff to manage appointments, schedules and payments.

The application offers a user-friendly interface that allows customers to search and book beauty services with just a few clicks, this includes a menu that allows you to either login or register. With an account, customers would be able to view the list of experts available, customers then can easily compare their services and time slots to make informed decisions. After viewing the available time slots, customers can select a timeslot and book it. The application offers three secure payment methods for our customers such as E-Wallet, Online Banking and credit card. A receipt will then be generated for the customer after the payment has been successfully made.

Besides that, the staff at Luxury Beauty Bar can manage their appointments efficiently as their appointments are properly listed out and with features like real-time update, it will help optimise business operations and minimise no-shows. In the application, the staff can also login to their respective account and check their customers' details, their schedule, as well as generating their sales report. When viewing their customers' details , they can see the names and usernames of each customer and the total amount of spendings they paid for their services. An additional function added to help organise the view for the staff is that they are able to sort their customers' information by names and the sales amount. Inside their schedule page, they can view which slots are booked, not available and still available.

Overall Program Design

Structure Chart



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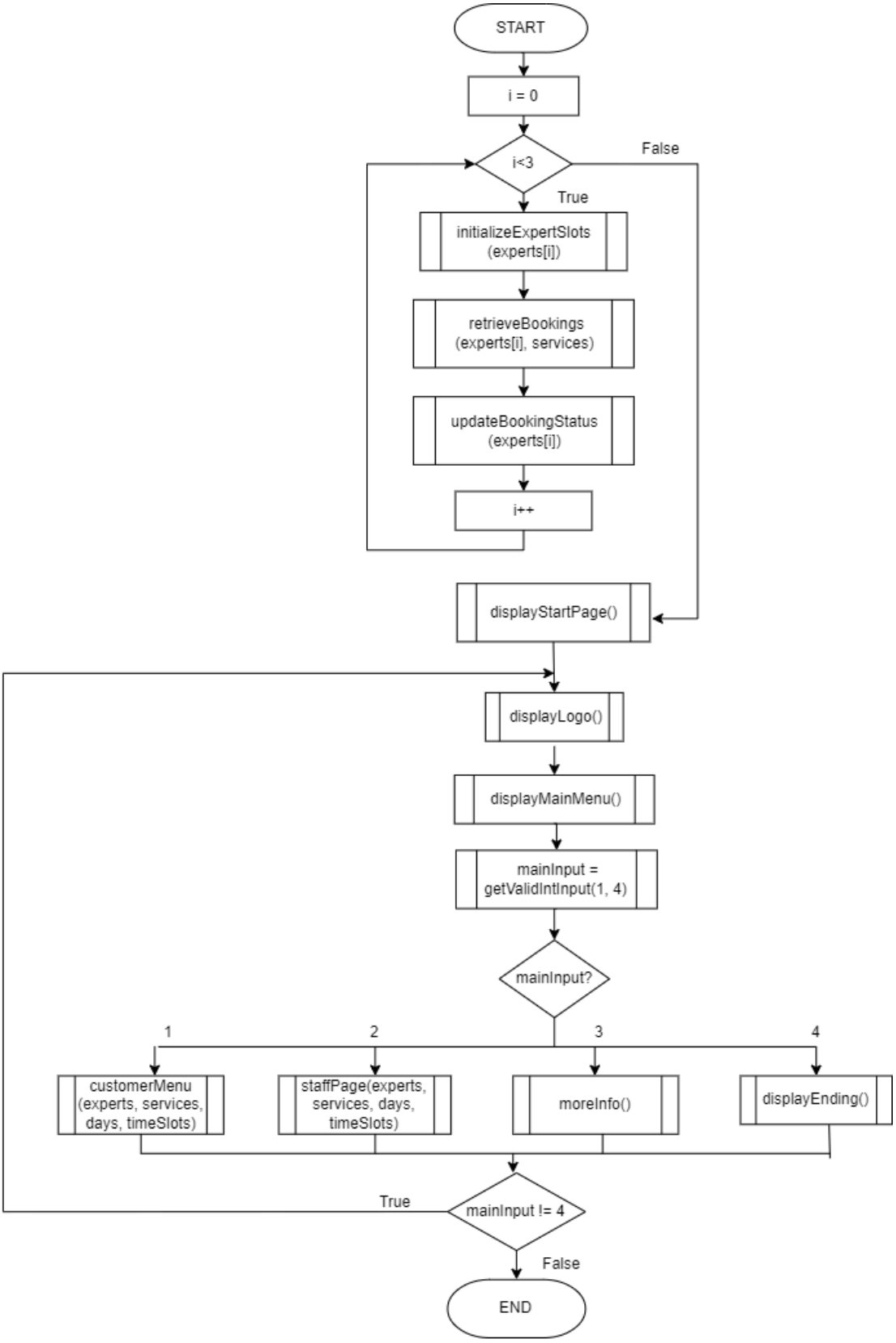
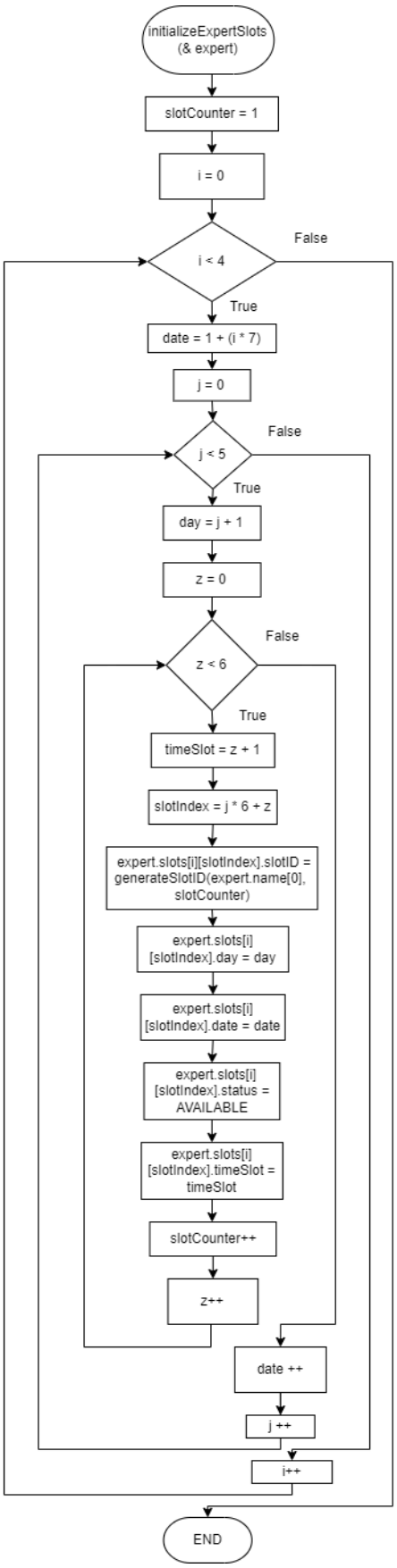
Flowcharts

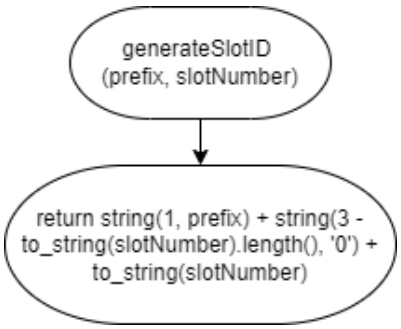
main



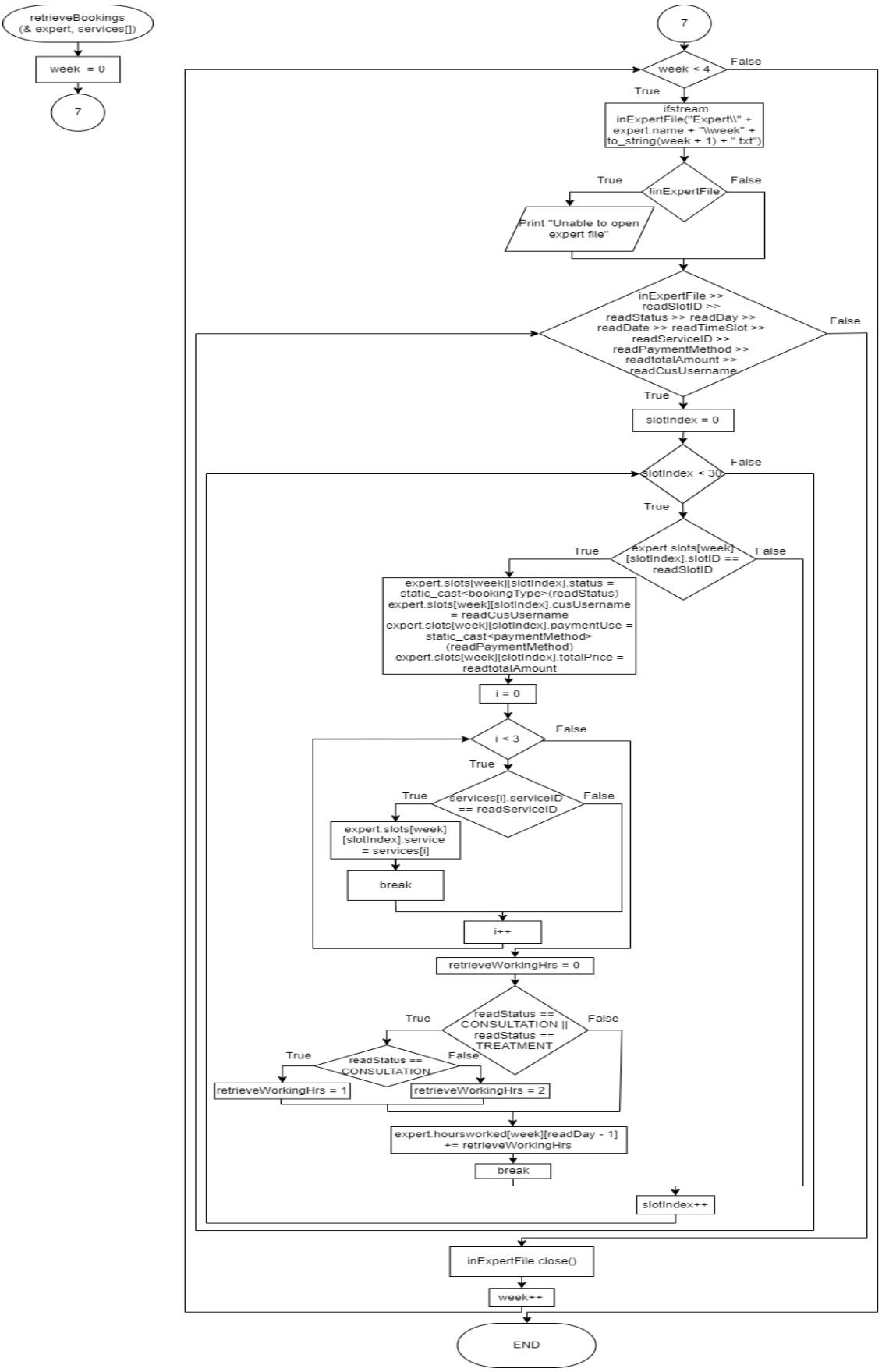
initializeExpertSlots



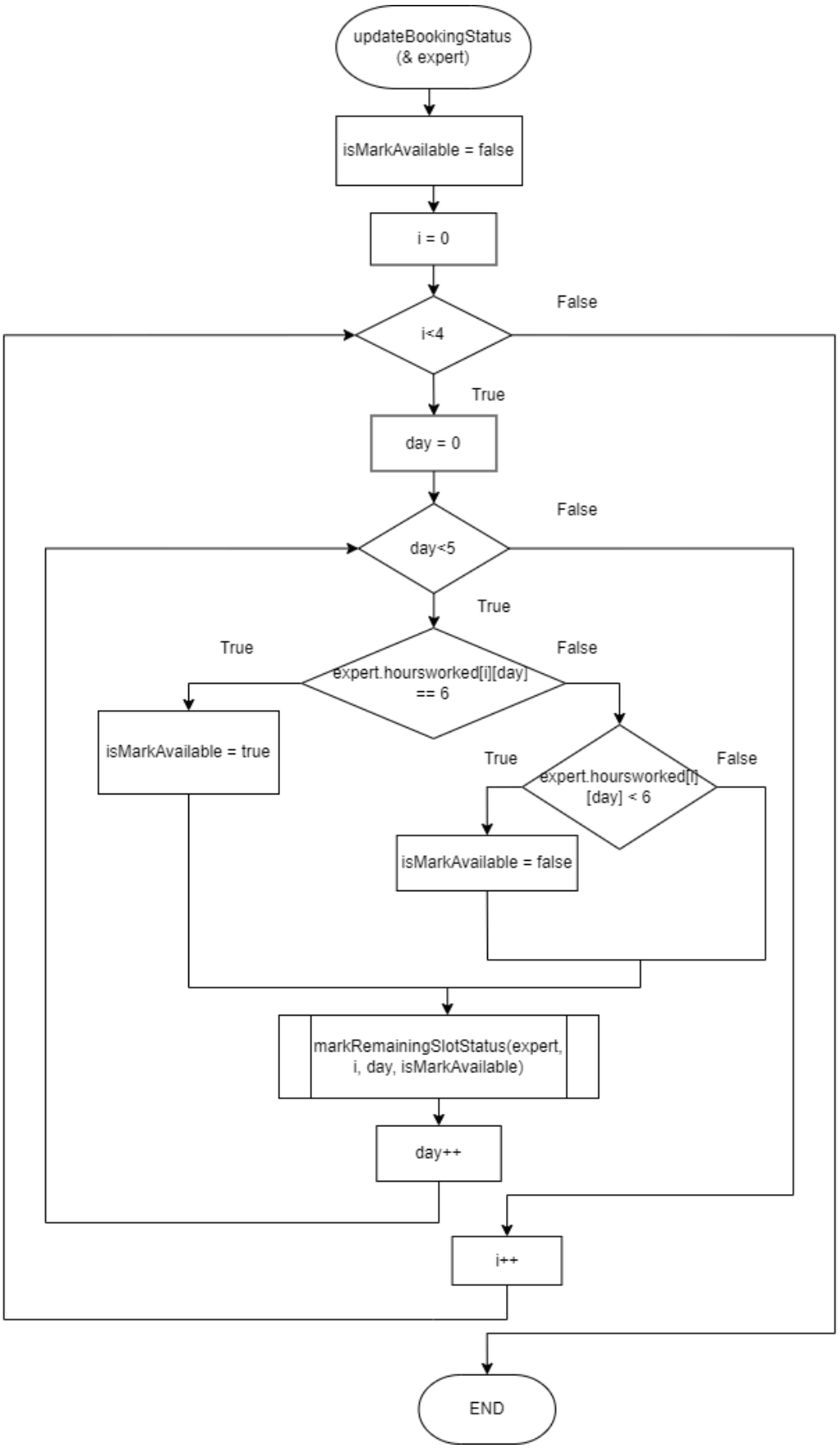
generateSlotID



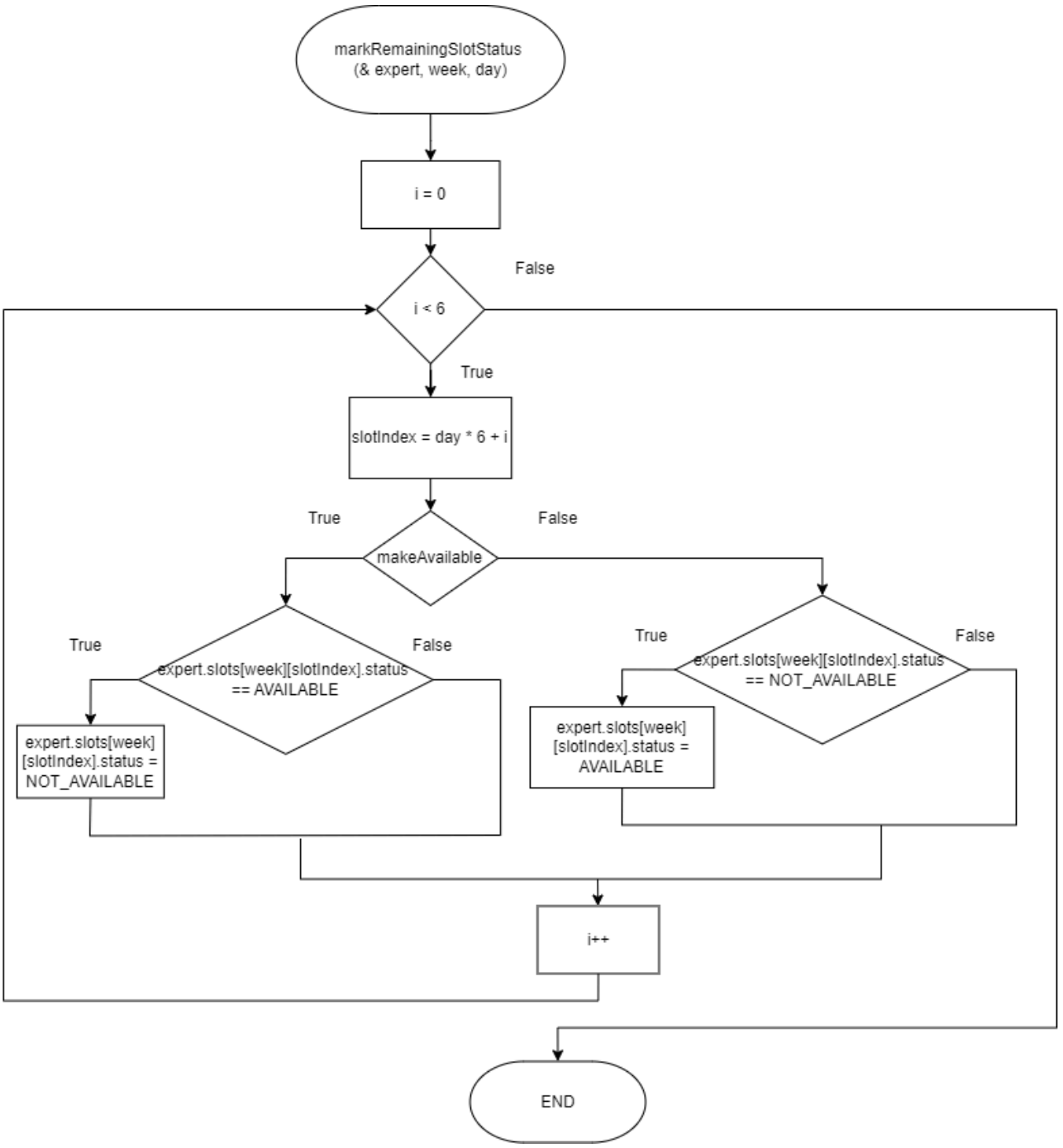
retrieveBookings



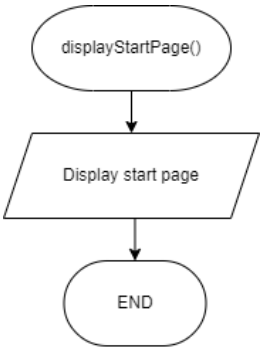
updateBookingStatus



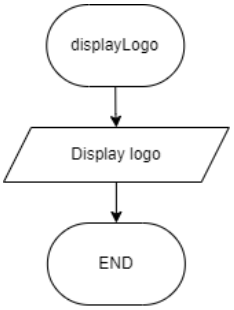
markRemainingSlotStatus



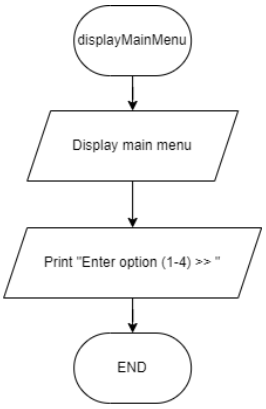
displayStartPage



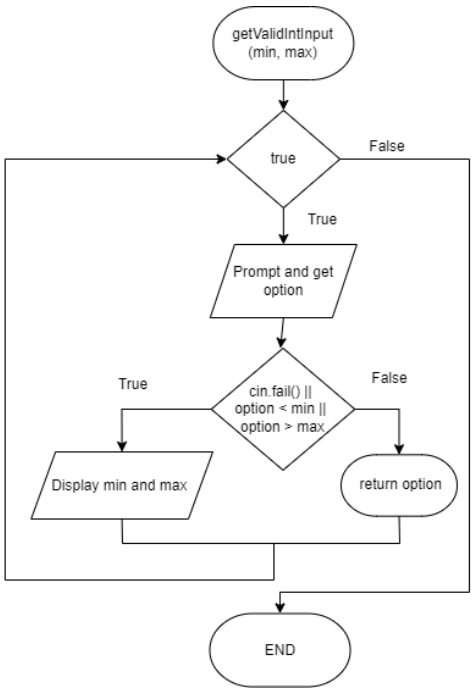
displayLogo



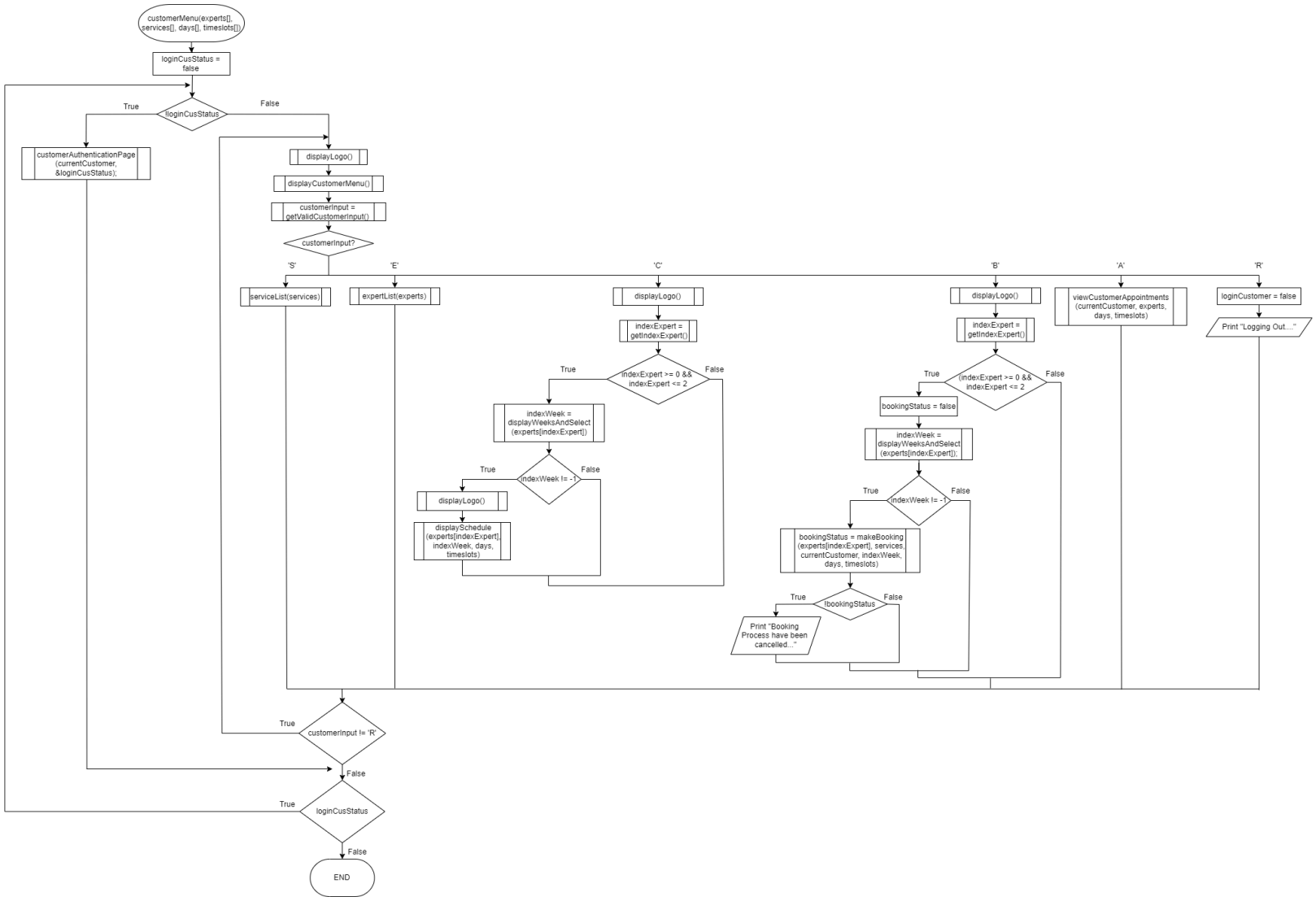
displayMainMenu



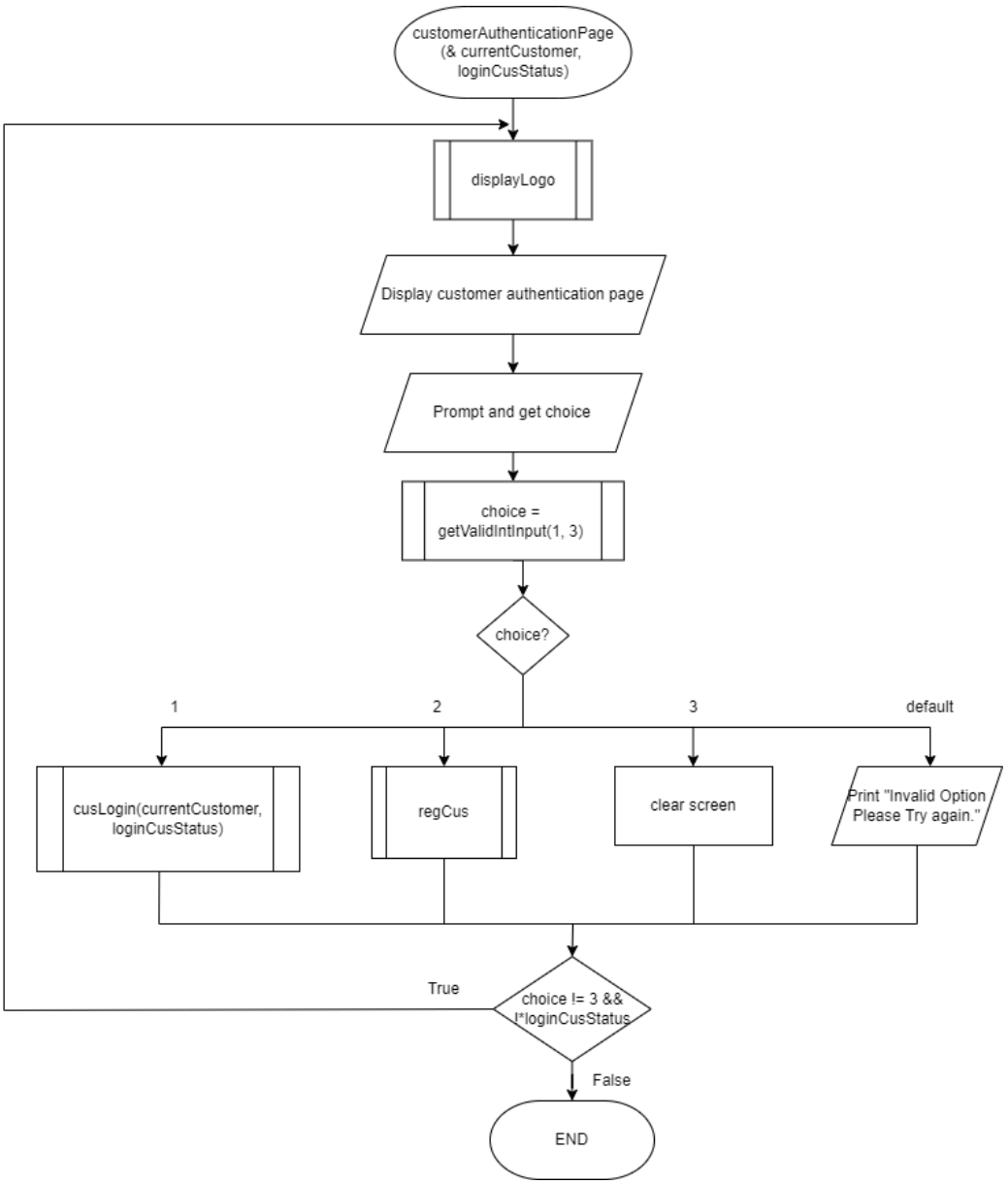
getValidIntInput



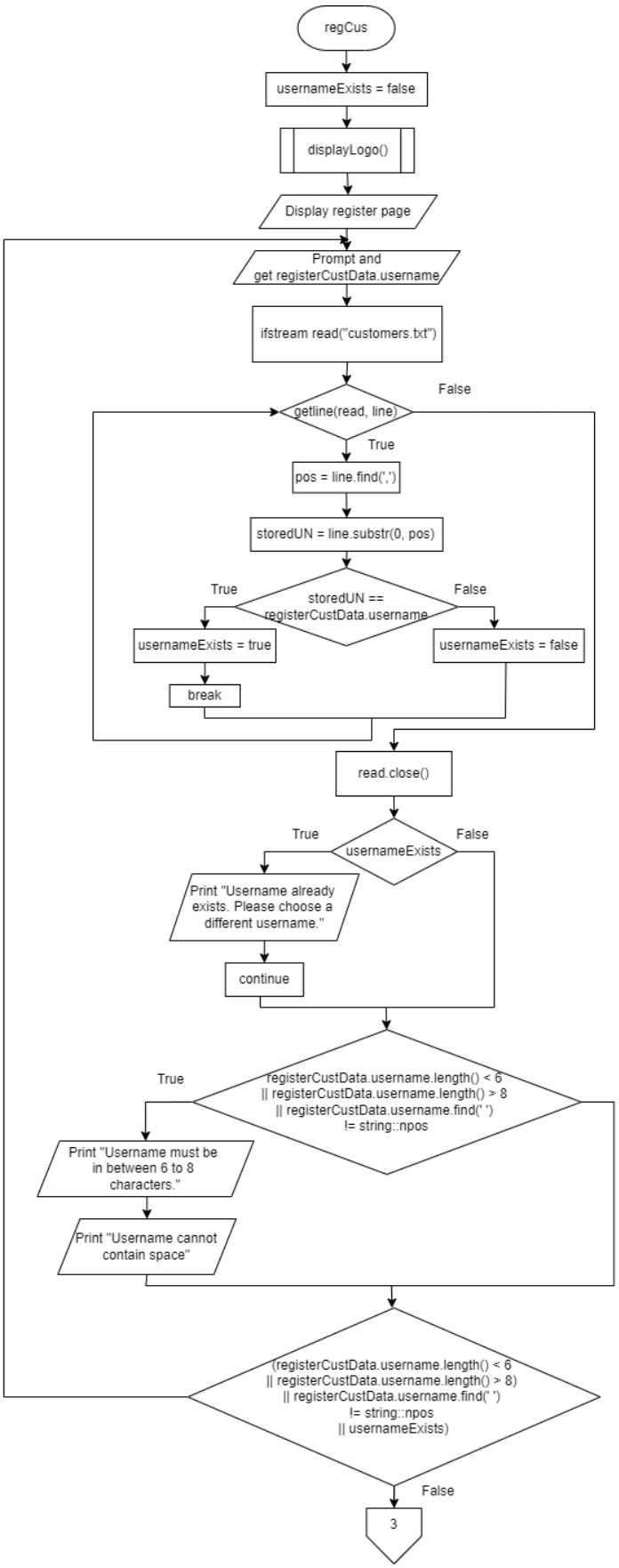
customerMenu

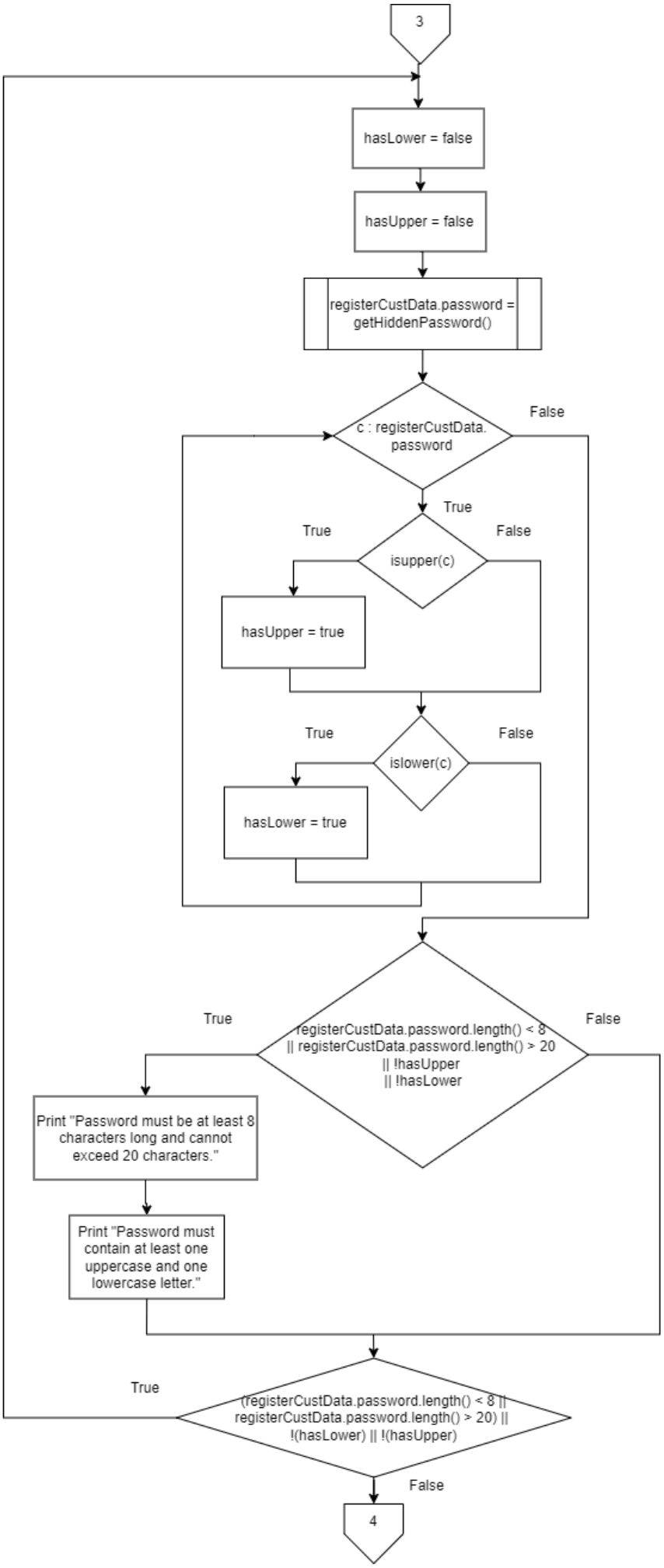


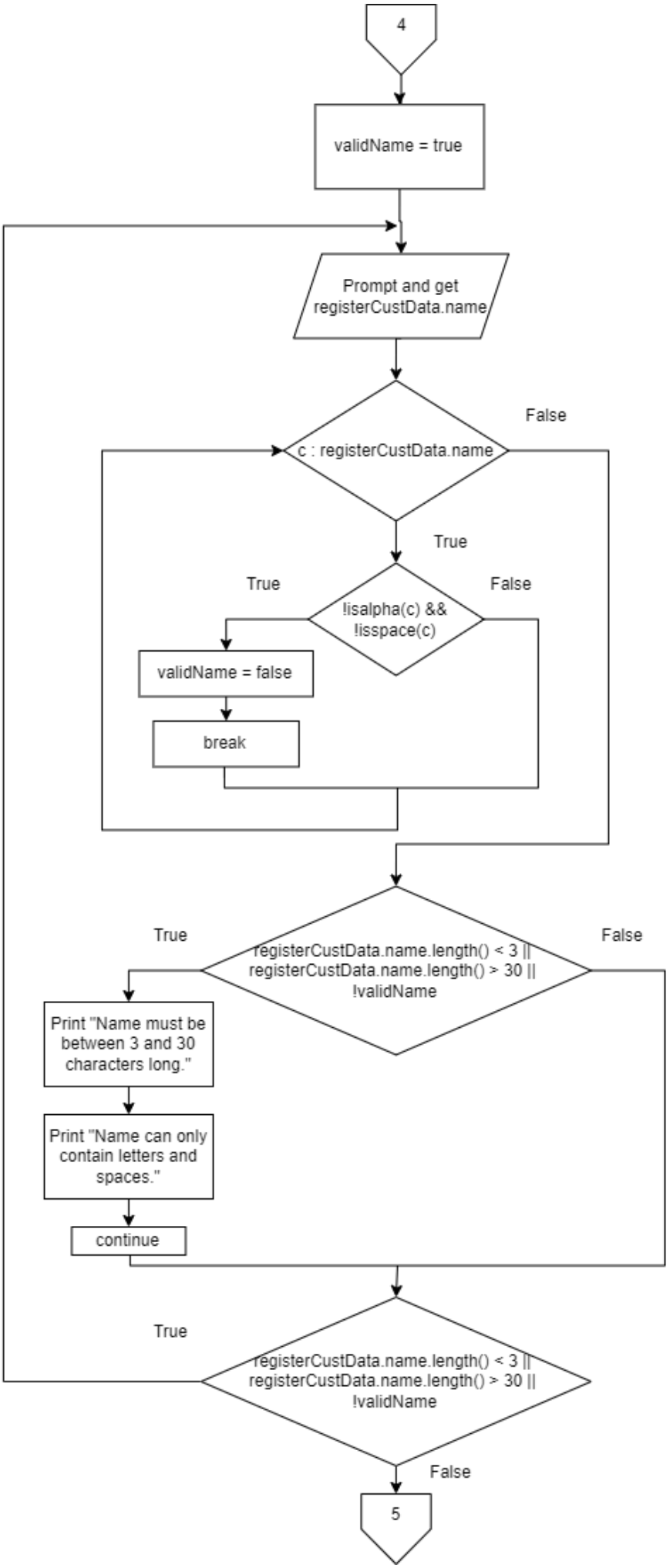
customerAuthenticationPage

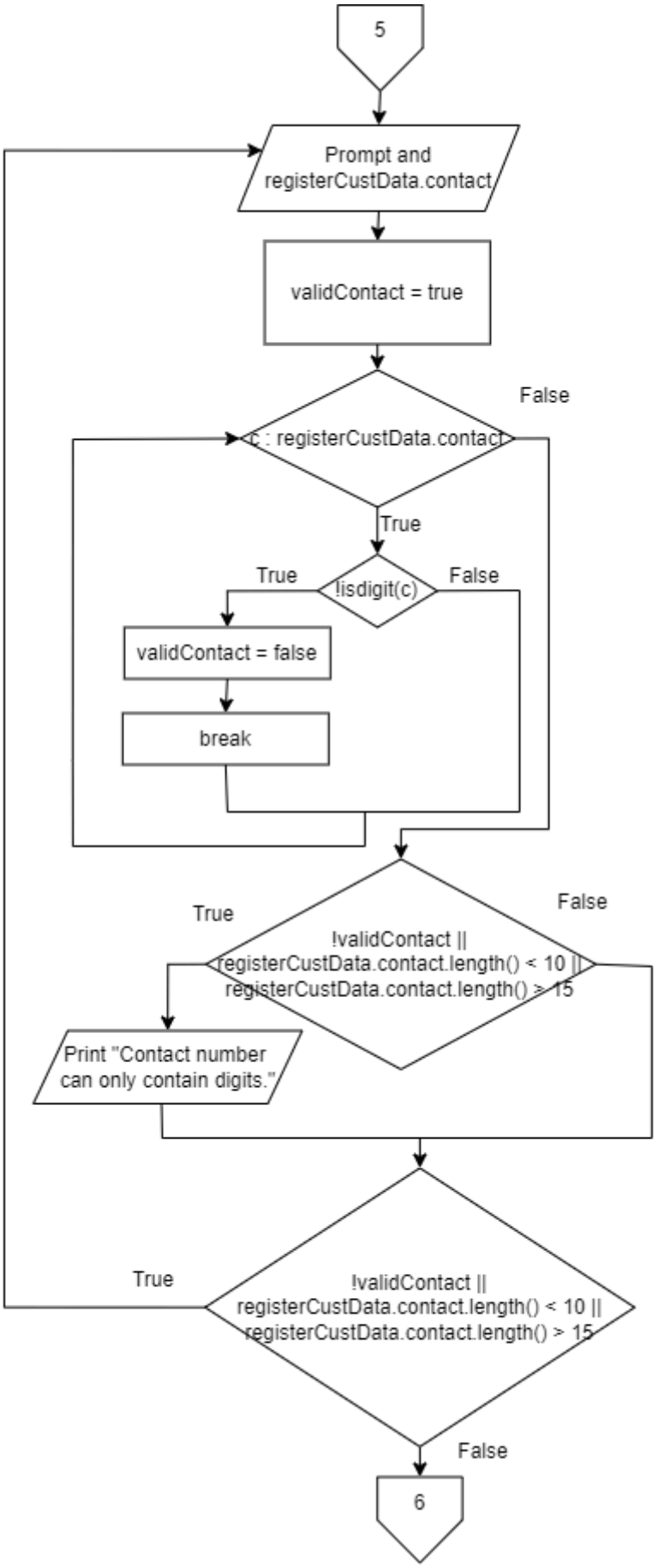


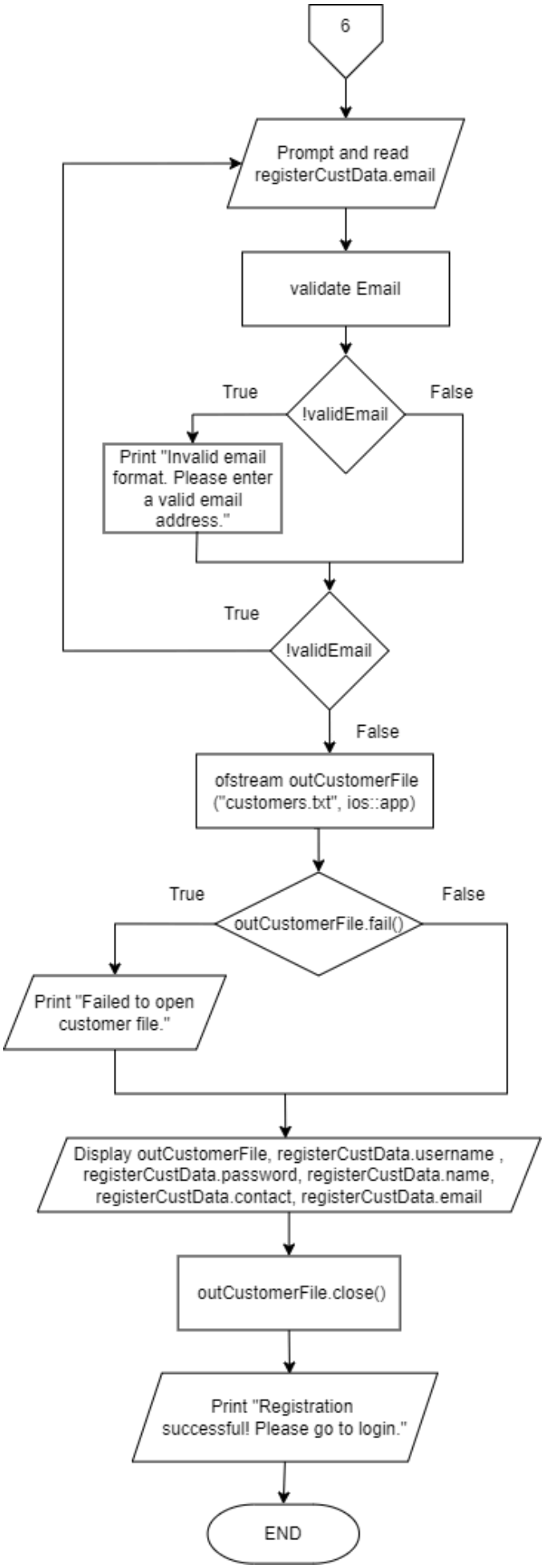
regCus


regCus
usernameExists = false
displayLogo()
Display register page
Prompt and get registerCustData.username
ifstream read("customers.txt")
getline(read, line)
False
True
pos = line.find(',')
storedUN = line.substr(0, pos)
storedUN == registerCustData.username
True
False
usernameExists = true
usernameExists = false
break
read.close()
usernameExists
True
False
Print "Username already exists. Please choose a different username."
continue
registerCustData.username.length() < 6 || registerCustData.username.length() > 8 || registerCustData.username.find(' ') != string::npos
True
Print "Username must be in between 6 to 8 characters."
Print "Username cannot contain space"
(registerCustData.username.length() < 6 || registerCustData.username.length() > 8) || registerCustData.username.find(' ') != string::npos || usernameExists)
False
3

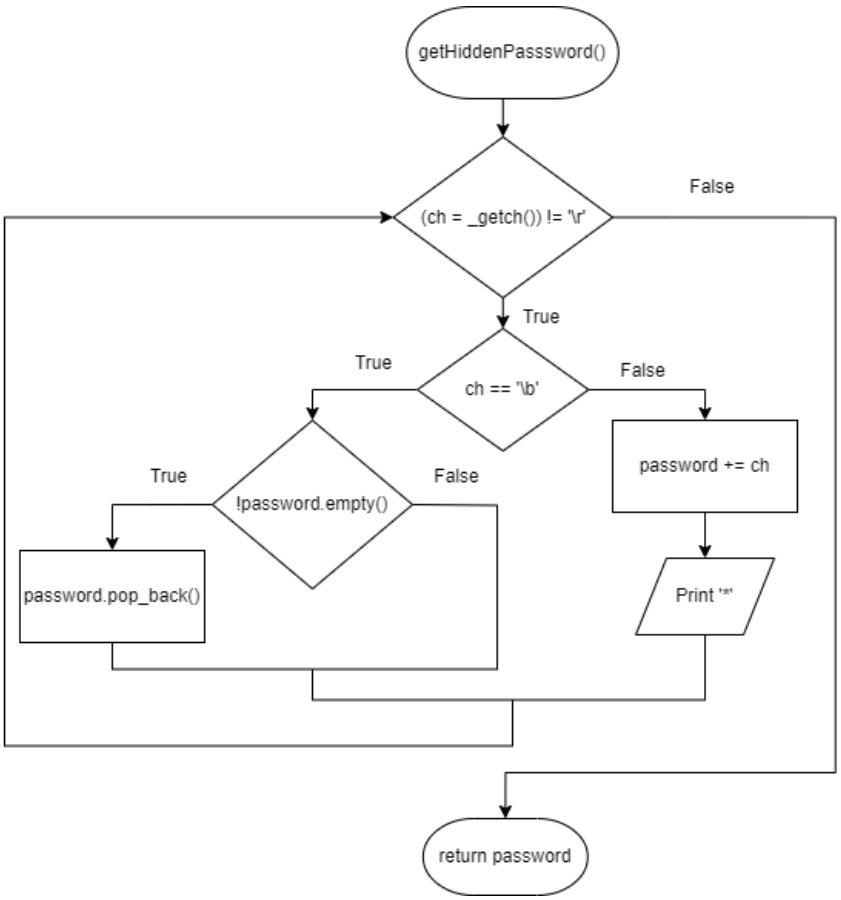

3
hasLower = false
hasUpper = false
registerCustData.password = getHiddenPassword()
c : registerCustData.password
False
True
True
False
isupper(c)
hasUpper = true
True
False
islower(c)
hasLower = true
True
False
registerCustData.password.length() < 8 || registerCustData.password.length() > 20 || !hasUpper || !hasLower
Print "Password must be at least 8 characters long and cannot exceed 20 characters."
Print "Password must contain at least one uppercase and one lowercase letter."
True
(registerCustData.password.length() < 8 || registerCustData.password.length() > 20) || !(hasLower) || !(hasUpper)
False
4


4
validName = true
Prompt and get registerCustData.name
c : registerCustData.name
False
True
!isalpha(c) && !isspace(c)
True
False
validName = false
break
registerCustData.name.length() < 3 || registerCustData.name.length() > 30 || !validName
True
False
Print "Name must be between 3 and 30 characters long."
Print "Name can only contain letters and spaces."
continue
registerCustData.name.length() < 3 || registerCustData.name.length() > 30 || !validName
True
False
5

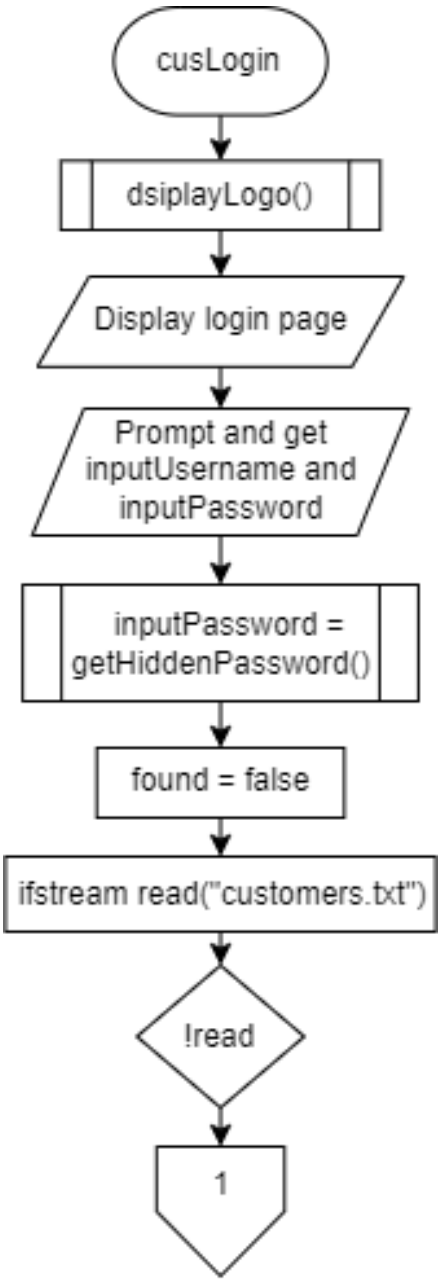

5
Prompt and registerCustData.contact
validContact = true
c : registerCustData.contact
False
True
!isdigit(c)
True
False
validContact = false
break
!validContact || registerCustData.contact.length() < 10 || registerCustData.contact.length() > 15
True
False
Print "Contact number can only contain digits."
!validContact || registerCustData.contact.length() < 10 || registerCustData.contact.length() > 15
True
False
6

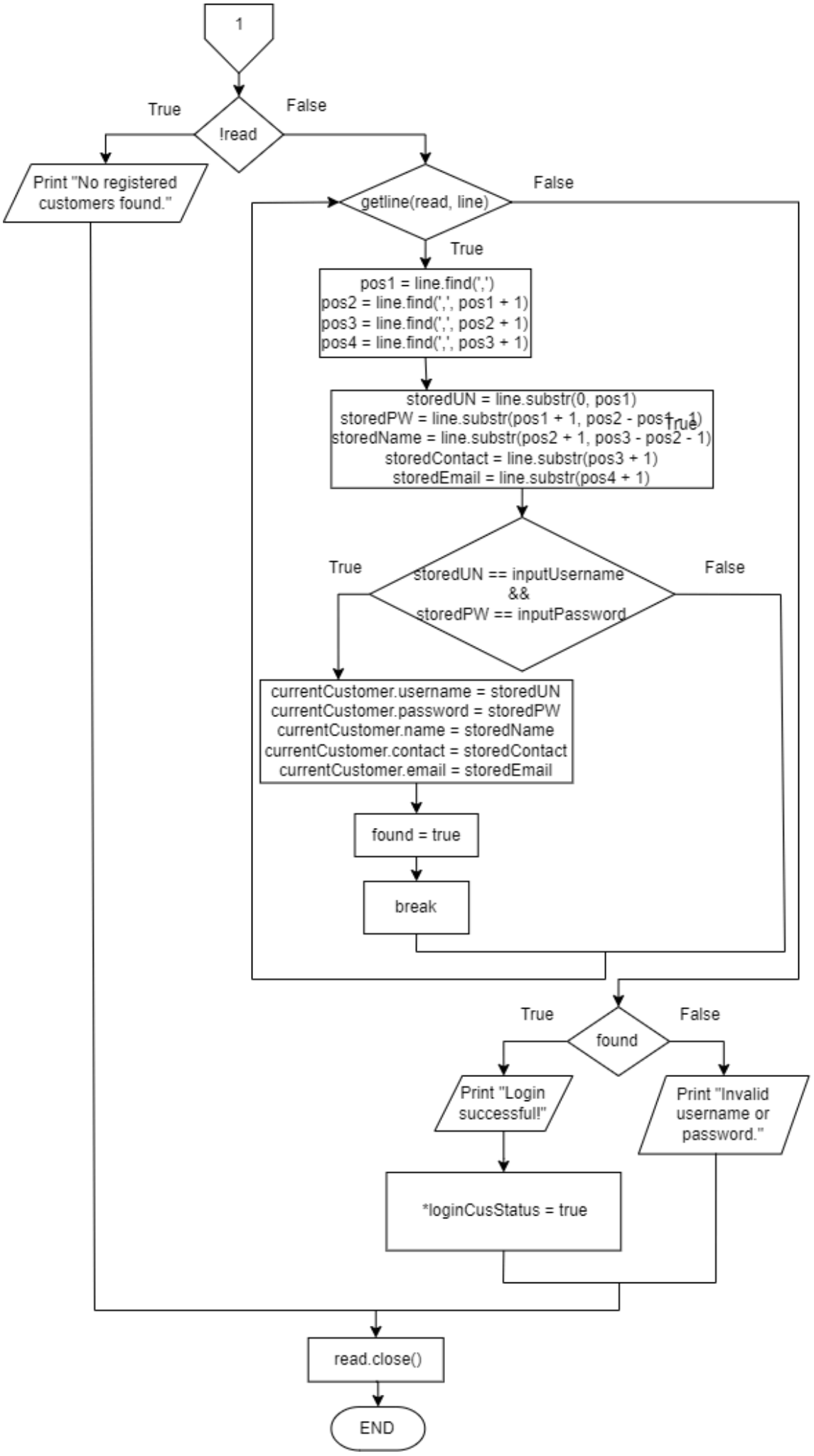

6
Prompt and read registerCustData.email
validate Email
True
!validEmail
False
Print "Invalid email format. Please enter a valid email address."
True
!validEmail
False
ofstream outCustomerFile ("customers.txt", ios::app)
True
outCustomerFile.fail()
False
Print "Failed to open customer file."
Display outCustomerFile, registerCustData.username , registerCustData.password, registerCustData.name, registerCustData.contact, registerCustData.email
outCustomerFile.close()
Print "Registration successful! Please go to login."
END

getHiddenPassword

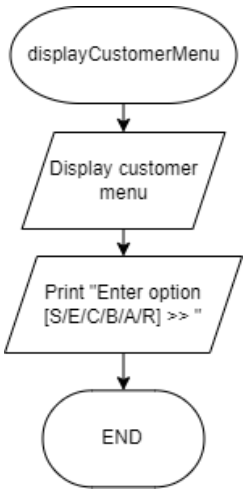


cusLogin

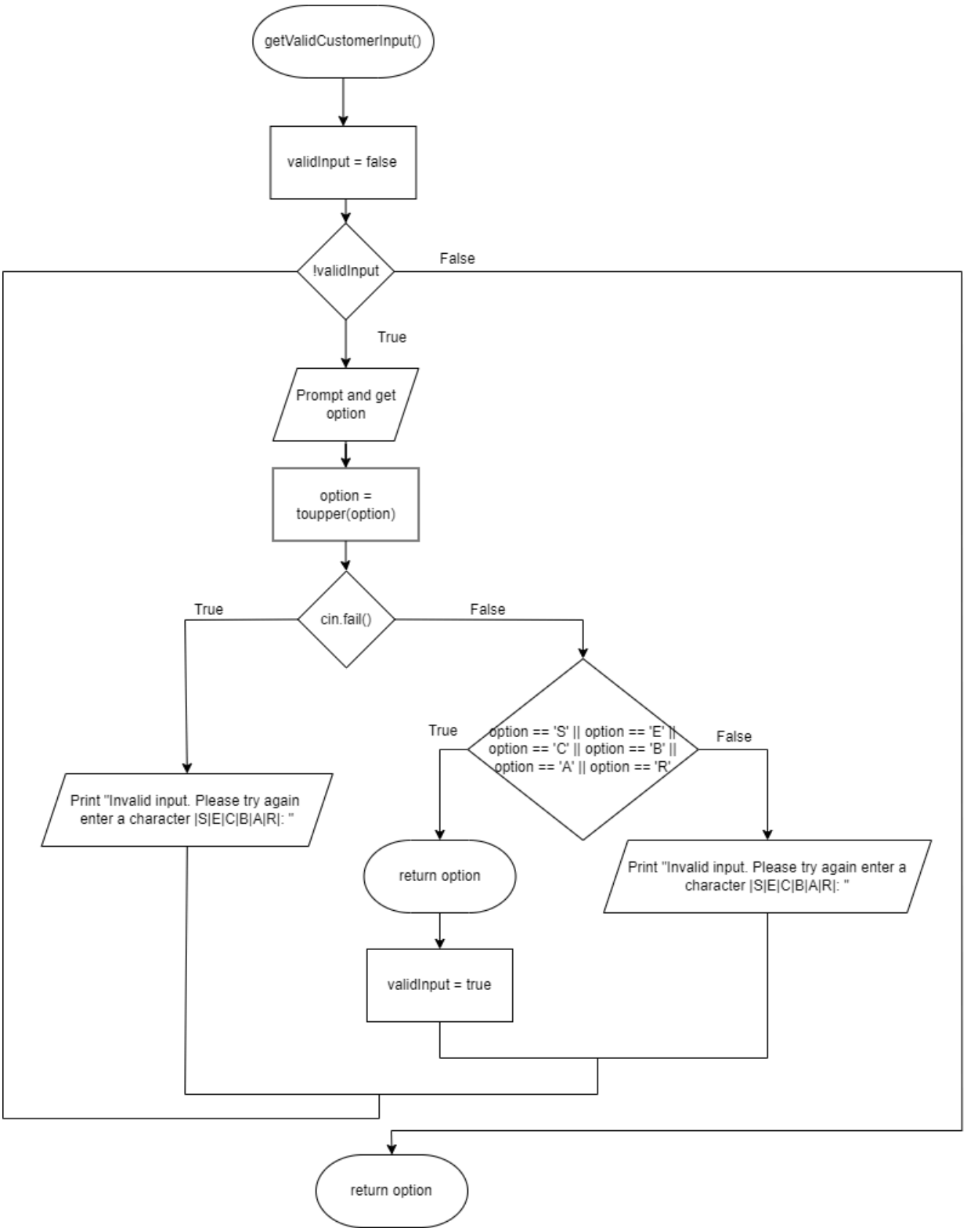

cusLogin
dsiplayLogo()
Display login page
Prompt and get inputUsername and inputPassword
inputPassword = getHiddenPassword()
found = false
ifstream read("customers.txt")
!read
1


1
!read
True
False
Print "No registered customers found."
getline(read, line)
False
True
pos1 = line.find(',')
pos2 = line.find(',', pos1 + 1)
pos3 = line.find(',', pos2 + 1)
pos4 = line.find(',', pos3 + 1)
storedUN = line.substr(0, pos1)
storedPW = line.substr(pos1 + 1, pos2 - pos1 - 1)
storedName = line.substr(pos2 + 1, pos3 - pos2 - 1)
storedContact = line.substr(pos3 + 1)
storedEmail = line.substr(pos4 + 1)
True
True
storedUN == inputUsername
&&
storedPW == inputPassword
False
currentCustomer.username = storedUN
currentCustomer.password = storedPW
currentCustomer.name = storedName
currentCustomer.contact = storedContact
currentCustomer.email = storedEmail
found = true
break
True
found
False
Print "Login successful!"
Print "Invalid username or password."
*loginCusStatus = true
read.close()
END

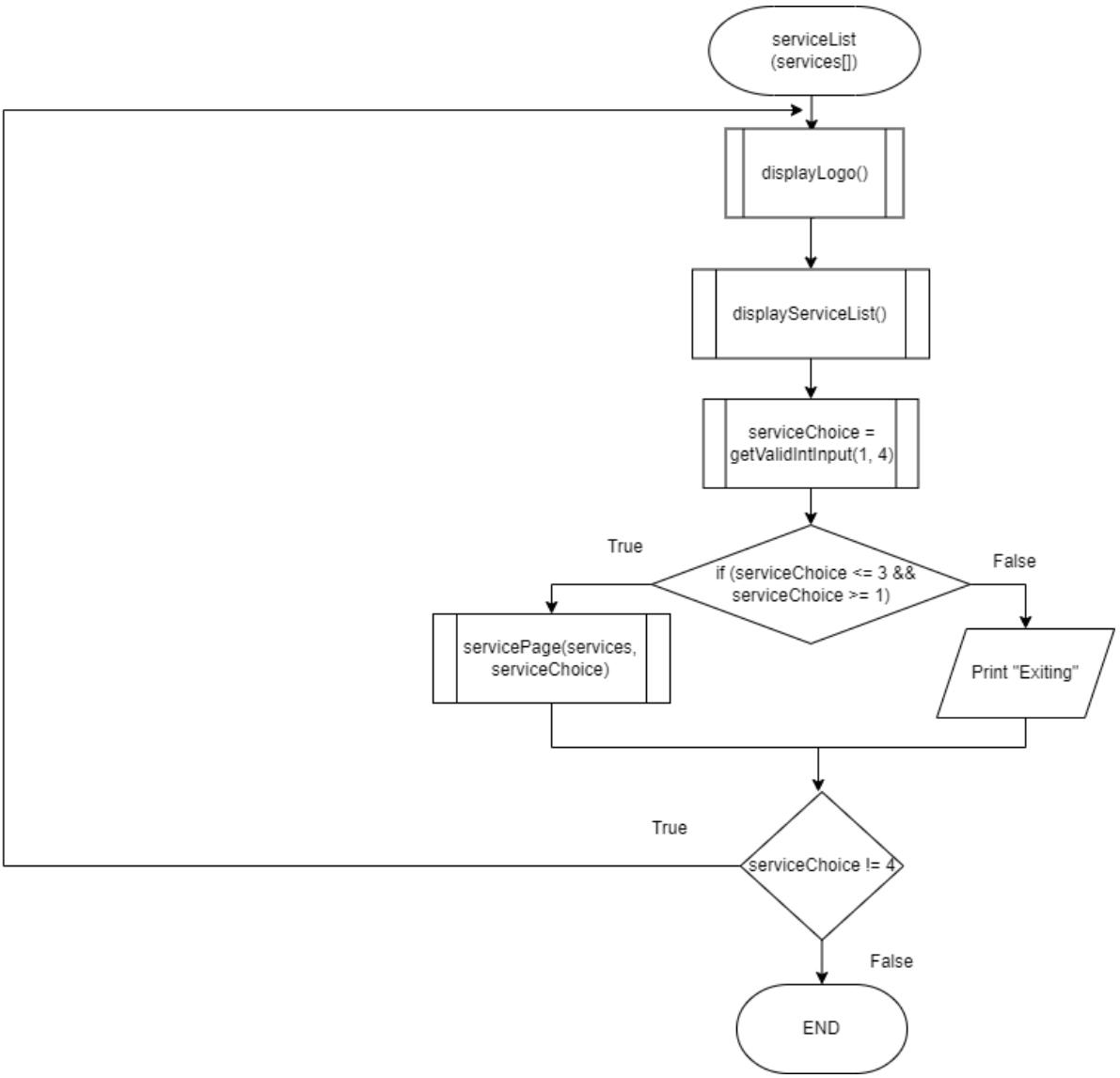
displayCustomerMenu



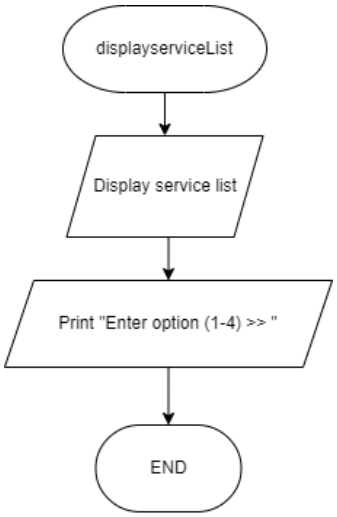
getValidCustomerInput



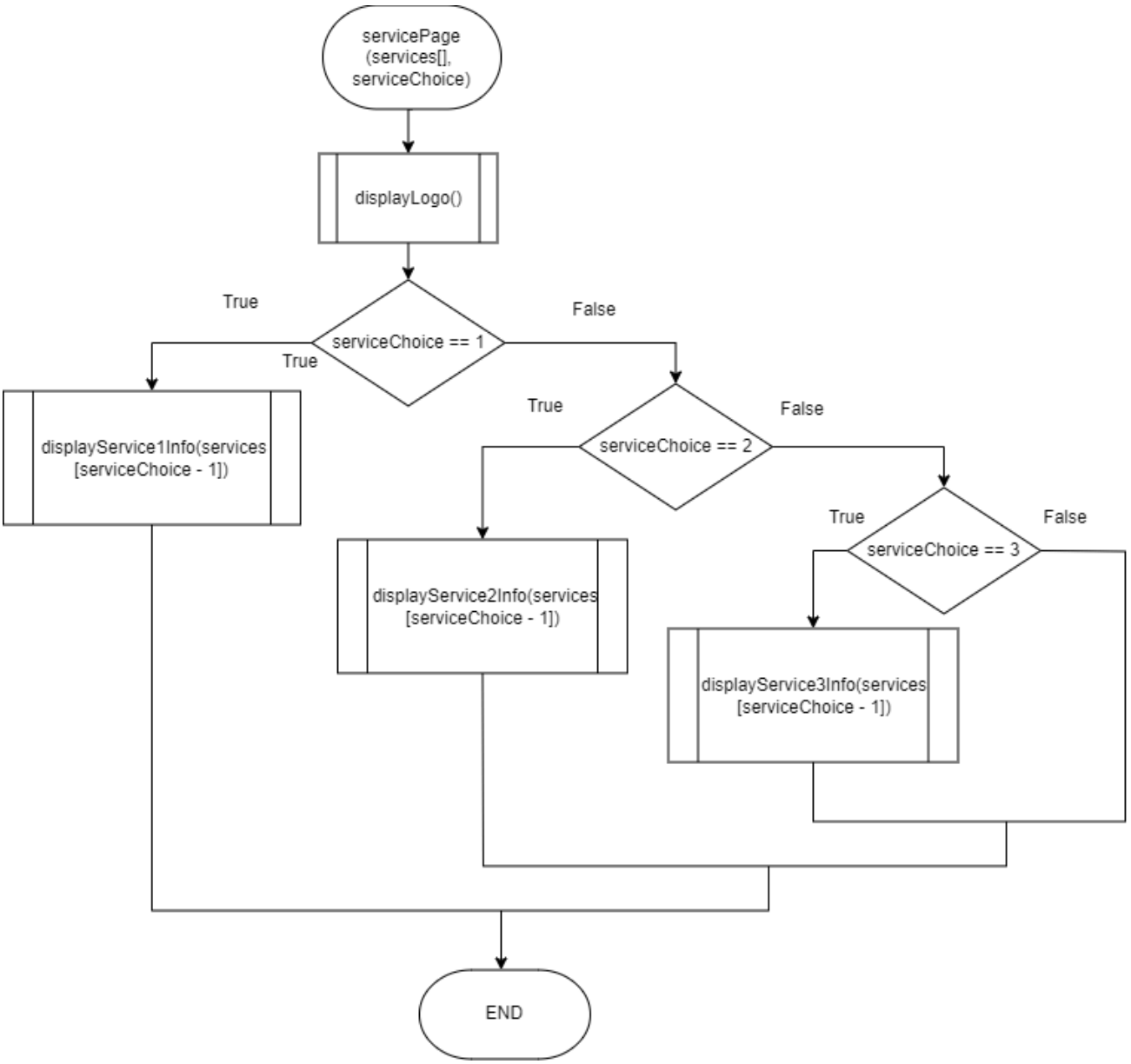
serviceList



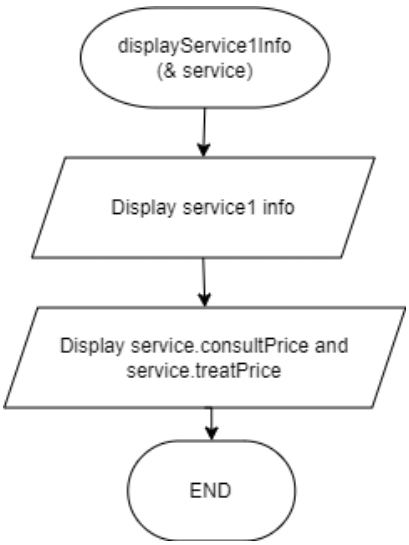
displayServiceList



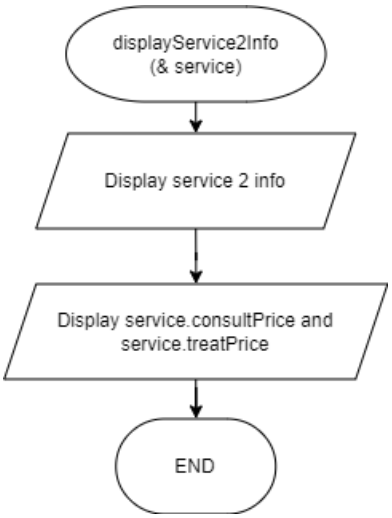
servicePage



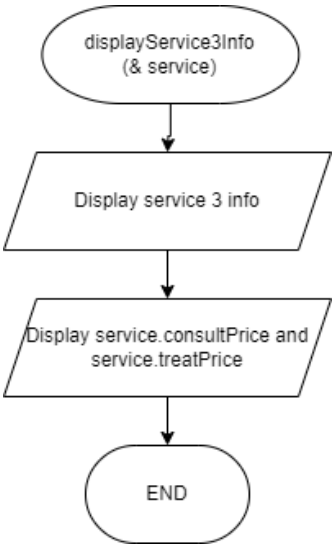
displayService1Info



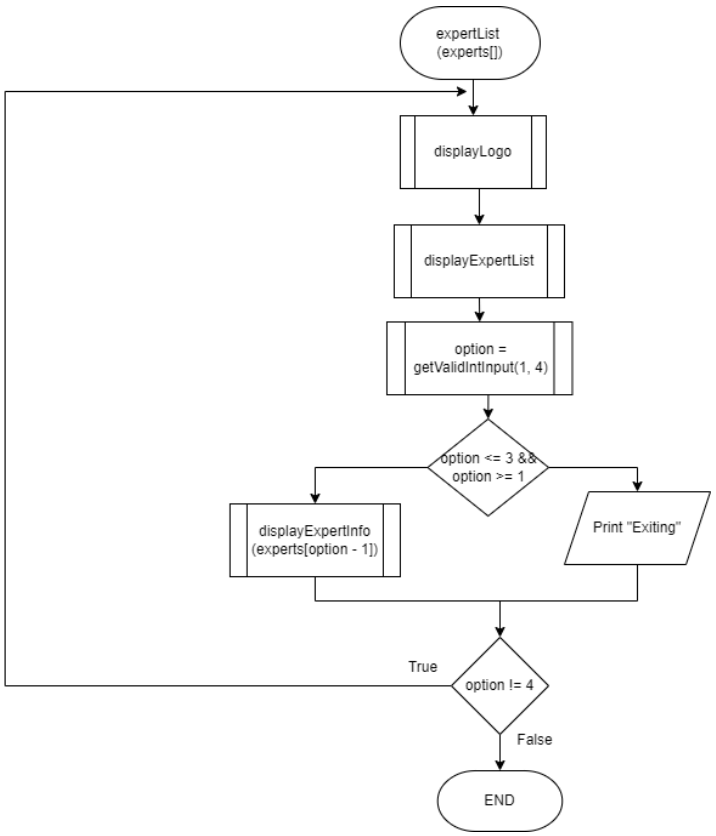
displayService2Info



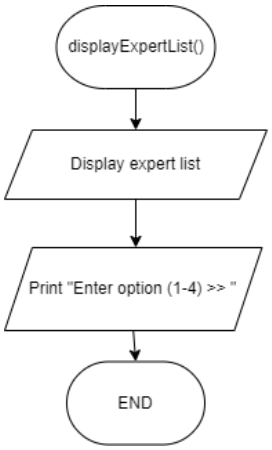
displayService3Info



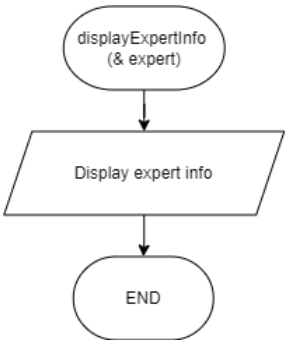
expertList



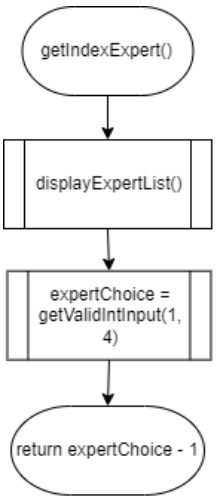
displayExpertList



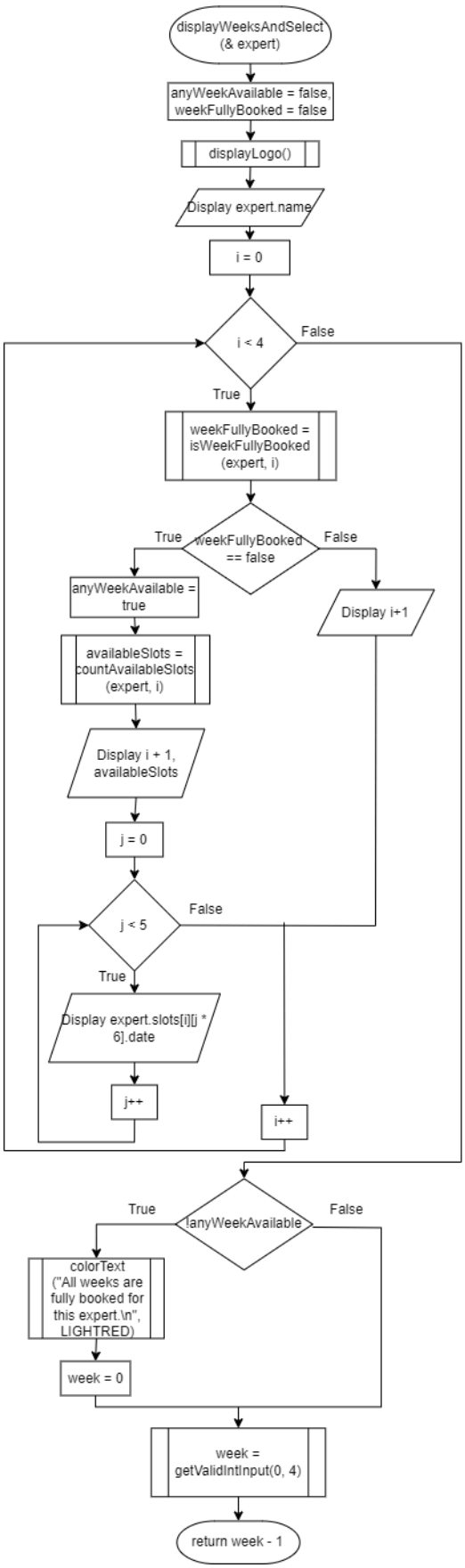
displayExpertInfo



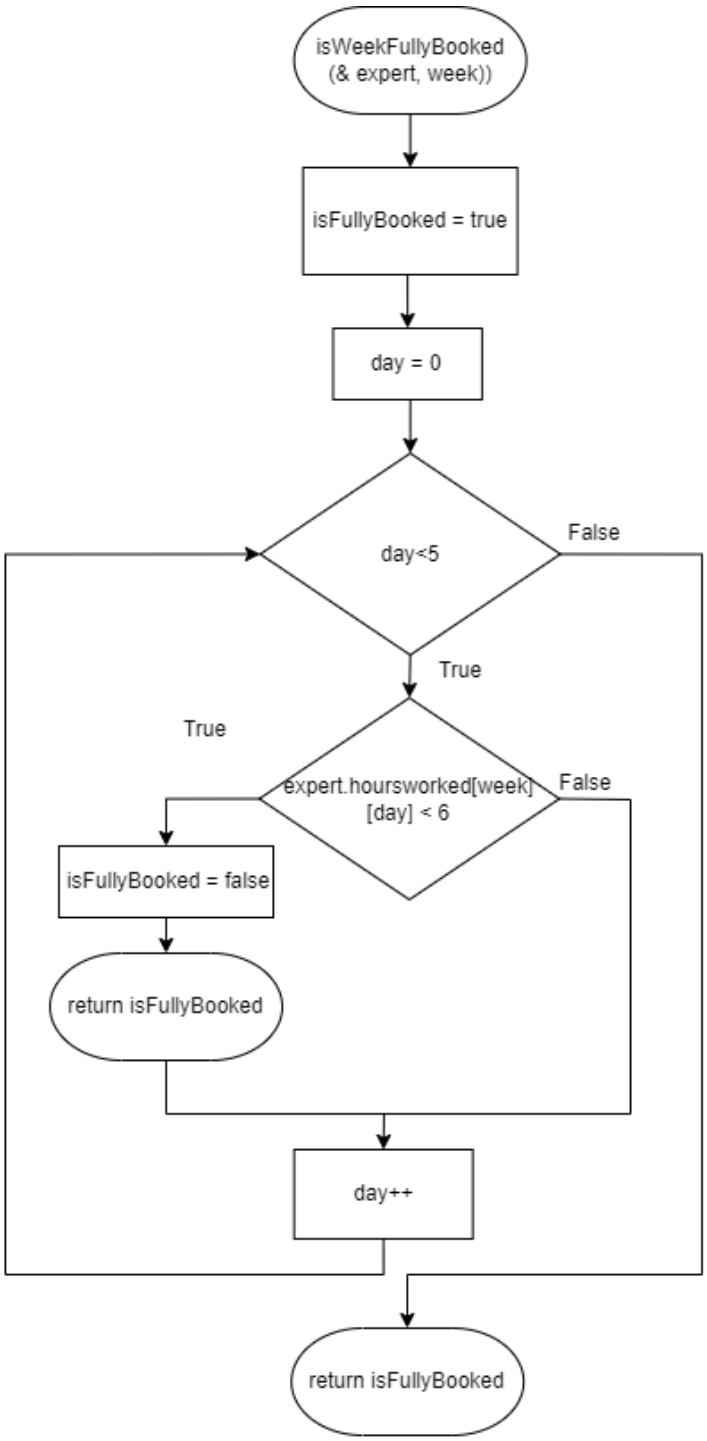
getIndexExpert



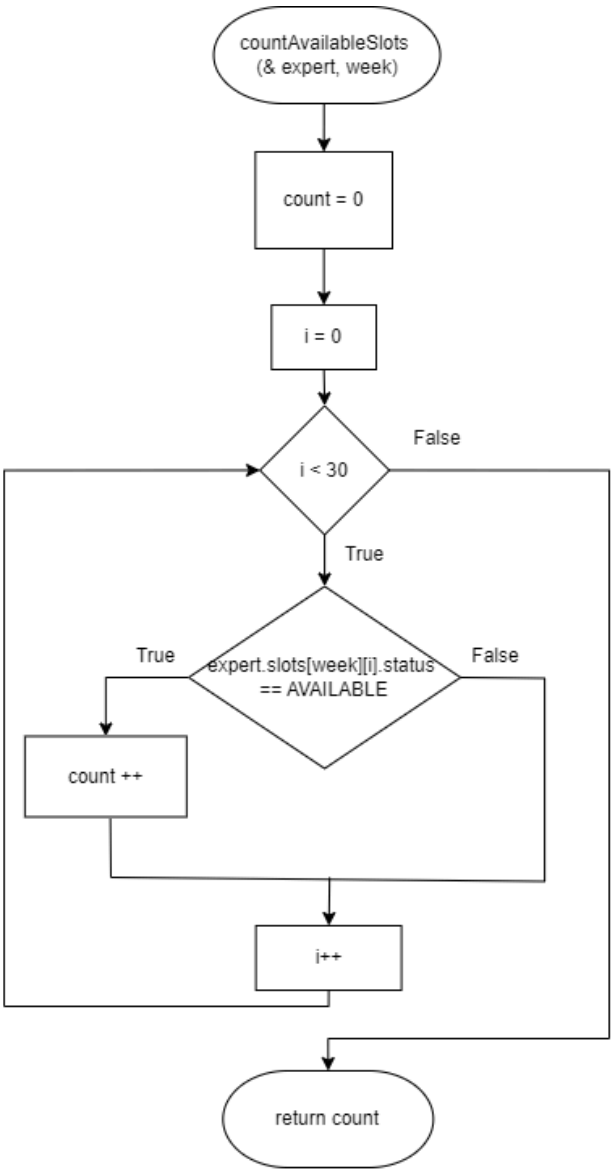
displayWeeksAndSelect



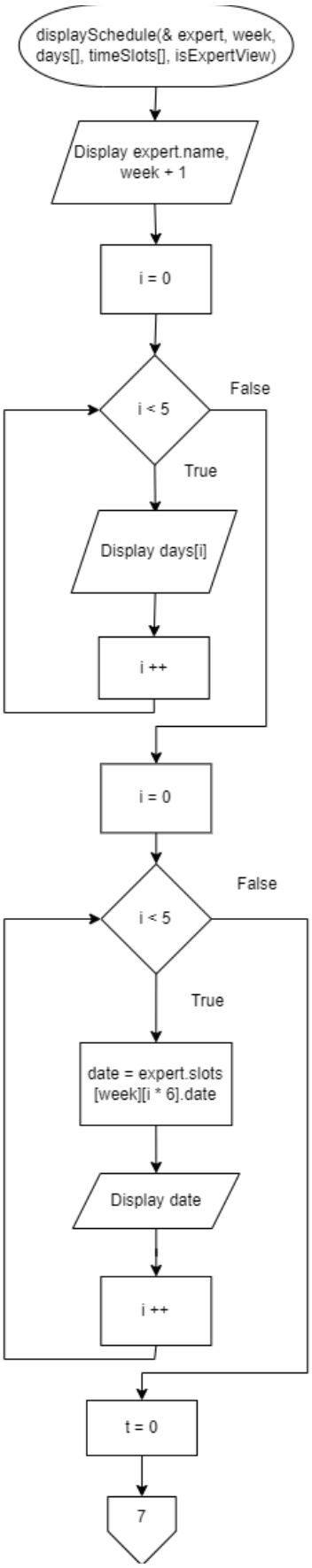
isWeekFullyBooked

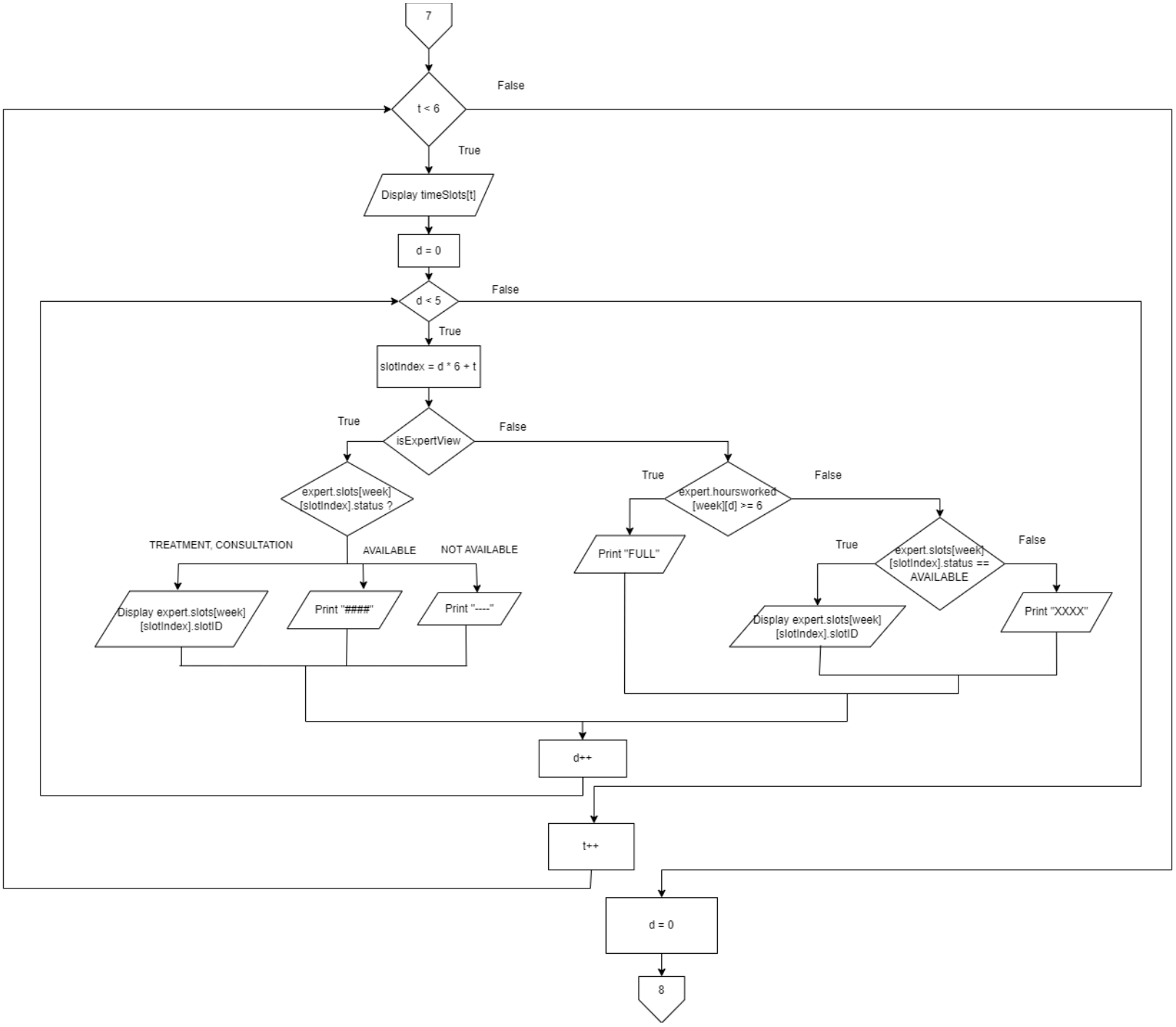


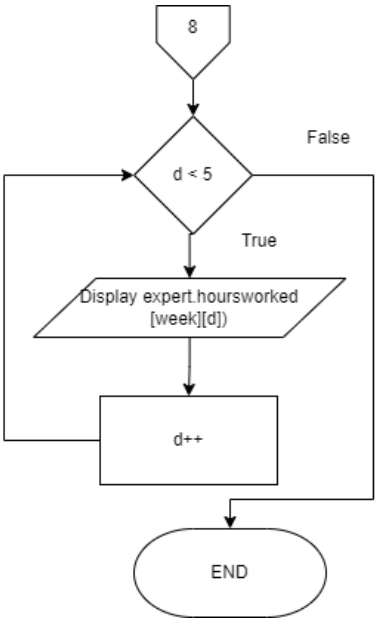
countAvailableSlots



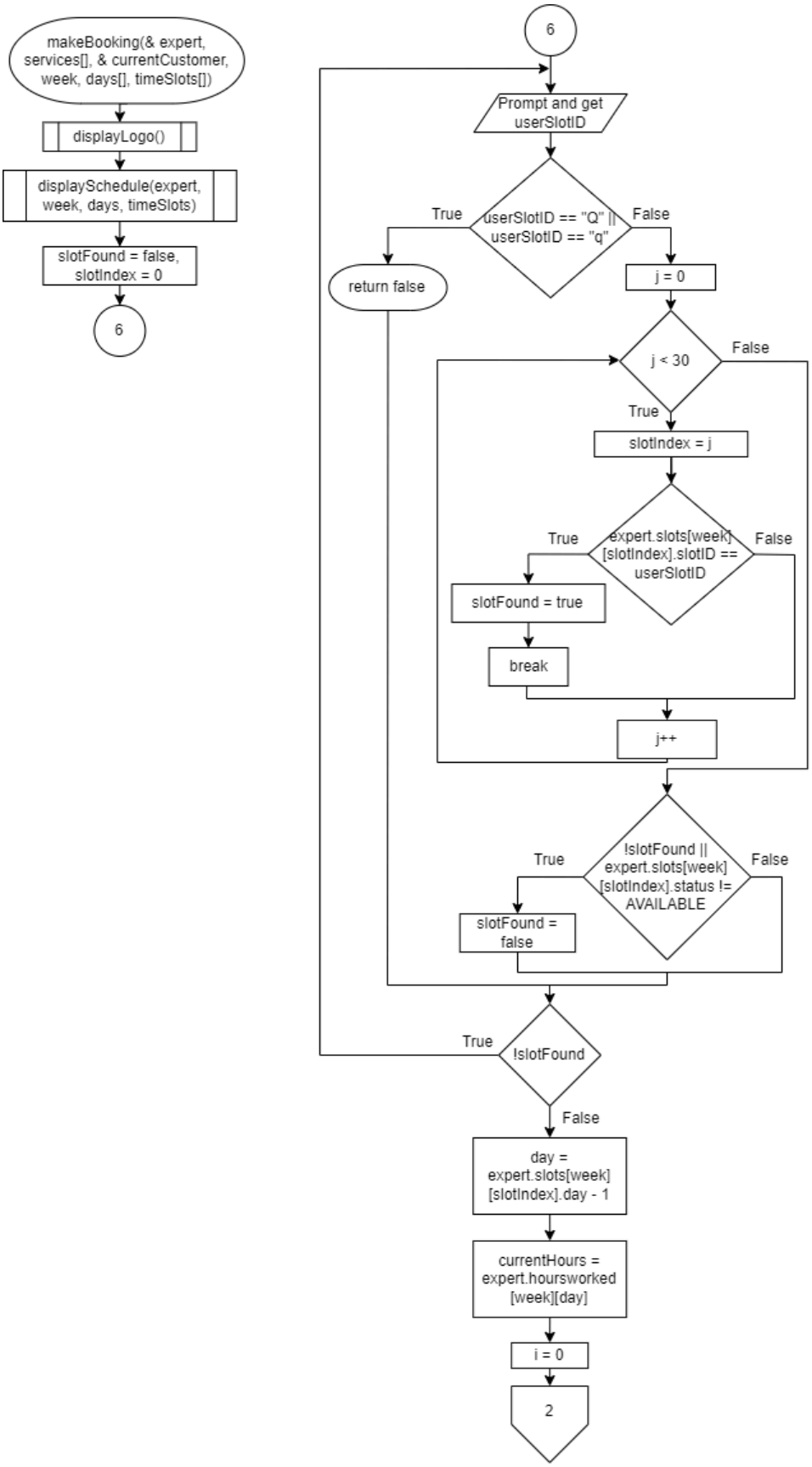
displaySchedule

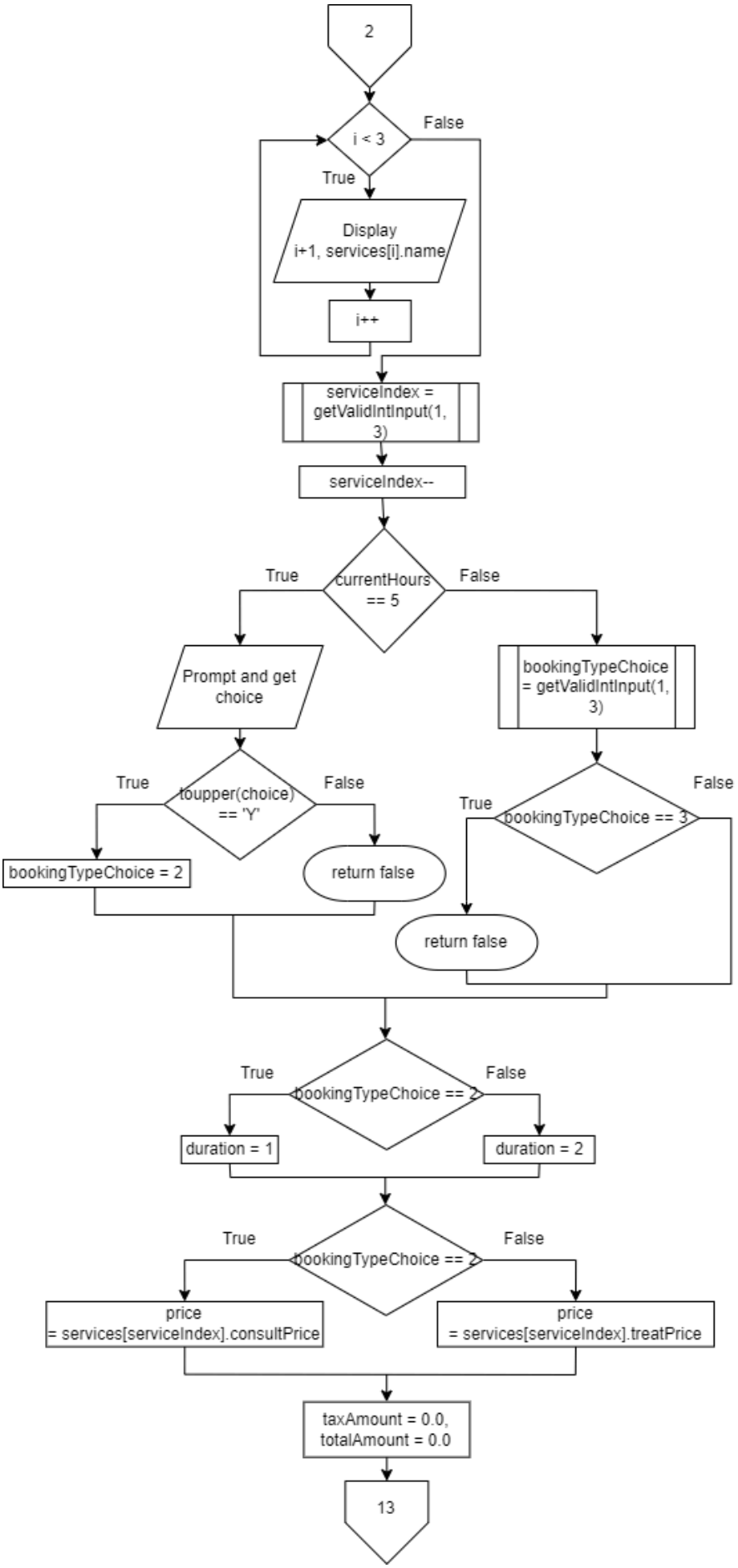


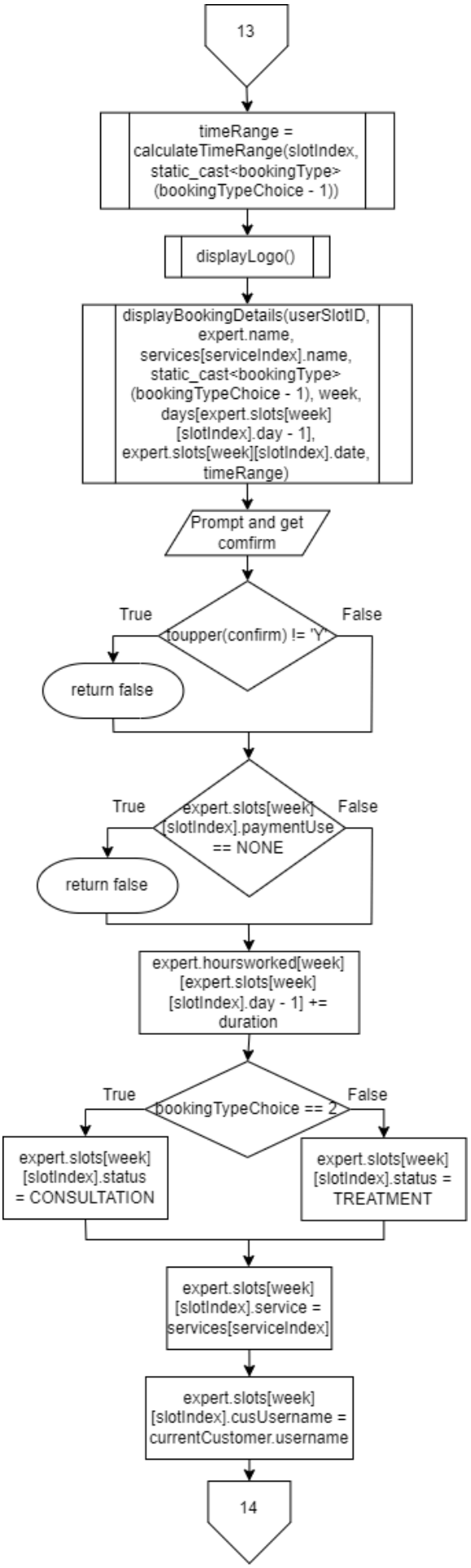

7
t < 6
False
True
Display timeSlots[t]
d = 0
d < 5
False
True
slotIndex = d * 6 + t
isExpertView
True
False
expert.slots[week] [slotIndex].status ?
TREATMENT, CONSULTATION
AVAILABLE
NOT AVAILABLE
Display expert.slots[week] [slotIndex].slotID
Print "####"
Print "----"
expert.hoursworked [week][d] >= 6
True
False
Print "FULL"
expert.slots[week] [slotIndex].status == AVAILABLE
True
False
Display expert.slots[week] [slotIndex].slotID
Print "XXXX"
d++
t++
d = 0
8

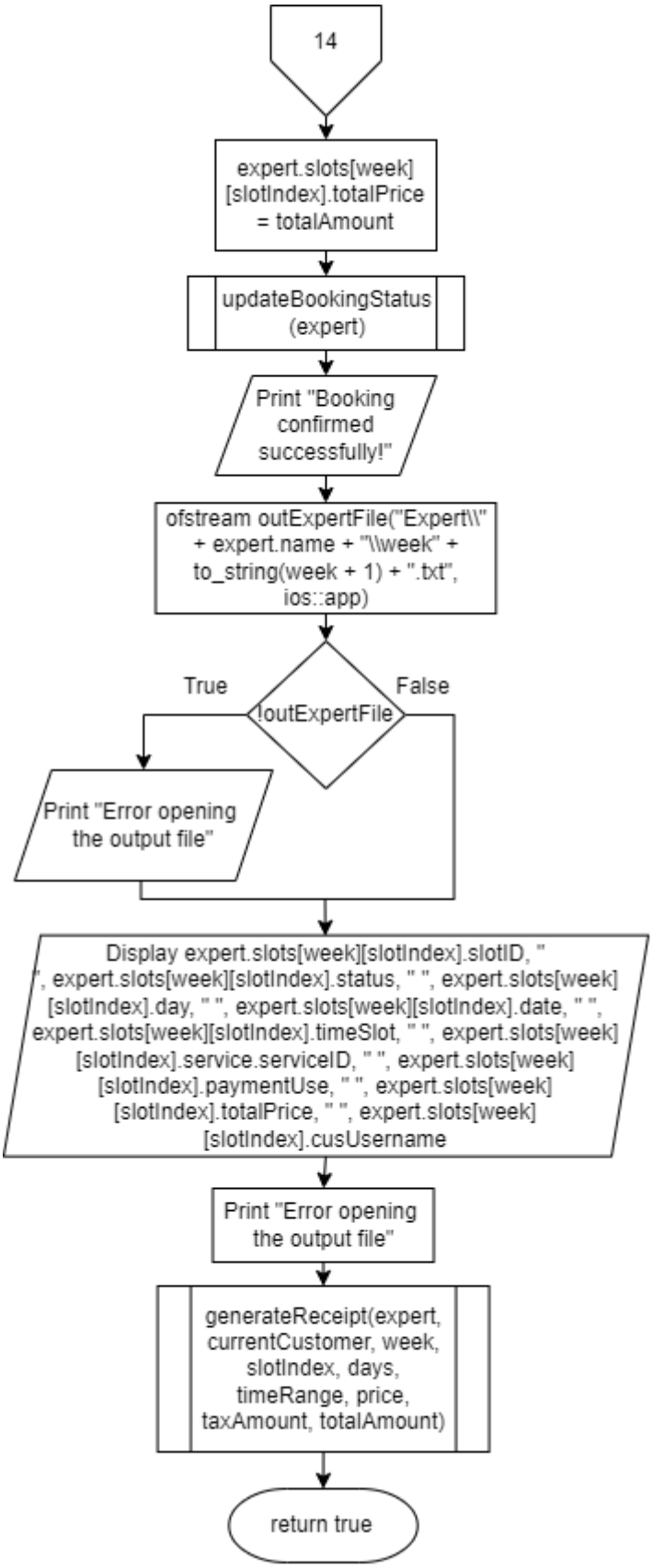

8
d < 5
False
True
Display expert.hoursworked [week][d])
d++
END

makeBooking

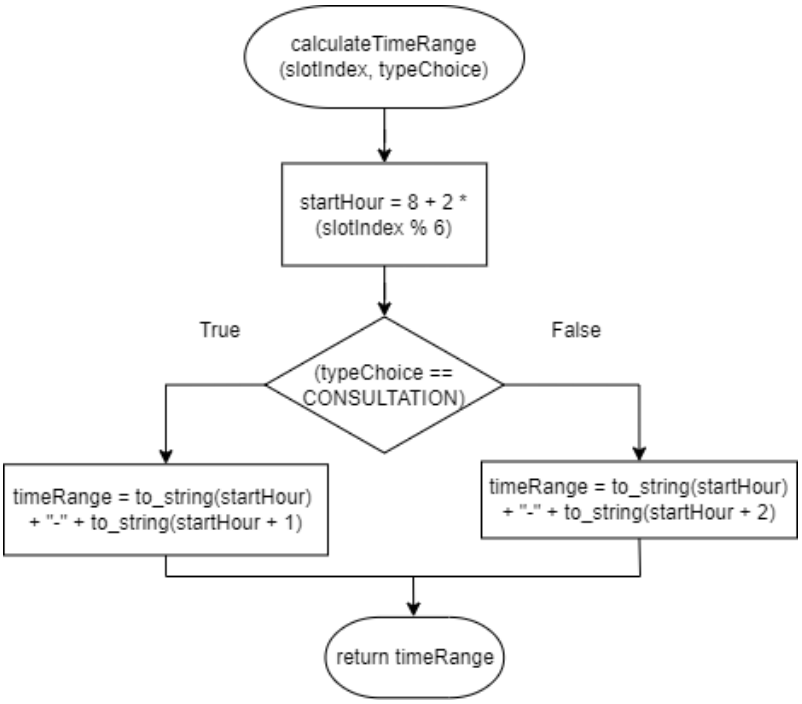



2
i < 3
False
True
Display
i+1, services[i].name
i++
serviceIndex =
getValidIntInput(1,
3)
serviceIndex--
currentHours
== 5
True
False
Prompt and get
choice
bookingTypeChoice
= getValidIntInput(1,
3)
toupper(choice)
== 'Y'
True
False
bookingTypeChoice = 2
return false
bookingTypeChoice == 3
True
False
return false
bookingTypeChoice == 2
True
False
duration = 1
duration = 2
bookingTypeChoice == 2
True
False
price
= services[serviceIndex].consultPrice
price
= services[serviceIndex].treatPrice
taxAmount = 0.0,
totalAmount = 0.0
13

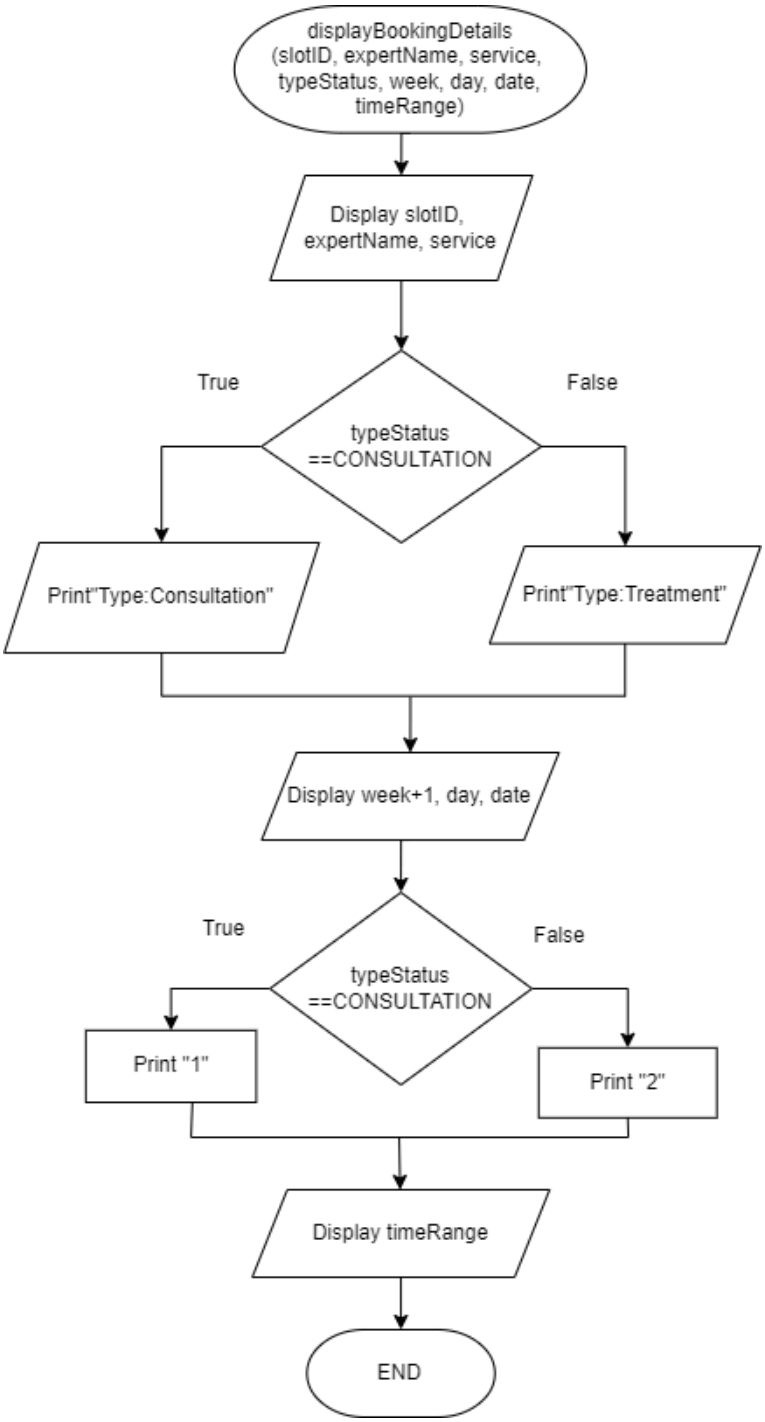

13
timeRange = calculateTimeRange(slotIndex, static_cast<bookingType> (bookingTypeChoice - 1))
displayLogo()
displayBookingDetails(userSlotID, expert.name, services[serviceIndex].name, static_cast<bookingType> (bookingTypeChoice - 1), week, days[expert.slots[week] [slotIndex].day - 1], expert.slots[week][slotIndex].date, timeRange)
Prompt and get comfirm
True
False
toupper(confirm) != 'Y'
return false
True
False
expert.slots[week] [slotIndex].paymentUse == NONE
return false
expert.hoursworked[week] [expert.slots[week] [slotIndex].day - 1] += duration
True
False
bookingTypeChoice == 2
expert.slots[week] [slotIndex].status = CONSULTATION
expert.slots[week] [slotIndex].status = TREATMENT
expert.slots[week] [slotIndex].service = services[serviceIndex]
expert.slots[week] [slotIndex].cusUsername = currentCustomer.username
14


14
expert.slots[week] [slotIndex].totalPrice = totalAmount
updateBookingStatus (expert)
Print "Booking confirmed successfully!"
ofstream outExpertFile("Expert\\" + expert.name + "\\week" + to_string(week + 1) + ".txt", ios::app)
True
False
!outExpertFile
Print "Error opening the output file"
Display expert.slots[week][slotIndex].slotID, " ", expert.slots[week][slotIndex].status, " ", expert.slots[week] [slotIndex].day, " ", expert.slots[week][slotIndex].date, " ", expert.slots[week][slotIndex].timeSlot, " ", expert.slots[week] [slotIndex].service.serviceID, " ", expert.slots[week] [slotIndex].paymentUse, " ", expert.slots[week] [slotIndex].totalPrice, " ", expert.slots[week] [slotIndex].cusUsername
Print "Error opening the output file"
generateReceipt(expert, currentCustomer, week, slotIndex, days, timeRange, price, taxAmount, totalAmount)
return true

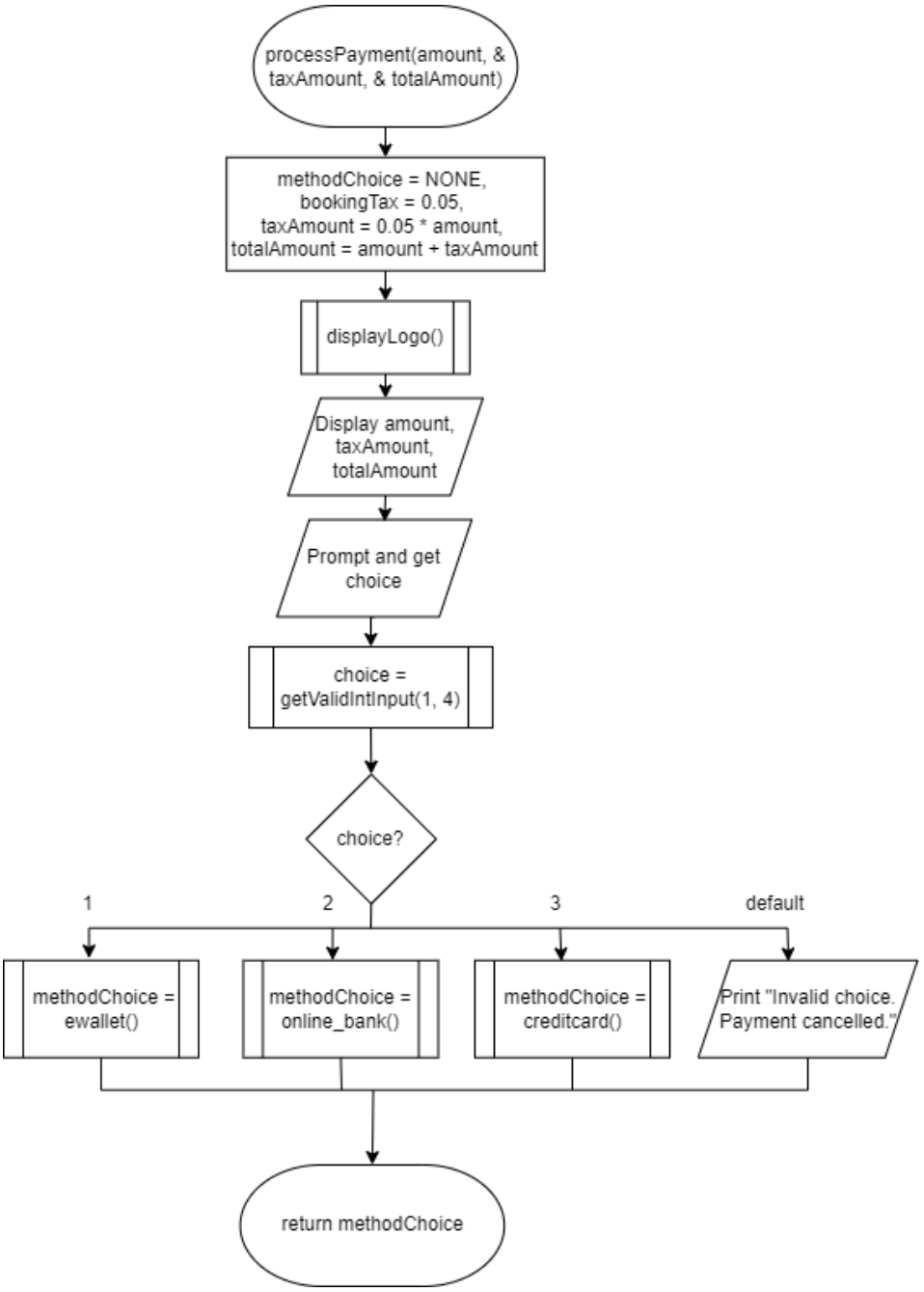
calculateTimeRange



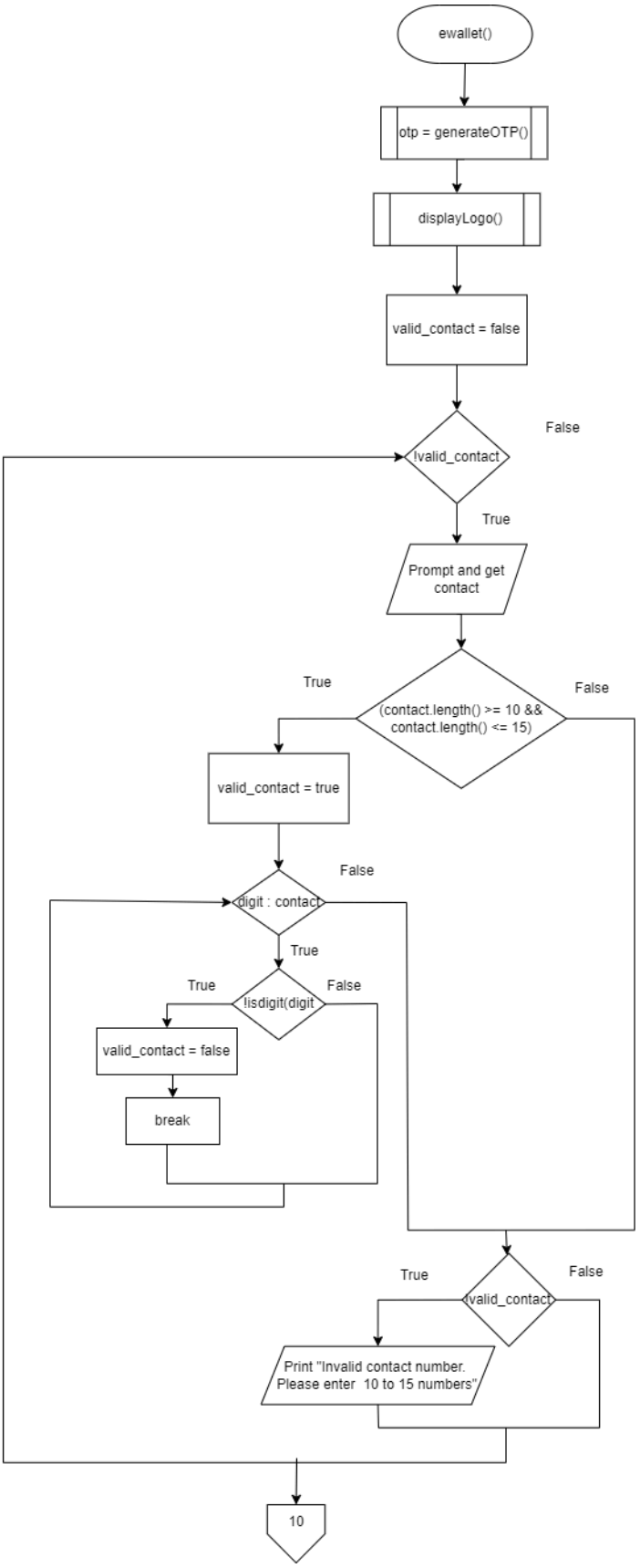
displayBookingDetails

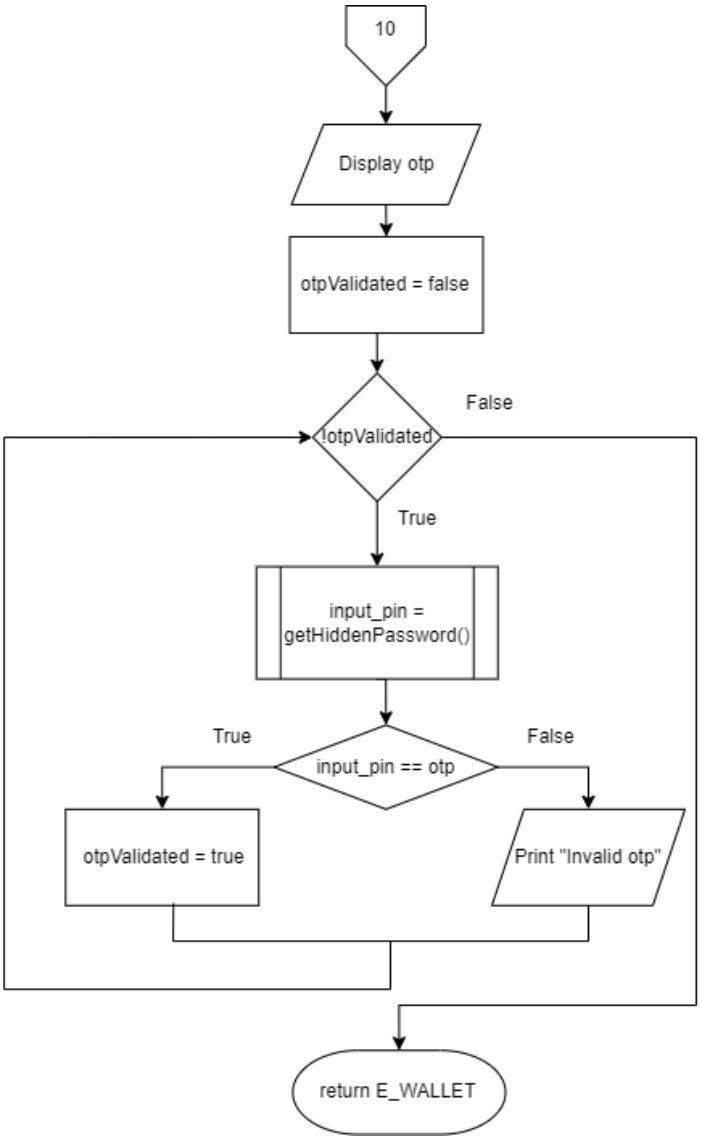


processPayment

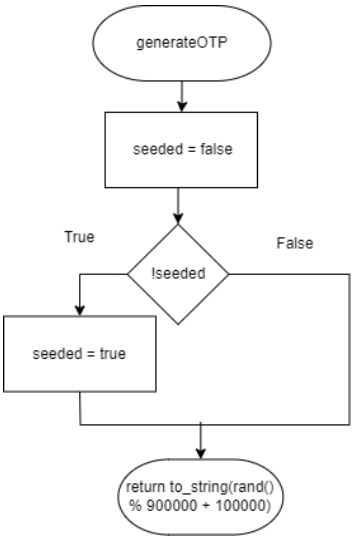


ewallet

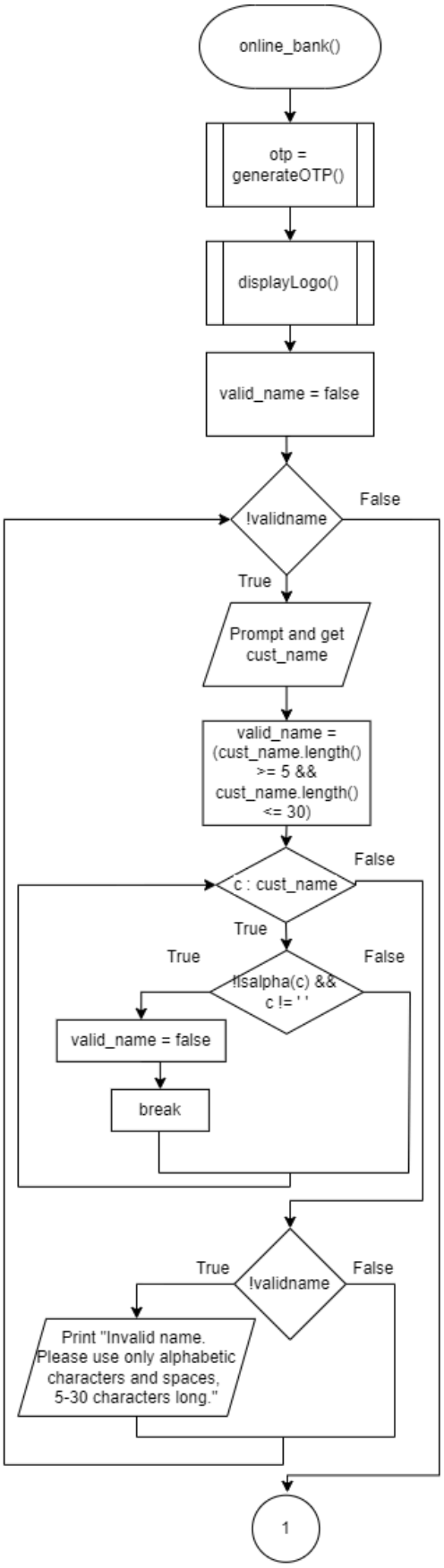

ewallet()
otp = generateOTP()
displayLogo()
valid_contact = false
!valid_contact
False
True
Prompt and get contact
True
(contact.length() >= 10 && contact.length() <= 15)
False
valid_contact = true
False
digit : contact
True
True
!isdigit(digit
False
valid_contact = false
break
True
!valid_contact
False
Print "Invalid contact number. Please enter 10 to 15 numbers"
10

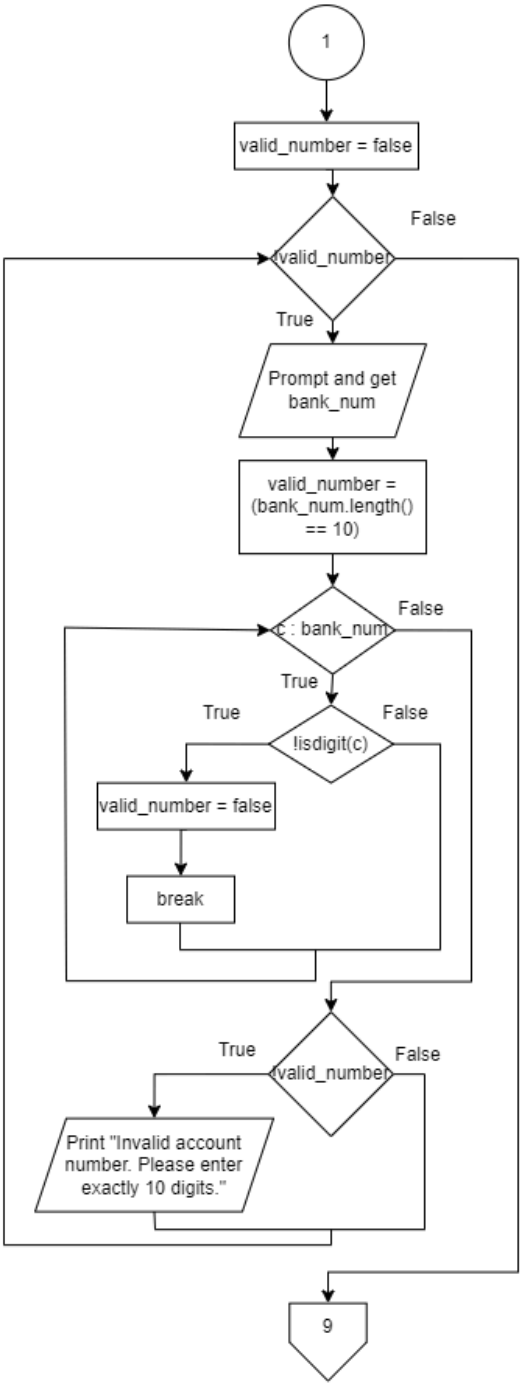


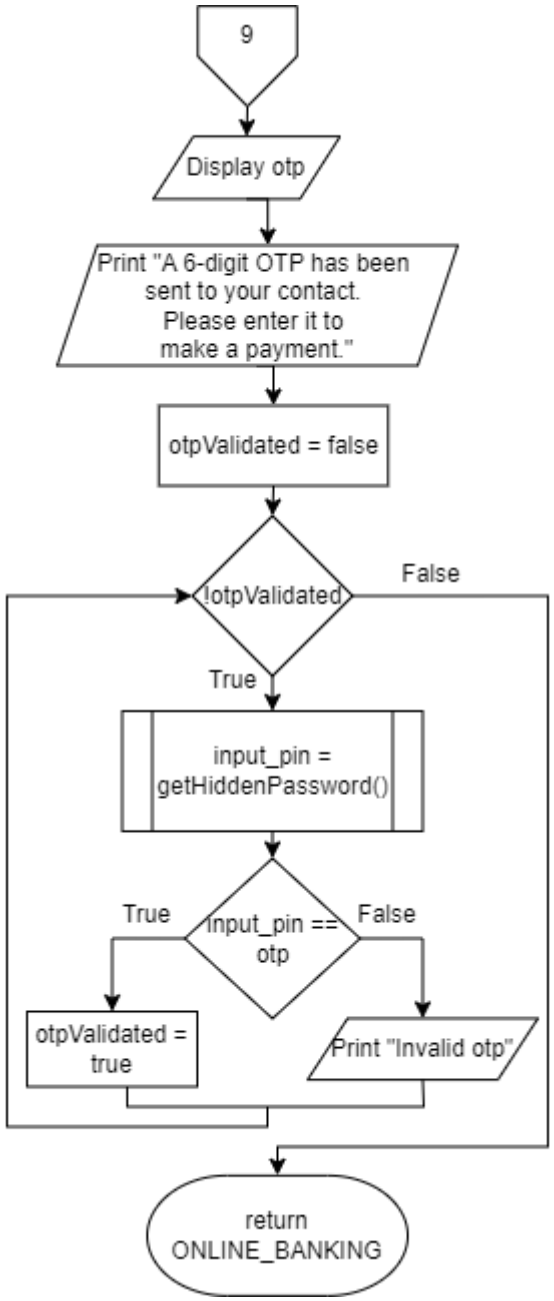
generateOTP



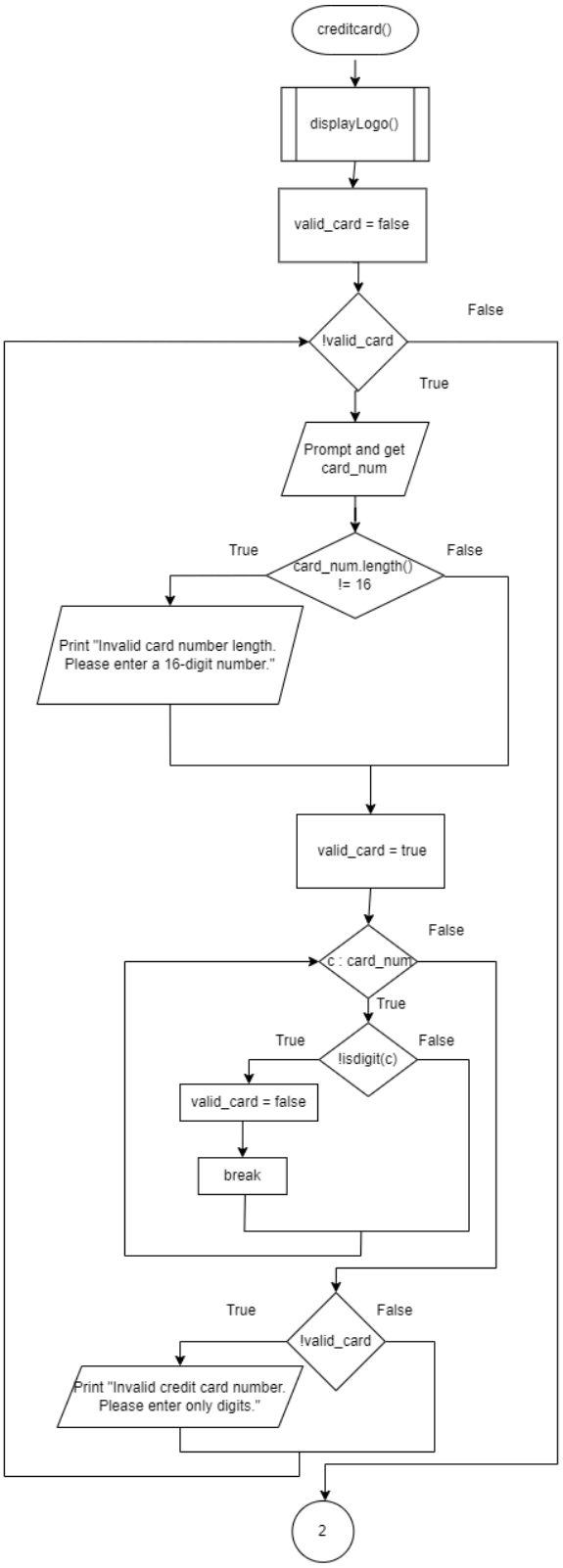
online_bank

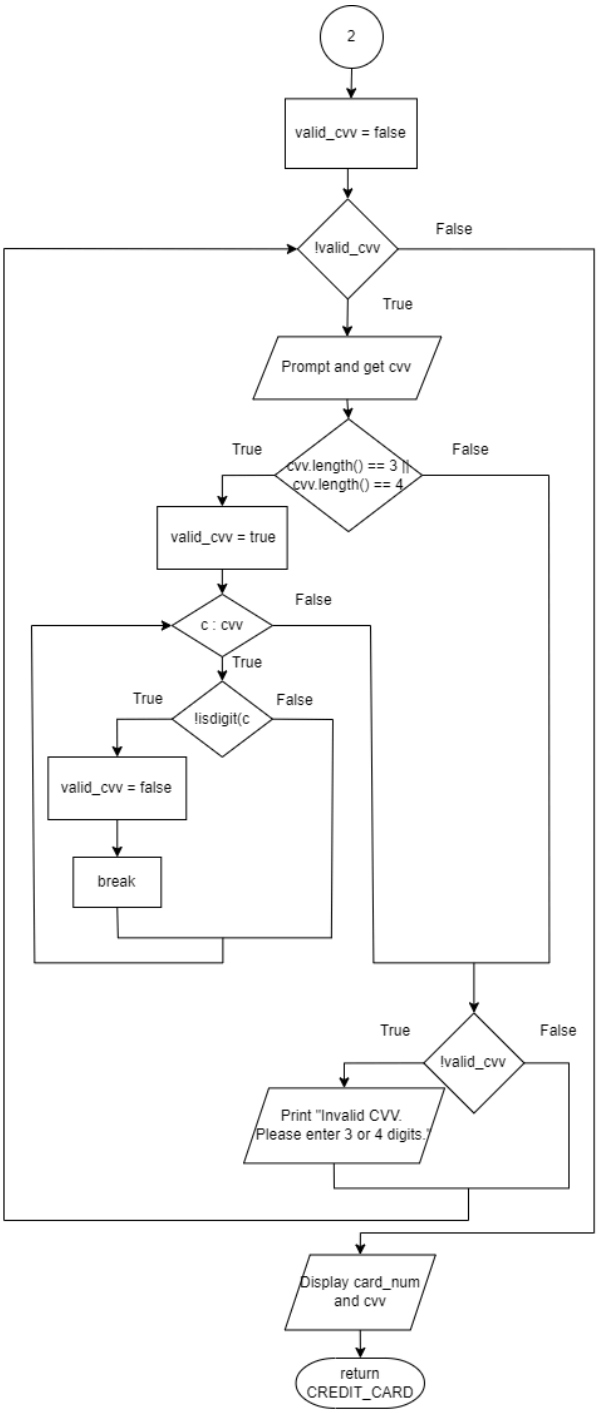

online_bank()
otp = generateOTP()
displayLogo()
valid_name = false
!validname
False
True
Prompt and get cust_name
valid_name = (cust_name.length() >= 5 && cust_name.length() <= 30)
c : cust_name
False
True
True
!isalpha(c) && c != ' '
False
valid_name = false
break
True
!validname
False
Print "Invalid name. Please use only alphabetic characters and spaces, 5-30 characters long."
1


1
valid_number = false
!valid_number
False
True
Prompt and get bank_num
valid_number = (bank_num.length() == 10)
c : bank_num
False
True
True
!isdigit(c)
False
valid_number = false
break
True
!valid_number
False
Print "Invalid account number. Please enter exactly 10 digits."
9

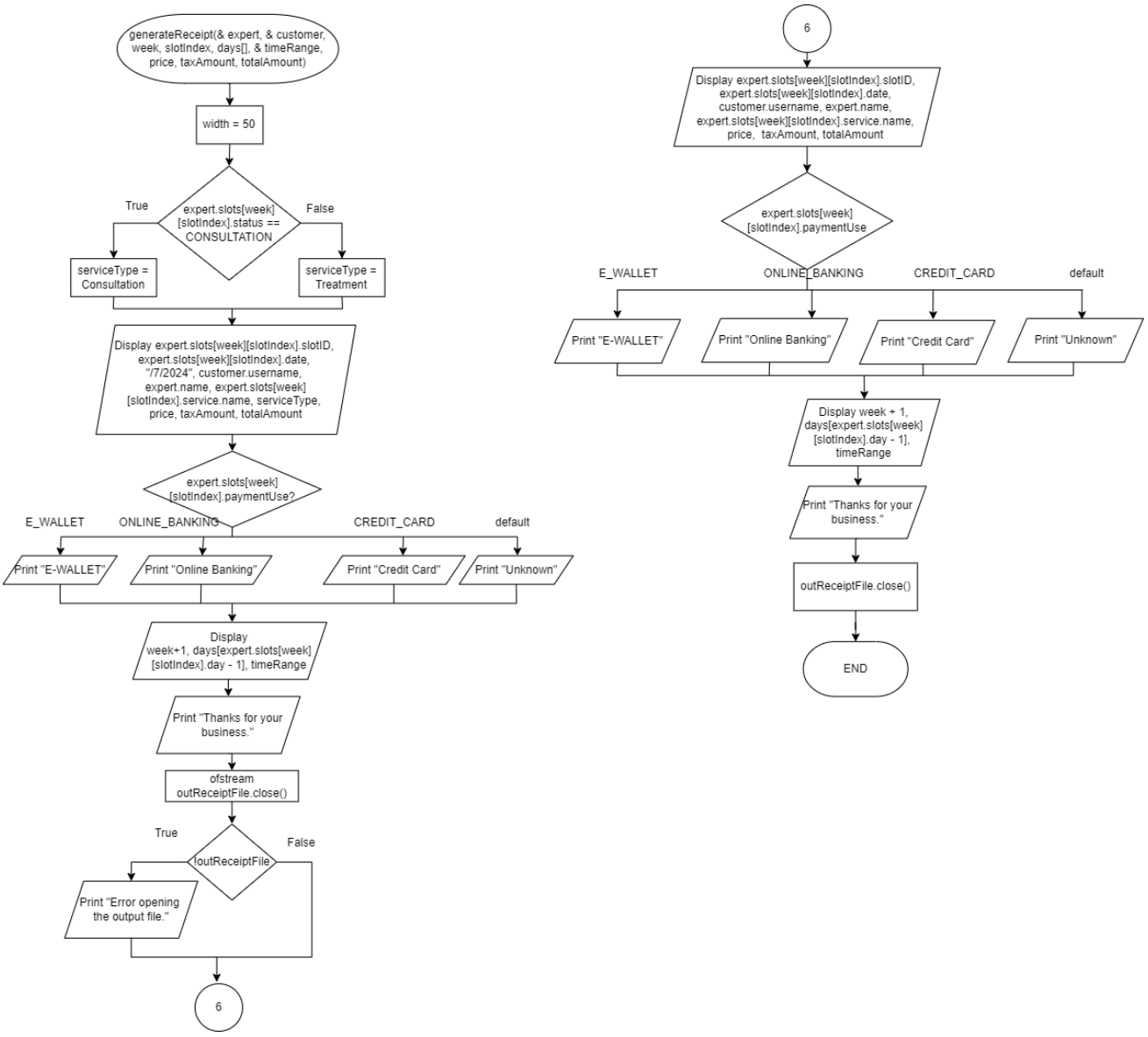

9
Display otp
Print "A 6-digit OTP has been sent to your contact. Please enter it to make a payment."
otpValidated = false
!otpValidated
False
True
input_pin = getHiddenPassword()
True
input_pin == otp
False
otpValidated = true
Print "Invalid otp"
return ONLINE_BANKING

creditcard

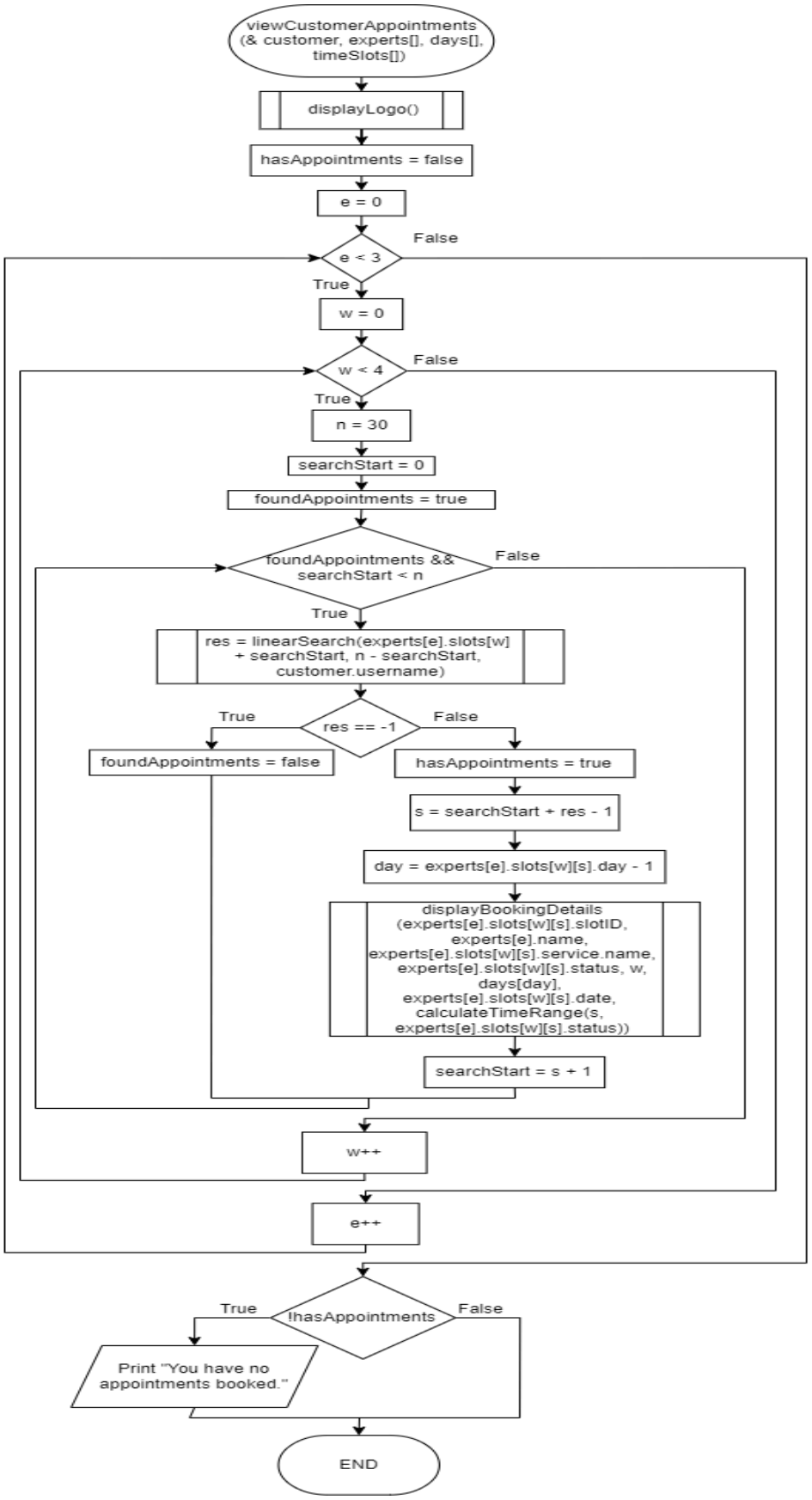

creditcard()
displayLogo()
valid_card = false
!valid_card
False
True
Prompt and get card_num
True
card_num.length() != 16
False
Print "Invalid card number length. Please enter a 16-digit number."
valid_card = true
False
c : card_num
True
True
!isdigit(c)
False
valid_card = false
break
True
!valid_card
False
Print "Invalid credit card number. Please enter only digits."
2


2
valid_cvv = false
!valid_cvv
False
True
Prompt and get cvv
True
cvv.length() == 3 || cvv.length() == 4
False
valid_cvv = true
False
c : cvv
True
True
!isdigit(c
False
valid_cvv = false
break
True
!valid_cvv
False
Print "Invalid CVV. Please enter 3 or 4 digits."
Display card_num and cvv
return CREDIT_CARD

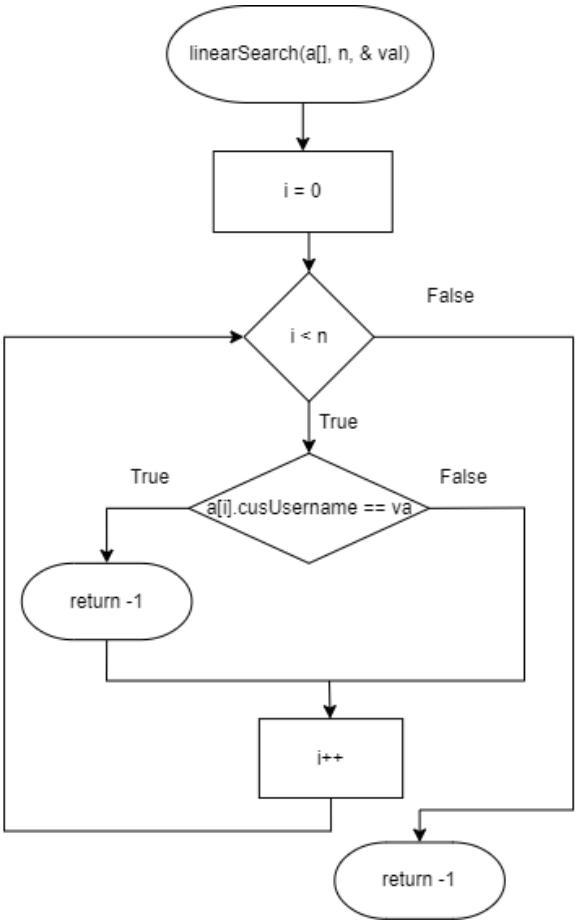
generateReceipt



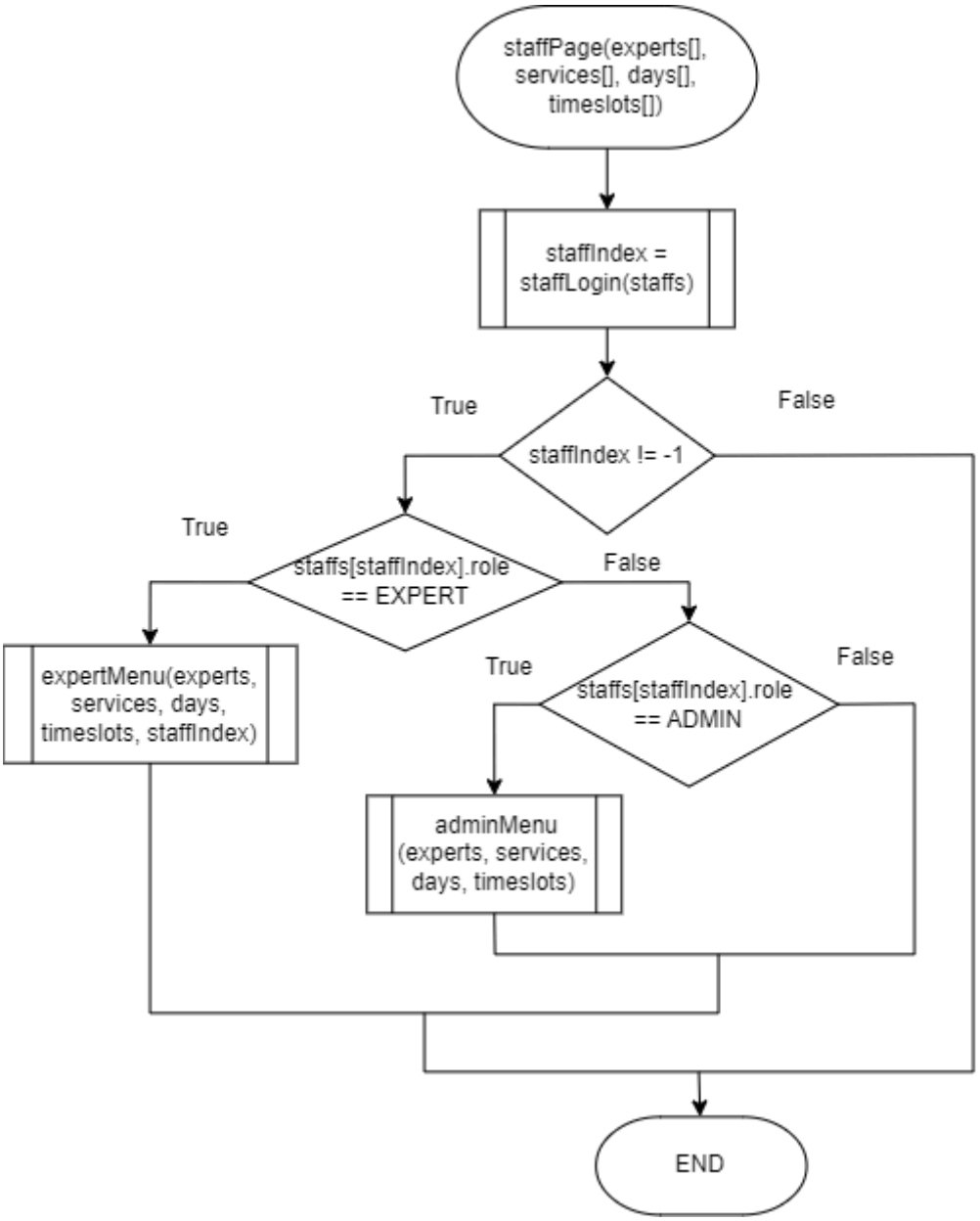
viewCustomerAppointments



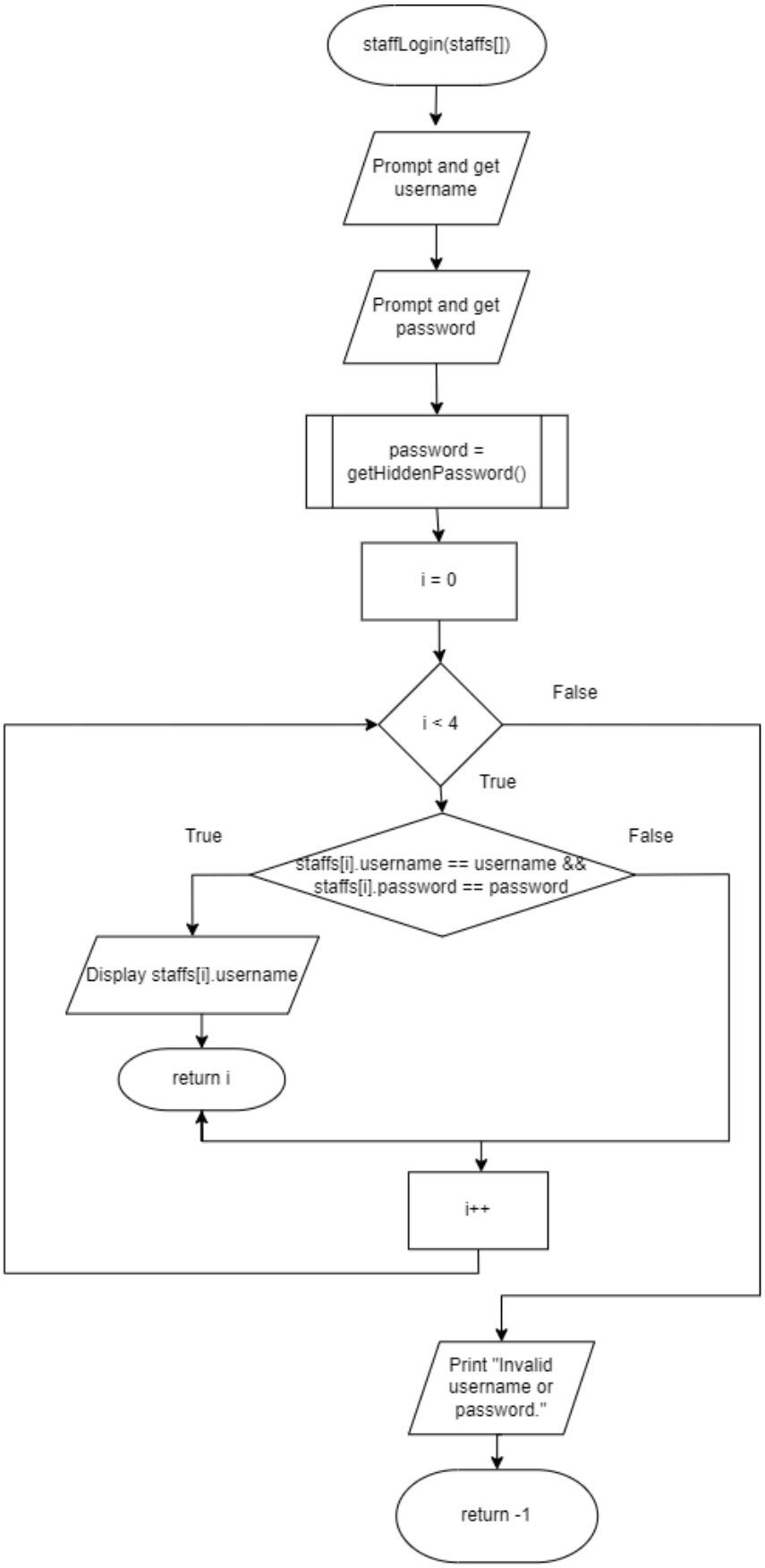
linearSearch



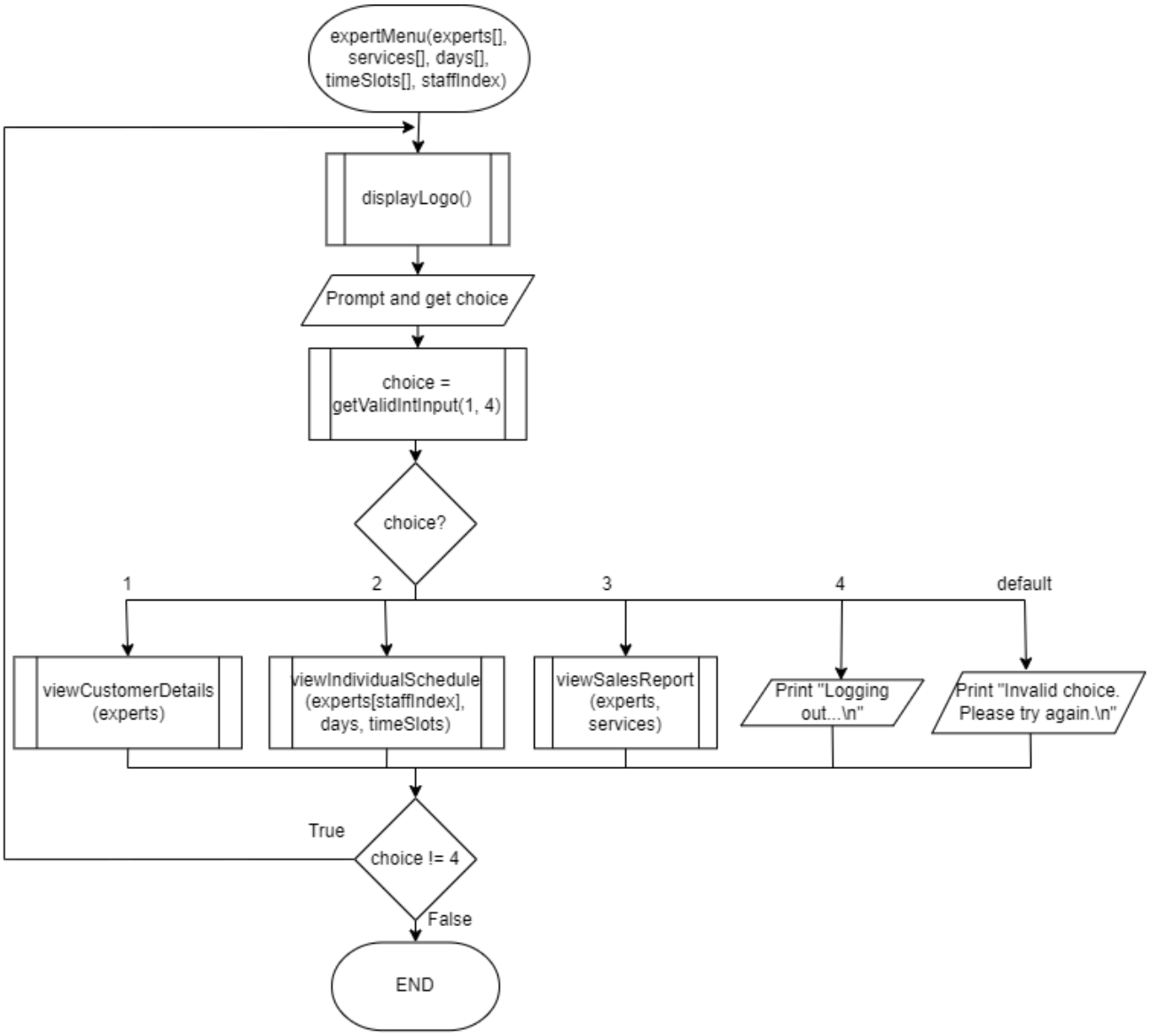
staffPage


staffPage(experts[], services[], days[], timeslots[])
staffIndex = staffLogin(staffs)
True
False
staffIndex != -1
True
False
staffs[staffIndex].role == EXPERT
expertMenu(experts, services, days, timeslots, staffIndex)
True
False
staffs[staffIndex].role == ADMIN
adminMenu (experts, services, days, timeslots)
END

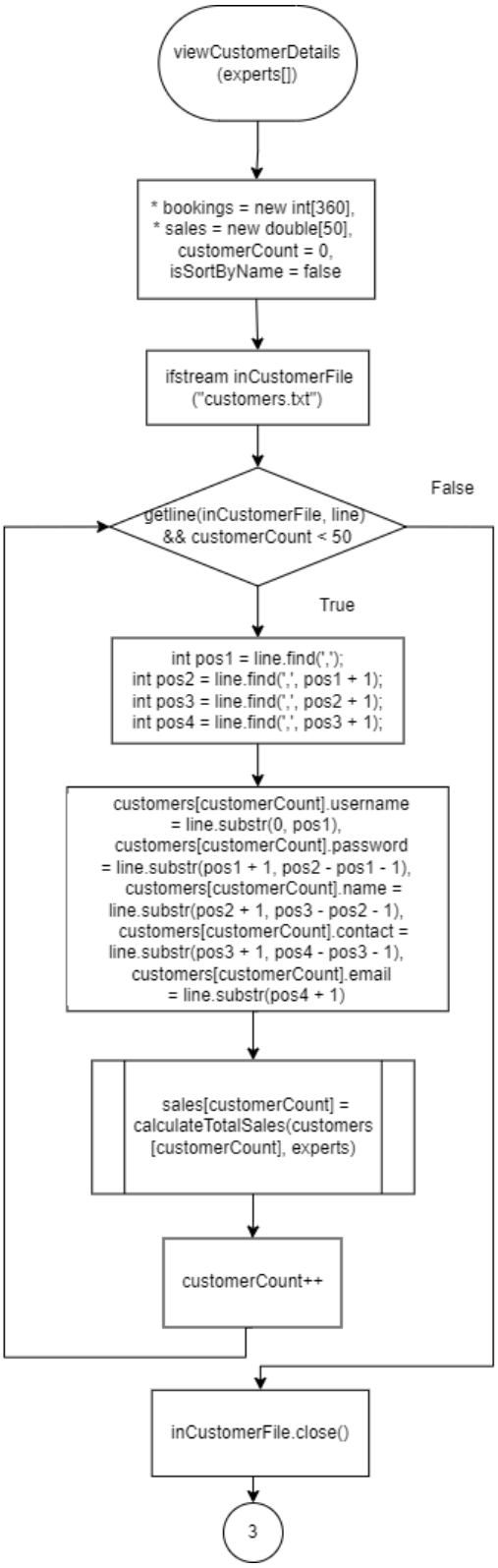
staffLogin

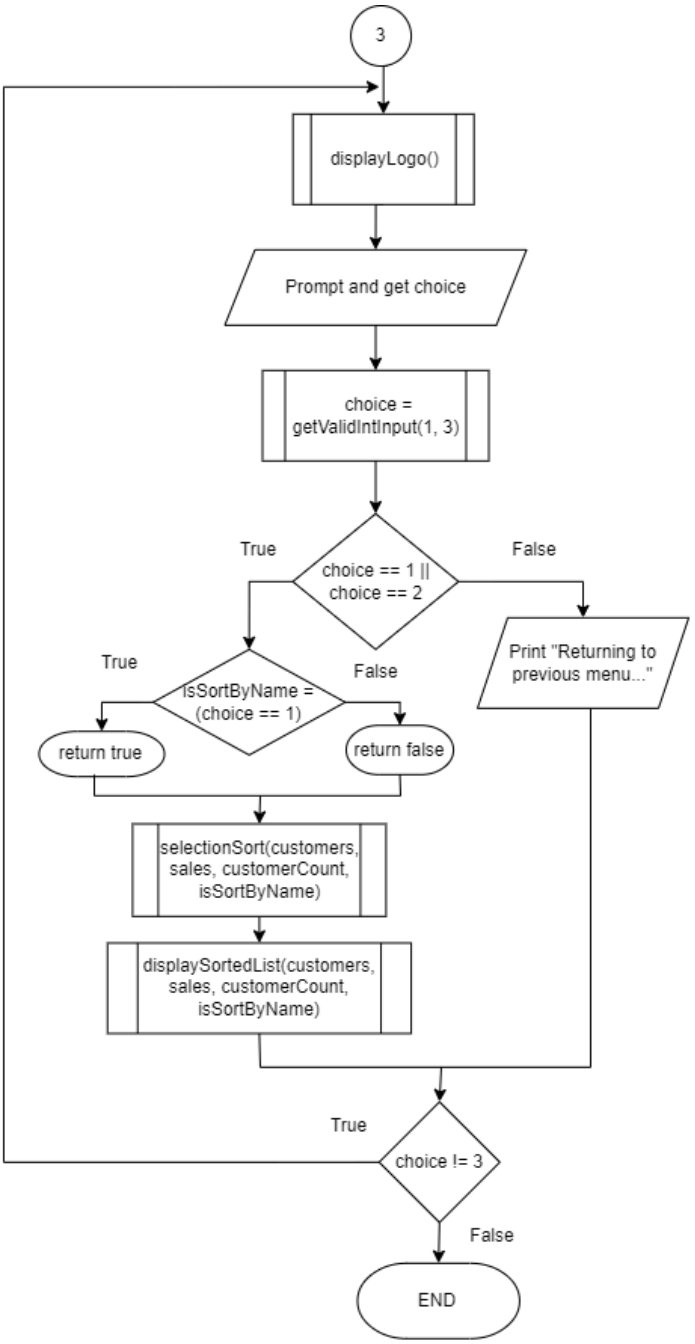

staffLogin(staffs[])
Prompt and get username
Prompt and get password
password = getHiddenPassword()
i = 0
i < 4
False
True
True
False
staffs[i].username == username && staffs[i].password == password
Display staffs[i].username
return i
i++
Print "Invalid username or password."
return -1

expertMenu

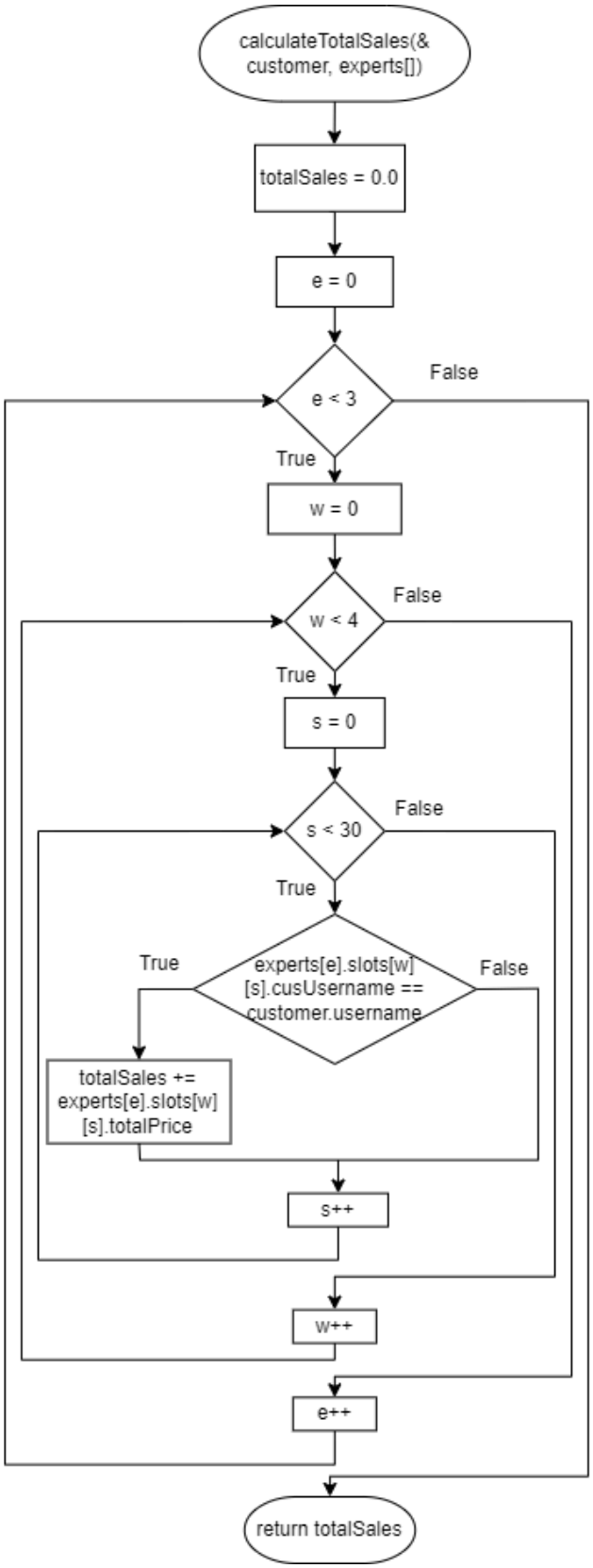

expertMenu(experts[], services[], days[], timeSlots[], staffIndex)
displayLogo()
Prompt and get choice
choice = getValidIntInput(1, 4)
choice?
1
2
3
4
default
viewCustomerDetails (experts)
viewIndividualSchedule (experts[staffIndex], days, timeSlots)
viewSalesReport (experts, services)
Print "Logging out...\n"
Print "Invalid choice. Please try again.\n"
True
choice != 4
False
END

viewCustomerDetails

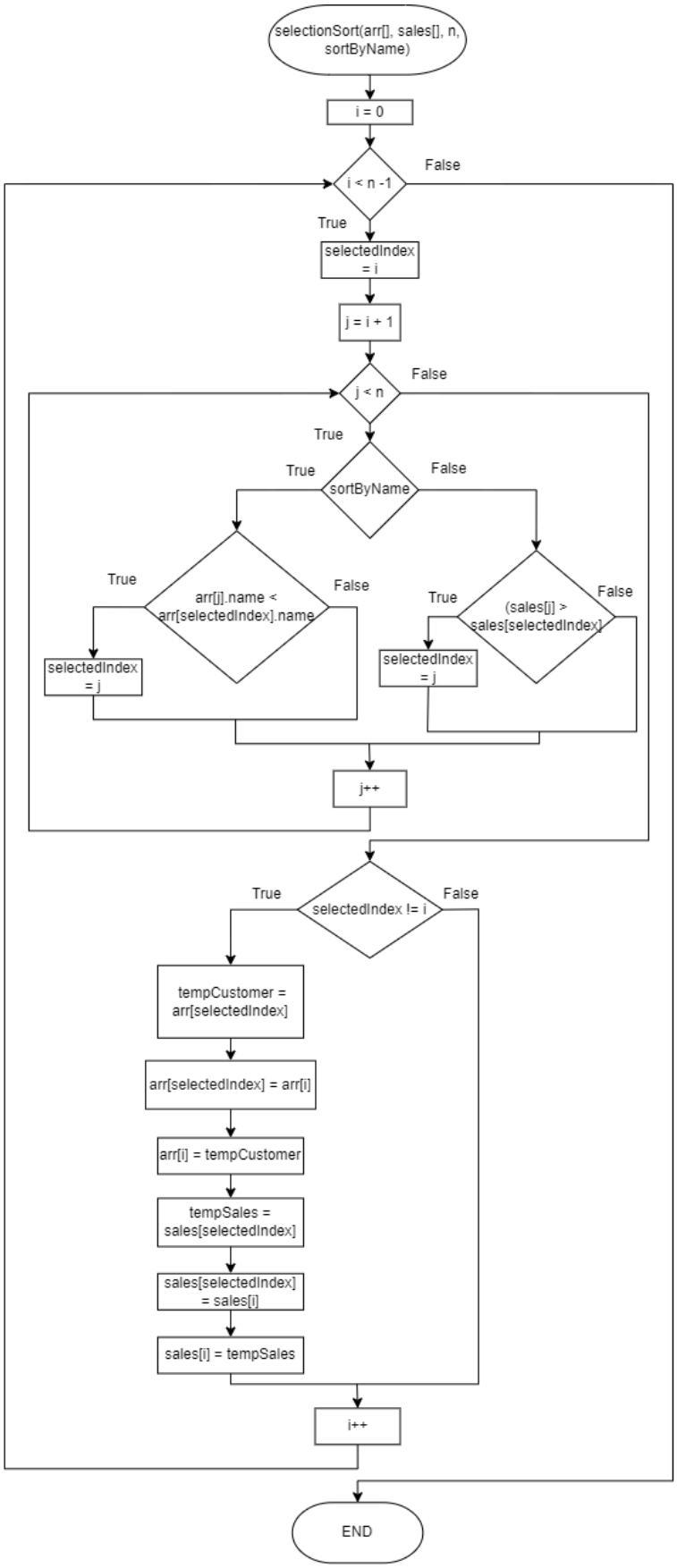




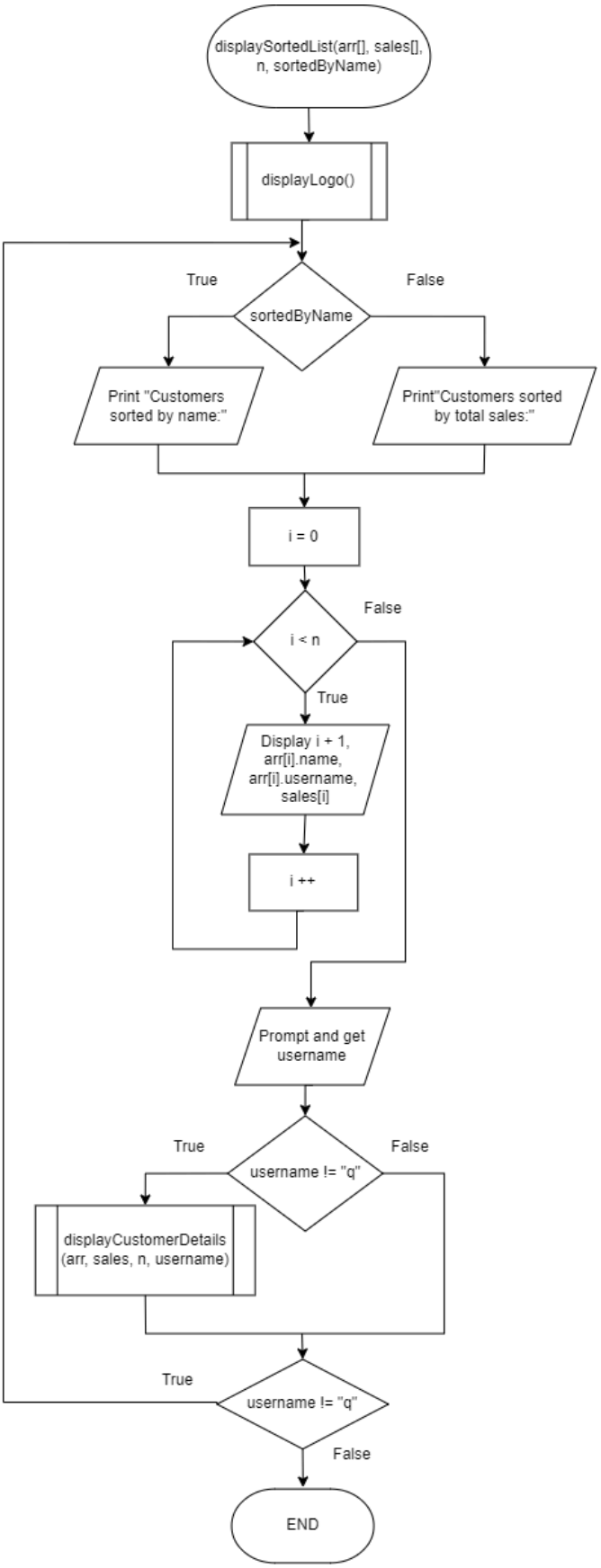
calculateTotalSales



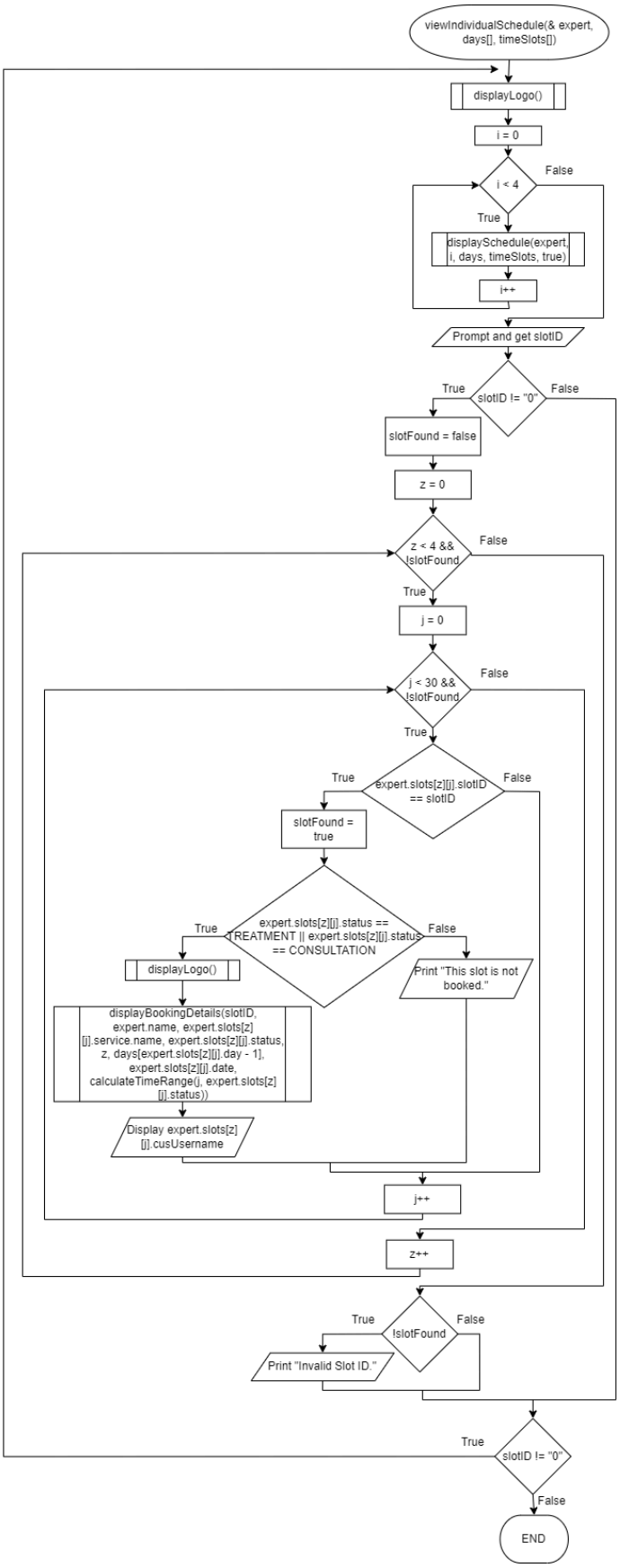
selectionSort



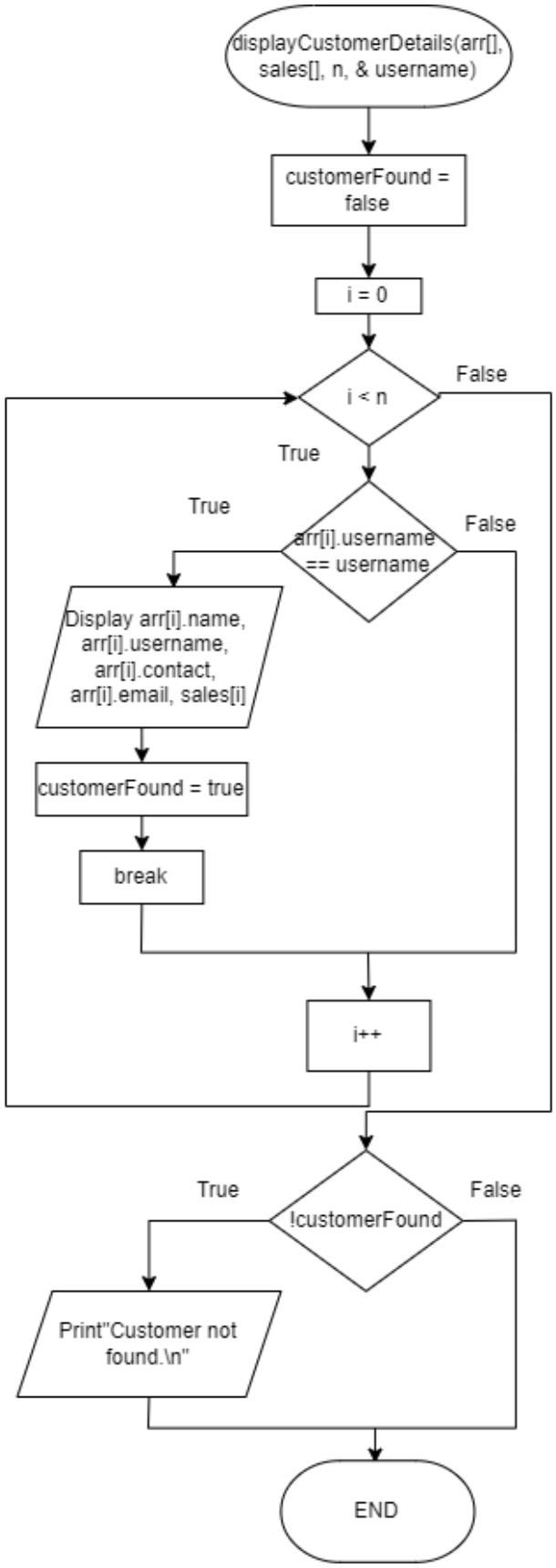
displaySortedList



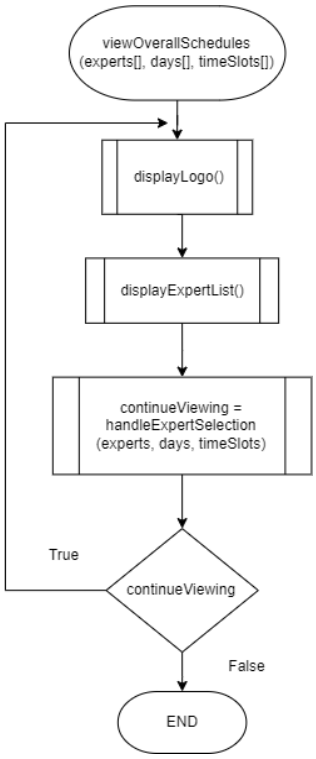
viewIndividualSchedule



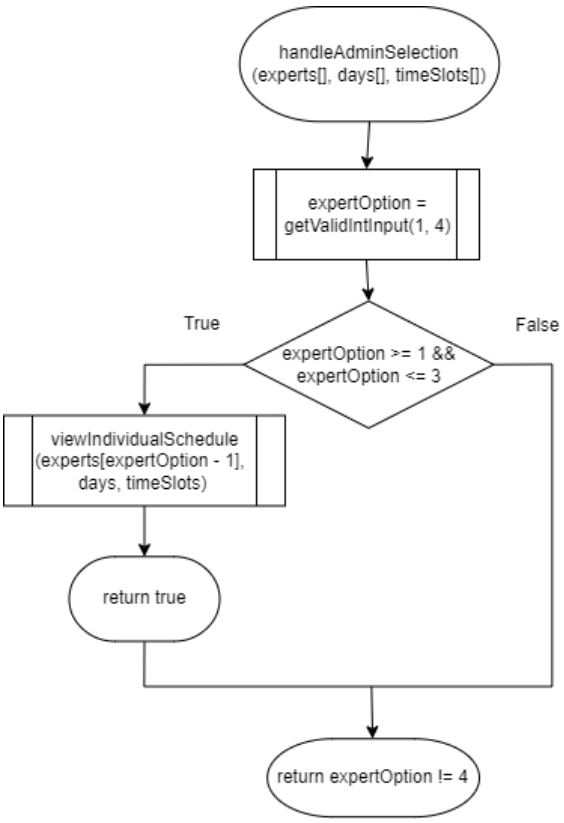
displayCustomerDetails



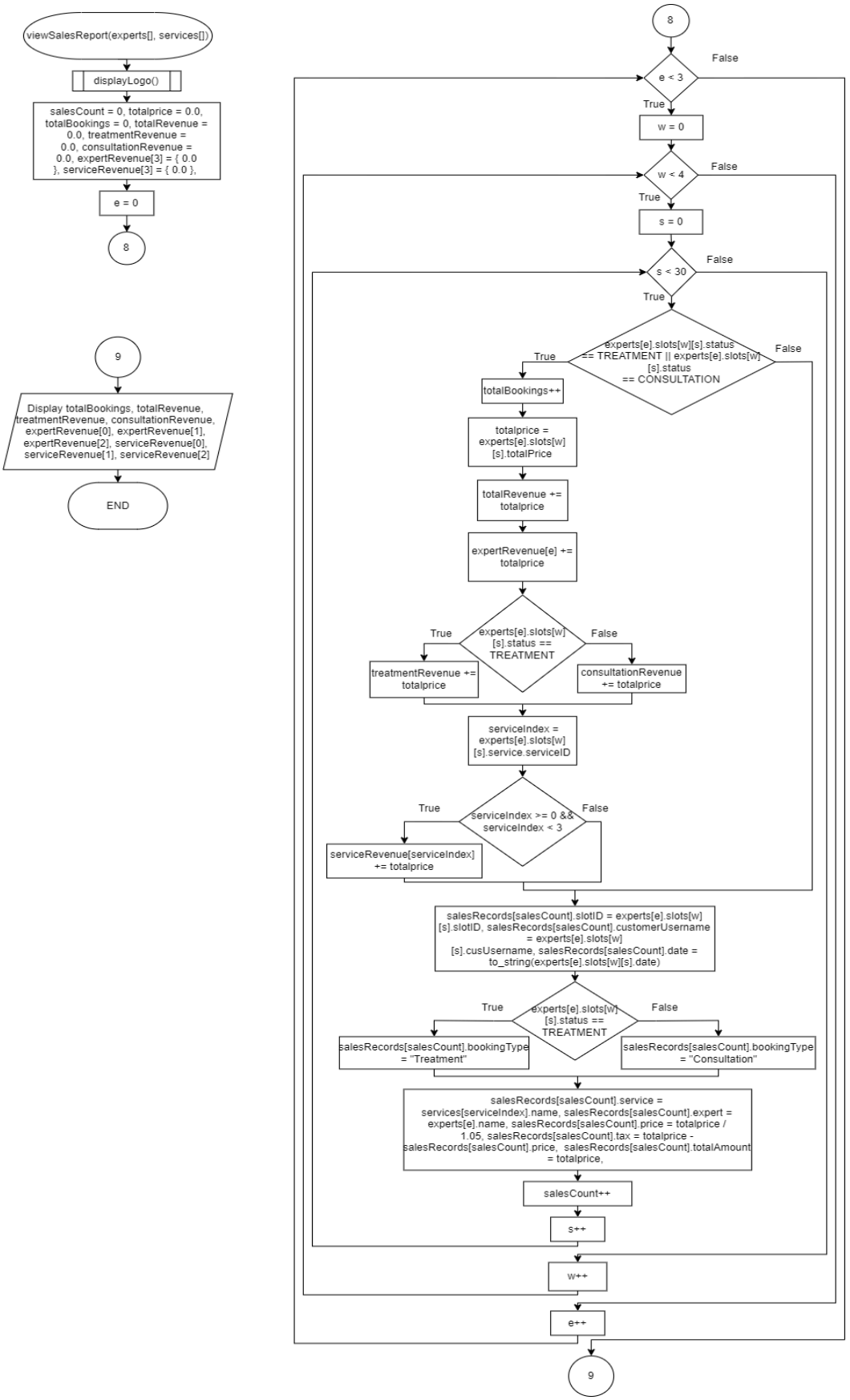
viewOverallSchedules



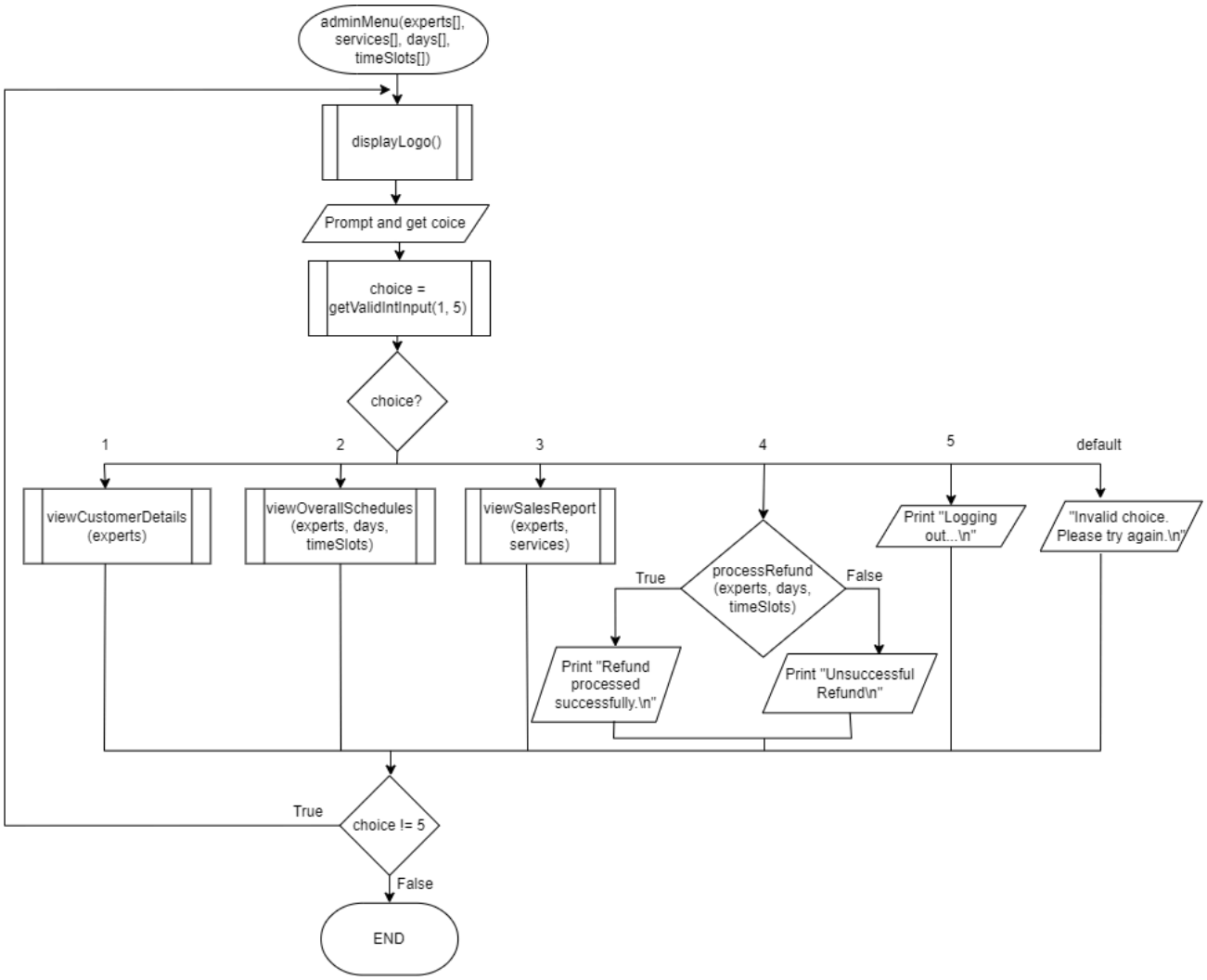
handleAdminSelection



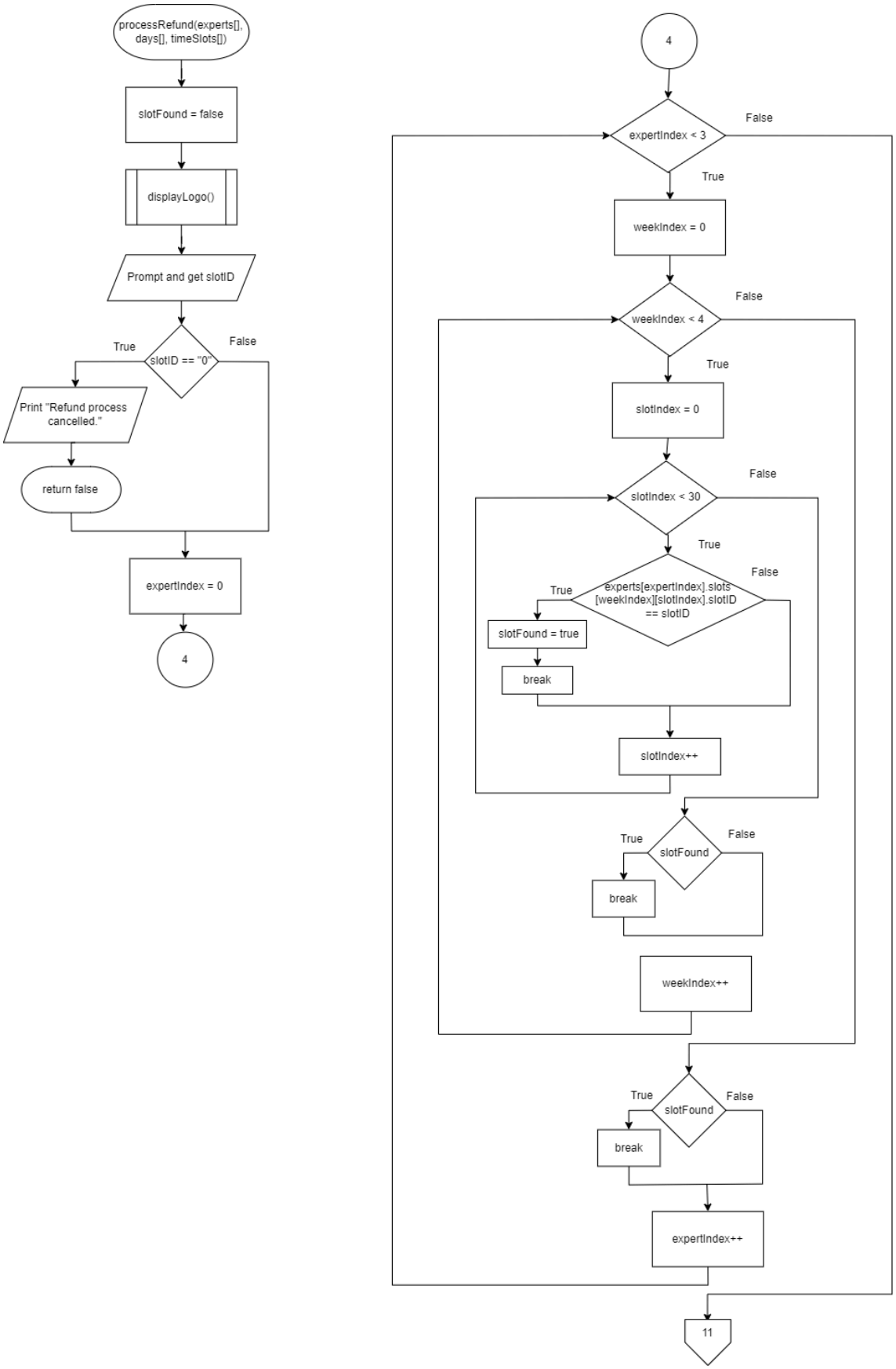
viewSalesReport

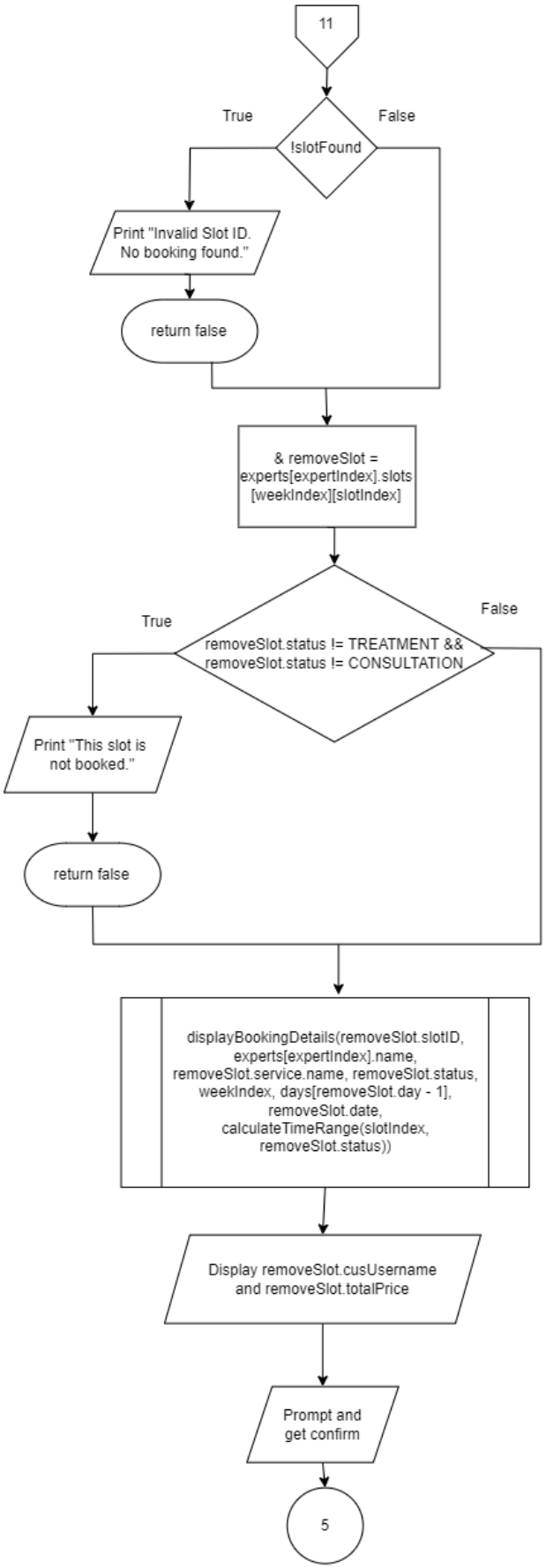


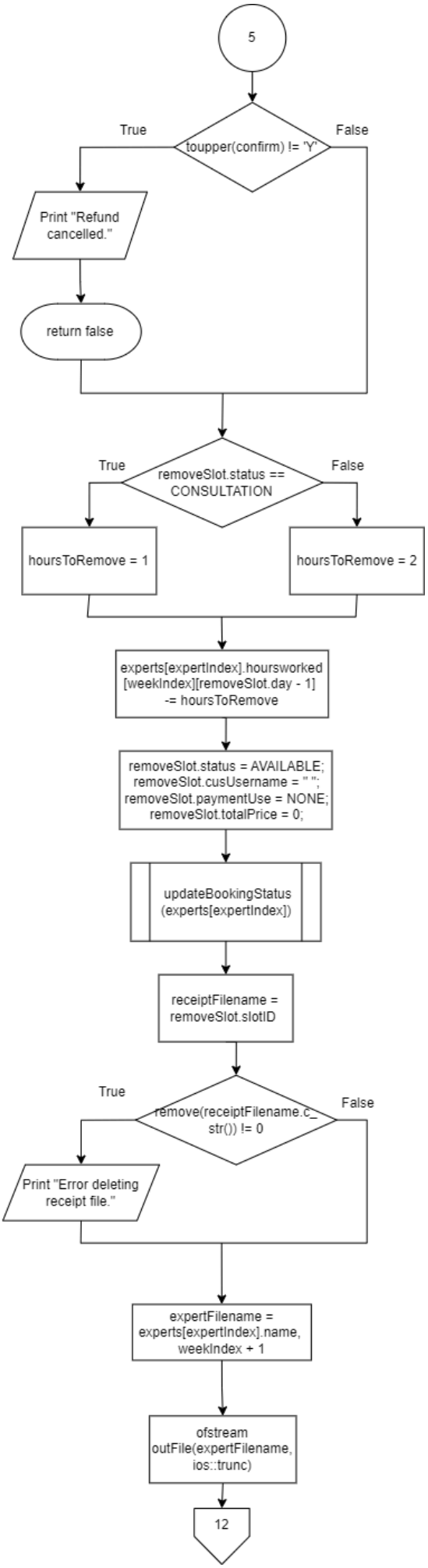
adminMenu

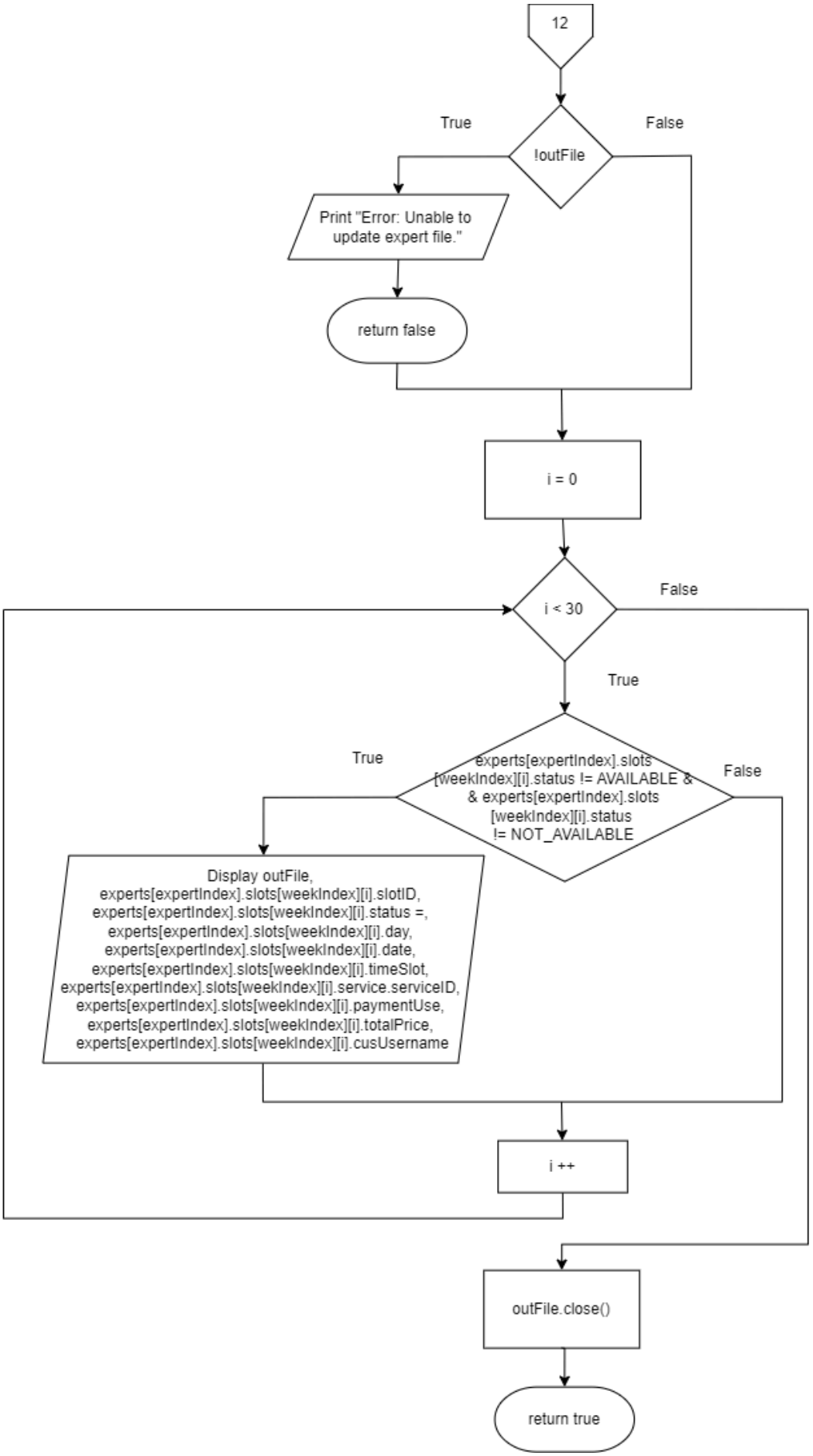

adminMenu(experts[], services[], days[], timeSlots[])
displayLogo()
Prompt and get coice
choice = getValidIntInput(1, 5)
choice?
1
2
3
4
5
default
viewCustomerDetails (experts)
viewOverallSchedules (experts, days, timeSlots)
viewSalesReport (experts, services)
processRefund (experts, days, timeSlots)
True
False
Print "Refund processed successfully.\n"
Print "Unsuccessful Refund\n"
Print "Logging out...\n"
"Invalid choice. Please try again.\n"
True
choice != 5
False
END

processRefund

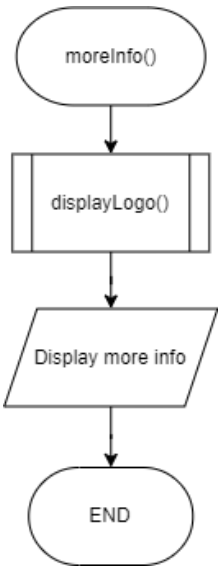



11
True
False
!slotFound
Print "Invalid Slot ID. No booking found."
return false
& removeSlot = experts[expertIndex].slots [weekIndex][slotIndex]
True
False
removeSlot.status != TREATMENT && removeSlot.status != CONSULTATION
Print "This slot is not booked."
return false
displayBookingDetails(removeSlot.slotID, experts[expertIndex].name, removeSlot.service.name, removeSlot.status, weekIndex, days[removeSlot.day - 1], removeSlot.date, calculateTimeRange(slotIndex, removeSlot.status))
Display removeSlot.cusUsername and removeSlot.totalPrice
Prompt and get confirm
5

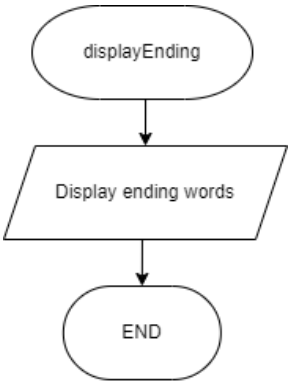

5
True
False
toupper(confirm) != 'Y'
Print "Refund cancelled."
return false
True
False
removeSlot.status == CONSULTATION
hoursToRemove = 1
hoursToRemove = 2
experts[expertIndex].hoursworked [weekIndex][removeSlot.day - 1] -= hoursToRemove
removeSlot.status = AVAILABLE; removeSlot.cusUsername = " "; removeSlot.paymentUse = NONE; removeSlot.totalPrice = 0;
updateBookingStatus (experts[expertIndex])
receiptFilename = removeSlot.slotID
True
False
remove(receiptFilename.c_str()) != 0
Print "Error deleting receipt file."
expertFilename = experts[expertIndex].name, weekIndex + 1
ofstream outFile(expertFilename, ios::trunc)
12


12
!outFile
True
False
Print "Error: Unable to update expert file."
return false
i = 0
i < 30
False
True
experts[expertIndex].slots [weekIndex][i].status != AVAILABLE & & experts[expertIndex].slots [weekIndex][i].status != NOT_AVAILABLE
True
False
Display outFile, experts[expertIndex].slots[weekIndex][i].slotID, experts[expertIndex].slots[weekIndex][i].status =, experts[expertIndex].slots[weekIndex][i].day, experts[expertIndex].slots[weekIndex][i].date, experts[expertIndex].slots[weekIndex][i].timeSlot, experts[expertIndex].slots[weekIndex][i].service.serviceID, experts[expertIndex].slots[weekIndex][i].paymentUse, experts[expertIndex].slots[weekIndex][i].totalPrice, experts[expertIndex].slots[weekIndex][i].cusUsername
i ++
outFile.close()
return true

moreInfo



displayEnding



Additional functionalities

1. **File reading and Saving functionality**

Our group is using file reading and saving functionality that is primarily used for managing customer data, expert schedules and bookings systems.

Customer data

Our customer information is stored in a file named "customers.txt". When registering a new customer (regCus function), the customer's details are appended to this file. During login (cusLogin function), the system reads from customers.txt to verify credentials. The viewCustomerDetails function read all customer data from customers.txt for displaying and sorting purpose

Expert Schedules and Bookings

Each expert has their own set of files for each week, stored in a directory structure like in Expert folder have the three expert folders which is Steve, Paul, Vernice each of them have 5 weeks of txt files. The retrieveBookings function reads these files to load existing booking into the system's memory when the program starts. When a new booking is made the booking details are appended to the appropriate expert's week file. The updateookingStatus function indirectly affects these files by updating the status of slots in memory, which are later saved back to the files.

Receipts

When a booking is made, a receipt is generated and saved as a text file in a "Receipts" directory with a filename format like "receipt_[SlotID].txt". These receipt files can be opened and viewed using the system's default text editor.

Sales Reports

The viewSalesReport function generates a summary sales report and saves it as "Sales_Report.txt".

Refunds

When processing a refund (processRefund function), the system updates the expert's week file by rewriting it entirely, excluding the refunded booking. The corresponding receipt file is also deleted during the refund process.

This approach allows the Luxury Beauty Bar application to maintain persistent data across program executions, manage multiple users and experts and provide features like booking history, sales reporting and refund processing.

Scenario 1:

User registered for an account in our Luxury Beauty Bar application and username is **jack123** and password is **Ab12345678** and the name is **Jack Tan**, contact number **012520121221**, email jack12@gmail.com.

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: jack123
Create password: **********
Enter your name: Jack Tan
Enter your phone number: 012520121221
Enter your email address: jack12@gmail.com
Registration successful! Please go to login.
Press any key to continue . . .
```

Inside the customers.txt file, As you can see once the user register success all the information will saved inside the file customers.txt.

```
customers.txt
File   Edit   View

nch123,Ab123455678,ChiaoHan,0123413323,ch12@gmail.com
minyao,Ab12345678,Hing Min Yao,0129329394,minyao98@gmail.com
daniel05,Ab12345678,Daniel Wong,01313234923,daniel123@gmail.com
my1238,Ab12345678,TohMinYang,01732324232,minyang12@gmail.com
kuan12,Ab12345678,LIMKUAN,01222192231,limkuan23@gmail.com
boonxiu,Ab12345678,Soh Boon XIu,019233211,bx@gmail.com
Yujie99,Ab12345678,Goh Yu Jie,0121454354,gyujie@gmail.com
samuel05,Ab12345678,Chew Chun Hong,0132343953,samuel09@gmail.com
Adam99,Ab123456789,Adam Ho Swee,01393994332,adam22@gmail.com
Mrloh22,Ab12345678,Loh Kian Ming,0124859323223,lohkm@hotmail.com
alston1,Ab12345678,Aston,0132982922,aston123@gmail.com
zhenhern,Ab12345678,Tham Zhen Hern,0129383932334,zhtham@gmail.com
John#123,Ab12345678,John Selva,0113043948,johnselva@gmail.com
jack123,Ab12345678,Jack Tan,012520121221,jack12@gmail.com
```

Scenario 2:

User chooses expert Vernice. Week1, Tuesday, 10:00am to 12:00 pm which is the slot ID: V009 and the user want Make up service, treatment, using e-wallet payment method

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to Book Schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 2
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Vernice Schedule:

Week 1: Available slots: 22
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 28
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 28
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 1):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           XXXX |           V007 |           V013 |           V019 |           V025 |
     10-12 |           V002 |           XXXX |           V014 |           V020 |           V026 |
     12-14 |           XXXX |           V009 |           XXXX |           XXXX |           V027 |
     14-16 |           V004 |           V010 |           V016 |           XXXX |           V028 |
     16-18 |           XXXX |           V011 |           V017 |           XXXX |           V029 |
     18-20 |           V006 |           V012 |           V018 |           V024 |           V030 |
-------------------------------------------------------------------------------------------------
     Hours |            5/6 |            2/6 |            1/6 |            3/6 |            0/6 |
-------------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: V009

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 1

Choose:
1.Treatment [2 hours]
2.Consulation [1 hours]
Do you want a treatment (1) or  consultation (2) or cancel (3)? 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|


Booking Information:
--------------------------------------------------
Booking ID: V009
--------------------------------------------------
Expert: Vernice
Service: Makeup
Type: Treatment
Week: 1, Day: Tue, Date: 2/7/2024
Duration: 2 hour(s)
Time: 12-14
--------------------------------------------------

Do you want to confirm this booking? (Y to confirm others to Cancel): y
```

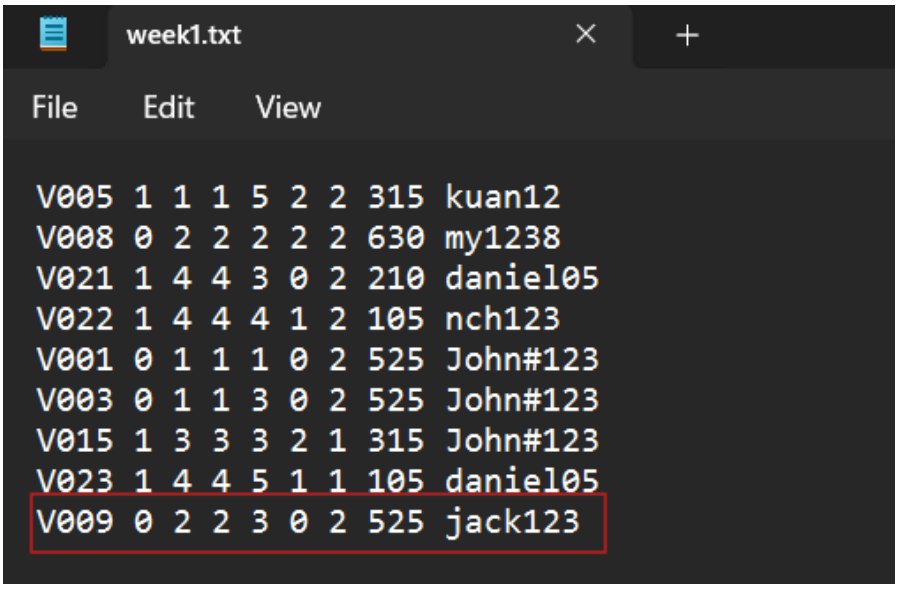
```
 _     _   ___  ___   _ ______   __  ____  _____   _   _   _ _______   __
| |   | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |   | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Payment Process
---------------
Price: RM 500.00
Booking Tax 5%: RM 25.00
Total amount: RM 525.00

Choose payment method:
1. E-Wallet
2. Online Banking
3. Credit Card
4. Cancel Payment
Enter choice (1-4) >> 1
```

```
 _     _   ___  ___   _ ______   __  ____  _____   _   _   _ _______   __
| |   | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |   | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
------------------------------
|          E-WALLET          |
------------------------------
Enter customer contact (only numbers): 01112345678
Generated OTP: 115440
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******
```

File generated: receipt_V009

```
receipt_V009.txt
File   Edit   View

-------------------------------------------------
                  LUXURY BEAUTY BAR
                    Booking Receipt
-------------------------------------------------
Receipt#: V009
Date: 2/7/2024

Customer: jack123
Expert: Vernice
Service: Makeup
Treatment
-------------------------------------------------
                            Sub Total:     500.00
                             Tax (5%):      25.00
                                TOTAL:     525.00

Payment Method: E-WALLET

Booking Details:
Week 1, Tue
Time: 12-14

Thanks for your business.
-------------------------------------------------
```

The booking information is saved into a file week1.txt which inside the folder experts > Vernice > week1.txt, and all the information that the user book is saved and then is prepared for the program to retrieve.



So now let go back to check the schedule.

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 2
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Vernice Schedule:

Week 1: Available slots: 21
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
-----------------------------------------------
Week 2: Available slots: 28
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
-----------------------------------------------
Week 3: Available slots: 28
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
-----------------------------------------------
Week 4: Available slots: 29
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
-----------------------------------------------
Enter week number [1-4/0 to Cancel] >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 1):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           XXXX |           V007 |           V013 |           V019 |           V025 |
     10-12 |           V002 |           XXXX |           V014 |           V020 |           V026 |
     12-14 |           XXXX |           XXXX |           XXXX |           XXXX |           V027 |
     14-16 |           V004 |           V010 |           V016 |           XXXX |           V028 |
     16-18 |           XXXX |           V011 |           V017 |           XXXX |           V029 |
     18-20 |           V006 |           V012 |           V018 |           V024 |           V030 |
-------------------------------------------------------------------------------------------------
     Hours |            5/6 |            4/6 |            1/6 |            3/6 |            0/6 |
-------------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

So in the picture you can see that the slot has been booked so other users cannot be booked.

Scenario 3:

Now the admin want to view the sales report and generate it staff login >> username: **Admin**, password: **admin123**

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 2

Staff Login
Enter username: Admin
Enter password: ********
Login successful. Welcome, Admin!
Press any key to continue . . .
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Admin Menu        |
----------------------------
| |1| View Customer Details |
| |2| View Overall Schedule |
| |3| View Sales Report     |
| |4| Refund Booking        |
| |5| Return & Sign Up      |
---------------------------
Enter option (1-5) >> 3
```

```
 _   _  ___  ___  _ ______  __ ____ _____   _   _  _ ______  __
| |  | | \ \/ / | |  _ \ \ / / | __ )| ____|  / \ | | | |_  _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                   Beauty Service Sales Report                                                       |
+-------------------------------------------------------------------------------------------------------------------------------------+
| Slot  | Customer        | Date       | Booking Type   | Service              | Expert          |      Price |       Tax | Total Amount |
+-------------------------------------------------------------------------------------------------------------------------------------+
| S002  | minyao          | 1/07/2024  | Consultation   | Lazer Hair Removal   | Steve           |     300.00 |     15.00 |       315.00 |
| S003  | Yujie99         | 1/07/2024  | Treatment      | Lazer Hair Removal   | Steve           |     600.00 |     30.00 |       630.00 |
| S005  | daniel05        | 1/07/2024  | Treatment      | Lazer Hair Removal   | Steve           |     600.00 |     30.00 |       630.00 |
| S006  | Adam99          | 1/07/2024  | Consultation   | Body Waxing          | Steve           |     100.00 |      5.00 |       105.00 |
| S007  | daniel05        | 2/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S008  | Adam99          | 2/07/2024  | Treatment      | Body Waxing          | Steve           |     300.00 |     15.00 |       315.00 |
| S009  | Mrloh22         | 2/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S010  | my1238          | 2/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S012  | Adam99          | 2/07/2024  | Consultation   | Lazer Hair Removal   | Steve           |     300.00 |     15.00 |       315.00 |
| S013  | samuel05        | 3/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S015  | my1238          | 3/07/2024  | Treatment      | Makeup               | Steve           |     500.00 |     25.00 |       525.00 |
| S017  | my1238          | 3/07/2024  | Treatment      | Body Waxing          | Steve           |     300.00 |     15.00 |       315.00 |
| S018  | samuel05        | 3/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S019  | Mrloh22         | 4/07/2024  | Treatment      | Body Waxing          | Steve           |     300.00 |     15.00 |       315.00 |
| S020  | Mrloh22         | 4/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S021  | my1238          | 4/07/2024  | Treatment      | Makeup               | Steve           |     500.00 |     25.00 |       525.00 |
| S022  | zhenhern        | 4/07/2024  | Consultation   | Body Waxing          | Steve           |     100.00 |      5.00 |       105.00 |
| S025  | minyao          | 5/07/2024  | Consultation   | Body Waxing          | Steve           |     100.00 |      5.00 |       105.00 |
| S026  | alston1         | 5/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S027  | alston1         | 5/07/2024  | Consultation   | Lazer Hair Removal   | Steve           |     300.00 |     15.00 |       315.00 |
| S029  | zhenhern        | 5/07/2024  | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S030  | alston1         | 5/07/2024  | Consultation   | Body Waxing          | Steve           |     100.00 |      5.00 |       105.00 |
| S031  | minyao          | 8/07/2024  | Treatment      | Makeup               | Steve           |     500.00 |     25.00 |       525.00 |
| S032  | Adam99          | 8/07/2024  | Consultation   | Body Waxing          | Steve           |     100.00 |      5.00 |       105.00 |
| S037  | daniel05        | 9/07/2024  | Treatment      | Body Waxing          | Steve           |     300.00 |     15.00 |       315.00 |
| S040  | daniel05        | 9/07/2024  | Consultation   | Lazer Hair Removal   | Steve           |     300.00 |     15.00 |       315.00 |
| S041  | John#123        | 9/07/2024  | Treatment      | Body Waxing          | Steve           |     300.00 |     15.00 |       315.00 |
| S042  | daniel05        | 9/07/2024  | Consultation   | Body Waxing          | Steve           |     100.00 |      5.00 |       105.00 |
| S051  | daniel05        | 11/07/2024 | Consultation   | Lazer Hair Removal   | Steve           |     300.00 |     15.00 |       315.00 |
| S055  | daniel05        | 12/07/2024 | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S056  | daniel05        | 12/07/2024 | Treatment      | Body Waxing          | Steve           |     300.00 |     15.00 |       315.00 |
| S057  | daniel05        | 12/07/2024 | Treatment      | Makeup               | Steve           |     500.00 |     25.00 |       525.00 |
| S064  | my1238          | 15/07/2024 | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| S069  | kuan12          | 16/07/2024 | Consultation   | Makeup               | Steve           |     200.00 |     10.00 |       210.00 |
| V001  | John#123        | 1/07/2024  | Treatment      | Makeup               | Vernice         |     500.00 |     25.00 |       525.00 |
| V003  | John#123        | 1/07/2024  | Treatment      | Makeup               | Vernice         |     500.00 |     25.00 |       525.00 |
| V005  | kuan12          | 1/07/2024  | Consultation   | Lazer Hair Removal   | Vernice         |     300.00 |     15.00 |       315.00 |
| V008  | my1238          | 2/07/2024  | Treatment      | Lazer Hair Removal   | Vernice         |     600.00 |     30.00 |       630.00 |
| V009  | jack123         | 2/07/2024  | Treatment      | Makeup               | Vernice         |     500.00 |     25.00 |       525.00 |
| V015  | John#123        | 3/07/2024  | Consultation   | Lazer Hair Removal   | Vernice         |     300.00 |     15.00 |       315.00 |
| V021  | daniel05        | 4/07/2024  | Consultation   | Makeup               | Vernice         |     200.00 |     10.00 |       210.00 |
| V022  | nch123          | 4/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |      5.00 |       105.00 |
| V023  | daniel05        | 4/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |      5.00 |       105.00 |
| V036  | Yujie99         | 8/07/2024  | Consultation   | Makeup               | Vernice         |     200.00 |     10.00 |       210.00 |
| V038  | Mrloh22         | 9/07/2024  | Consultation   | Makeup               | Vernice         |     200.00 |     10.00 |       210.00 |
| V063  | Adam99          | 15/07/2024 | Treatment      | Makeup               | Vernice         |     500.00 |     25.00 |       525.00 |
| V069  | daniel05        | 16/07/2024 | Treatment      | Body Waxing          | Vernice         |     300.00 |     15.00 |       315.00 |
| V109  | daniel05        | 25/07/2024 | Treatment      | Makeup               | Vernice         |     500.00 |     25.00 |       525.00 |
| P001  | minyao          | 1/07/2024  | Treatment      | Lazer Hair Removal   | Paul            |     600.00 |     30.00 |       630.00 |
| P002  | Yujie99         | 1/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |      5.00 |       105.00 |
| P007  | minyao          | 2/07/2024  | Consultation   | Makeup               | Paul            |     200.00 |     10.00 |       210.00 |
| P010  | Mrloh22         | 2/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |      5.00 |       105.00 |
| P011  | samuel05        | 2/07/2024  | Treatment      | Body Waxing          | Paul            |     300.00 |     15.00 |       315.00 |
| P012  | kuan12          | 2/07/2024  | Treatment      | Makeup               | Paul            |     500.00 |     25.00 |       525.00 |
| P015  | my1238          | 3/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |      5.00 |       105.00 |
| P019  | daniel05        | 4/07/2024  | Treatment      | Lazer Hair Removal   | Paul            |     600.00 |     30.00 |       630.00 |
| P022  | kuan12          | 4/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |      5.00 |       105.00 |
| P025  | kuan12          | 5/07/2024  | Treatment      | Body Waxing          | Paul            |     300.00 |     15.00 |       315.00 |
| P031  | alston1         | 8/07/2024  | Consultation   | Lazer Hair Removal   | Paul            |     300.00 |     15.00 |       315.00 |
| P037  | my1238          | 9/07/2024  | Consultation   | Lazer Hair Removal   | Paul            |     300.00 |     15.00 |       315.00 |
| P040  | Adam99          | 9/07/2024  | Treatment      | Lazer Hair Removal   | Paul            |     600.00 |     30.00 |       630.00 |
| P050  | boonxiu         | 11/07/2024 | Treatment      | Makeup               | Paul            |     500.00 |     25.00 |       525.00 |
| P060  | Adam99          | 12/07/2024 | Consultation   | Makeup               | Paul            |     200.00 |     10.00 |       210.00 |
| P075  | minyao          | 17/07/2024 | Treatment      | Makeup               | Paul            |     500.00 |     25.00 |       525.00 |
| P081  | Mrloh22         | 18/07/2024 | Treatment      | Lazer Hair Removal   | Paul            |     600.00 |     30.00 |       630.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                                                                   Total Sales:    21000.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+

Do you want to view and generate the summary sales report? (Y -> Yes/ others -> Quit): y
```

```
Sales_Report.txt
File    Edit    View

+-------------------------------------------------------------+
|          Summary Beauty Service Sales Report                |
+-------------------------------------------------------------+
| Total Summary                                               |
| Total Bookings: 65                                          |
| Total Revenue:  RM 21000.00                                 |
+-------------------------------------------------------------+
| Revenue by Booking                                          |
| Treatment:     RM 13545.00                                  |
| Consultation:  RM 7455.00                                   |
+-------------------------------------------------------------+
| Revenue by Expert                                           |
| Steve           : RM 9765.00                                |
| Vernice         : RM 5040.00                                |
| Paul            : RM 6195.00                                |
+-------------------------------------------------------------+
| Revenue by Service                                          |
| Makeup                  : RM 9660.00                        |
| Body Waxing             : RM 4095.00                        |
| Lazer Hair Removal      : RM 7245.00                        |
+-------------------------------------------------------------+
```

As you can see once the sales report are generated when the admin press y and save as Sales_Report.txt

2. Search functionality (Linear Search Algorithm)

The search functionality in our Luxury Beauty Bar application uses linear search which is implemented in a few places. The reason we use linear search algorithm is because it can adopted to work with different data structures (arrays, file lines) and search criteria (matching username/password, finding a slot ID)

Customer Login: In the cusLogin function, linear search is implicitly used to find a matching username and password. This search through each line of the customers.txt file until a match is found or the end of the file is reached.

```
while (getline(read, line)) {
    // Find the positions of commas in the line
    int pos1 = line.find(',');
    int pos2 = line.find(',', pos1 + 1);
    int pos3 = line.find(',', pos2 + 1);
    int pos4 = line.find(',', pos3 + 1);

    // Extract individual details using substr
    storedUN = line.substr(0, pos1);
    storedPW = line.substr(pos1 + 1, pos2 - pos1 - 1);
    storedName = line.substr(pos2 + 1, pos3 - pos2 - 1);
    storedContact = line.substr(pos3 + 1, pos4 - pos3 - 1);
    storedEmail = line.substr(pos4 + 1);

    if (storedUN == inputUsername && storedPW == inputPassword) {
        currentCustomer.username = storedUN;
        currentCustomer.password = storedPW;
        currentCustomer.name = storedName;
        currentCustomer.contact = storedContact;
        currentCustomer.email = storedEmail;
        found = true;
        break;
    }
}
```

Viewing Customer Appointments: The viewCustomerAppointments function uses linear search explicitly.

```
void viewCustomerAppointments(const Customer& customer, const Expert experts[], const string days[], const string timeSlots[]) {
    system("cls");
    displayLogo();
    cout << colorText("\nYour Appointments:\n\n", LIGHTYELLOW);
    bool hasAppointments = false;

    for (int e = 0; e < 3; e++) {  // Iterate through all experts
        for (int w = 0; w < 4; w++) {  // Iterate through all weeks
            int n = 30; // size of array (slots per week)
            int searchStart = 0;
            bool foundAppointments = true;

            while (foundAppointments && searchStart < n) {
                int res = linearSearch(experts[e].slots[w] + searchStart, n - searchStart, customer.username);

                if (res == -1) {
                    foundAppointments = false;  // No more appointments found in this week
                }
                else {
                    hasAppointments = true;
                    int s = searchStart + res - 1; // Adjust index

                    // Display the found appointment
                    int day = experts[e].slots[w][s].day - 1;

                    displayBookingDetails(experts[e].slots[w][s].slotID,
                        experts[e].name, experts[e].slots[w][s].service.name,
                        experts[e].slots[w][s].status, w,
                        days[day], experts[e].slots[w][s].date, calculateTimeRange(s, experts[e].slots[w][s].status));
                    cout << endl;
                    // Move search start to next position
                    searchStart = s + 1;
```

```
int linearSearch(const Booking slot[], int n, const string& val) {
    // Going through array linearly
    for (int i = 0; i < n; i++)
    {
        if (slot[i].cusUsername == val)
            return i + 1;
    }
    return -1;
}
```

This linearSearch function is called within nested loops to search for a customer's booking across all experts and weeks.

Finding a Specific Booking: In functions like makeBooking and processRefund, the linear search algorithm is used to find a specific slot by its ID.

```
//Find the slot with the given ID
for (int j = 0; j < 30; j++) {
    slotIndex = j;
    if (expert.slots[week][slotIndex].slotID == userSlotID) {
        slotFound = true;
        break;
    }
}
if (!slotFound || expert.slots[week][slotIndex].status != AVAILABLE) {
    slotFound = false;
    cout << colorText("Invalid the slot ID or the ID already booked Please Enter Again", LIGHTRED) << endl;
}
```

Scenario:

The user want to know its appointment

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> A
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Your Appointments:

-----------------------------------------------
Booking ID: V009
-----------------------------------------------
Expert: Vernice
Service: Makeup
Type: Treatment
Week: 1, Day: Tue, Date: 2/7/2024
Duration: 2 hour(s)
Time: 12-14
-----------------------------------------------

Press any key to continue . . .
```

3. Sorting functionality (Selection Sort Algorithm)

The sorting functionality in our Luxury Beauty Bar Application uses the selection sort algorithm which is implemented in the selectionSort function. The reason we use this is because the selection sort algorithm in this Luxury Beauty Bar Application provides a simple and effective way to sort customer data based on different criteria. It provides sort by name and sort by total sales based customer in the array.

```
void selectionSort(Customer arr[], double sales[], int n, bool sortByName) {
    int i, j, selectedIndex;
    for (i = 0; i < n - 1; i++) {
        selectedIndex = i;
        for (j = i + 1; j < n; j++) {
            if (sortByName) {
                if (arr[j].name < arr[selectedIndex].name)
                    selectedIndex = j;
            }
            else {
                if (sales[j] > sales[selectedIndex])
                    selectedIndex = j;
            }
        }
        if (selectedIndex != i) {
            // Swap customers
            Customer tempCustomer = arr[selectedIndex];
            arr[selectedIndex] = arr[i];
            arr[i] = tempCustomer;
            // Swap corresponding sales
            double tempSales = sales[selectedIndex];
            sales[selectedIndex] = sales[i];
            sales[i] = tempSales;
        }
    }
```

Uses it in the viewCustomerDetails function

```
if (choice == 1 || choice == 2) {
    isSortByName = (choice == 1) ? true : false;
    selectionSort(customers, sales, customerCount, isSortByName);
    displaySortedList(customers, sales, customerCount, isSortByName);
}
else {
```

Scenario 1:

Admin wants to view customer data with sort by name

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Admin Menu         |
-----------------------------
| |1| View Customer Details |
| |2| View Overall Schedule |
| |3| View Sales Report     |
| |4| Refund Booking        |
| |5| Return & Sign Up      |
----------------------------
Enter option (1-5) >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by name:

+-------------------------------------------------------------+
|No. | Name                | Username       | Total Expense  |
+-------------------------------------------------------------+
|1   | Adam Ho Swee        | Adam99         | 2205.00        |
|2   | Aston               | alston1        | 945.00         |
|3   | Chew Chun Hong      | samuel05       | 735.00         |
|4   | ChiaoHan            | nch123         | 105.00         |
|5   | Daniel Wong         | daniel05       | 4725.00        |
|6   | Goh Yu Jie          | Yujie99        | 945.00         |
|7   | Hing Min Yao        | minyao         | 2310.00        |
|8   | Jack Tan            | jack123        | 525.00         |
|9   | John Selva          | John#123       | 1680.00        |
|10  | LIMKUAN             | kuan12         | 1470.00        |
|11  | Loh Kian Ming       | Mrloh22        | 1680.00        |
|12  | Soh Boon XIu        | boonxiu        | 525.00         |
|13  | Tham Zhen Hern      | zhenhern       | 315.00         |
|14  | TohMinYang          | my1238         | 2835.00        |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return):
```

After Admin enter 1, so now the customers are sorted by name.

Scenario 2:

Admin want to views who are the customer that have top expenses

```
 _     _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |   | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |   | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >> 2
```

```
 _     _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |   | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |   | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+-------------------------------------------------------------+
|No. | Name                | Username       | Total Expense  |
+-------------------------------------------------------------+
|1   | Daniel Wong         | daniel05       | 4725.00        |
|2   | TohMinYang          | my1238         | 2835.00        |
|3   | Hing Min Yao        | minyao         | 2310.00        |
|4   | Adam Ho Swee        | Adam99         | 2205.00        |
|5   | John Selva          | John#123       | 1680.00        |
|6   | Loh Kian Ming       | Mrloh22        | 1680.00        |
|7   | LIMKUAN             | kuan12         | 1470.00        |
|8   | Goh Yu Jie          | Yujie99        | 945.00         |
|9   | Aston               | alston1        | 945.00         |
|10  | Chew Chun Hong      | samuel05       | 735.00         |
|11  | Jack Tan            | jack123        | 525.00         |
|12  | Soh Boon XIu        | boonxiu        | 525.00         |
|13  | Tham Zhen Hern      | zhenhern       | 315.00         |
|14  | ChiaoHan            | nch123         | 105.00         |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return):
```

After entering 2, Admin will be able to identify which customers have the top expenses in our Luxury Beauty Bar application.

Program Testing & Outputs

Run 1

Module	Input Data	Description	Expected Output
displayMainMenu	1	User inputs 1 to go to customer authentication page	customerAuthenticationPage
	2	User inputs 2 to show the staff login	staffLogin
	3	User inputs 3 to show more information about Luxury Beauty Bar	moreInfo
	4	User inputs 4 to exit the program	dispalyEnding
	Invalid input	User inputs non-integer values or integer outside the range of 1 - 4	An error message will be displayed telling the user to re-enter the input.

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >>
```

Input Data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Main Menu          |
-----------------------------
| 1. Customer               |
| 2. Staff                  |
| 3. More Information       |
| 4. Exit                   |
-----------------------------
Enter option (1-4) >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------------------------------------
Welcome to Luxury Beauty Bar !
--------------------------------
|  1.Login                     |
|  2.Register                  |
|  3.Return To Main Menu       |
--------------------------------
Enter option (1-3) >>
```

Input Data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Main Menu          |
-----------------------------
| 1. Customer               |
| 2. Staff                  |
| 3. More Information       |
| 4. Exit                   |
-----------------------------
Enter option (1-4) >> 2
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
--------------------------------
|        REGISTER PAGE         |
--------------------------------
| Username                     |
| - 6 to 8 character           |
| - Cannot contain space       |
| Password                     |
| - Need a Upper & Lower case  |
| - 8 to 20 character          |
--------------------------------

Create username: |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 3


 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------------------------------------------------
|                            ABOUT US                                |
----------------------------------------------------------------------
| At Luxe Beauty Bar, you'll receive a warm welcome and a luxurious    |
| escape from your daily stresses. We specialize in various services   |
| including makeup service, waxing service, and laser hair removal.    |
|                                                                      |
| Established in 2023 in the heart of Kuala Lumpur, we believe we      |
| have a responsibility to our clients - to make them look good and    |
| feel even better. Your beauty is our passion.                        |
|                                                                      |
| We encourage you to relax when you come in - sit back and sip a      |
| beverage while enjoying relaxing music and a stress-free setting.    |
| Our experts will handle all of your needs during your visit.         |
|                                                                      |
|                       Ways To Get In Touch                           |
|                                                                      |
| Contact Number: +6031352589                                          |
| Address       : No 88, Jalan Sultan Ismail, Taman Bunga Raya,        |
|                 50250 Kuala Lumpur, Malaysia                         |
| Email         : luxebeautybar88@gmail.com                            |
|                                                                      |
|For more information, visit our shop or contact us via email or phone.|
----------------------------------------------------------------------
Press any key to continue . . .
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 4
```

```
 _____ _   _   _   _  _ _ ______   _____ ___  ____  __    _____ ____ ___ _____
|_   _| | | |  / \  | \ | |/ / ___|  |  ___/ _ \|  _ \  \ \  / /_ _/ ___|_ _|_   _|
  | | | |_| | / _ \ |  \| | ' /\___ \  | |_ | | | | |_) |  \ \ / / | |\___ \| |  | |
  | | |  _  |/ ___ \| |\  | . \ ___) | |  _|| |_| |  _ <    \ V /  | | ___) | |  | |
 _|_|_|_| |_/_/   \_\_| \_|_|\_\____/ _|_|_ _\___/|_|_\_\_   \_/_ |___|____/___|_|_|
| | | |  / \ \  / / ____|   / \   | \ | |_ _/ ___| ____| |  _ \  / \ \ / / | |
| |_| | / _ \ \ / /|  _|    / _ \  |  \| || | |   |  _|   | | | |/ _ \ V /  | |
|  _  |/ ___ \ V / | |___  / ___ \ | |\  || | |___| |___  | |_| / ___ \| |  |_|
|_| |_/_/   \_\_/  |_____| /_/   \_\ |_| \_|___\____|_____| |____/_/   \_\_|  (_)

Exiting.....
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____   _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> a
Invalid input. Please enter a number between 1 and 4: @
Invalid input. Please enter a number between 1 and 4: 5
Invalid input. Please enter a number between 1 and 4:
```

Run 2

Module	Input Data	Description	Expected Output
customerAuthentication Page	1	User inputs 1 to go to customer login page	cusLogin
	2	User inputs 2 to go to customer register page	regCus
	3	User inputs 3 to go back to the main menu page	displayMainMenu
	Invalid input	User inputs non-integer values or integer outside the range of 1 - 3	An error message will be displayed telling the user to re-enter the input.

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
--------------------------------------------------------------------------
Welcome to Luxury Beauty Bar !
-------------------------------
|  1.Login                    |
|  2.Register                 |
|  3.Return To Main Menu      |
-------------------------------
Enter option (1-3) >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
--------------------------------------------------------------------------
Welcome to Luxury Beauty Bar !
-------------------------------
|  1.Login                    |
|  2.Register                 |
|  3.Return To Main Menu      |
-------------------------------
Enter option (1-3) >> 1


 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        LOGIN PAGE        |
----------------------------
Enter your username: |
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
--------------------------------------------------------------------------
Welcome to Luxury Beauty Bar !
-------------------------------
|  1.Login                    |
|  2.Register                 |
|  3.Return To Main Menu      |
-------------------------------
Enter option (1-3) >> 2
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------------------------------------
Welcome to Luxury Beauty Bar !
-------------------------------
|  1.Login                    |
|  2.Register                 |
|  3.Return To Main Menu      |
-------------------------------
Enter option (1-3) >> 3|


 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> |
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------------------------------------
Welcome to Luxury Beauty Bar !
-------------------------------
|  1.Login                    |
|  2.Register                 |
|  3.Return To Main Menu      |
-------------------------------
Enter option (1-3) >> 4
Invalid input. Please enter a number between 1 and 3: @
Invalid input. Please enter a number between 1 and 3: a
Invalid input. Please enter a number between 1 and 3:
```

Run 3

Module	Input Data	Description	Expected Output
regCus	Valid input: Username: chiao05 Password: Ab12345678 Name:chiaohan Contact: 0123456789 Email: chiaohan@gmail.com	User inputs all the register information according to the correct format	customerAuthenticationPage
	Invalid Username: chiao han ch05 chiaohan05	User inputs invalid username	Error message will be displayed and ask user to re-enter the input
	Invalid Password: ab12345678 AB12345678 ab1234 ab1234567890123456789	User inputs invalid password	Error message displayed and ask user to input again
	Invalid Name: ch chiaohanchiaohanchiaohanchiaohan chiaohan123 chiaohan@123	User inputs invalid name	Error message displayed and ask user to re-enter the input
	Invalid Contact: 0123 01234567890987654 abc123 #123 1 2 3	User inputs invalid contact number	Error message displayed and ask user to re-enter the input

	Invalid Email: chiaohan	User inputs invalid email	Error message displayed and ask user to re-enter the input
	Exist Username: chiao05	User inputs username that already exists	Error message displayed and ask user to enter a different email

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username:
```

Input data: valid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: 0123456789
Enter your email address: chiaohan@gmail.com
Registration successful! Please go to login.
Press any key to continue . . .
```

Input data: invalid username

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao han
Username must be in between 6 to 8 characters
Username cannot contain space
Create username: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: ch05
Username must be in between 6 to 8 characters
Username cannot contain space
Create username:
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiaohan05
Username must be in between 6 to 8 characters
Username cannot contain space
Create username:
```

Input data: invalid password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Password must be at least 8 characters long and cannot exceed 20 characters.
Password must contain at least one uppercase and one lowercase letter.
Create password:
```


```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Password must be at least 8 characters long and cannot exceed 20 characters.
Password must contain at least one uppercase and one lowercase letter.
Create password:
```


```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: ******
Password must be at least 8 characters long and cannot exceed 20 characters.
Password must contain at least one uppercase and one lowercase letter.
Create password: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: *********************
Password must be at least 8 characters long and cannot exceed 20 characters.
Password must contain at least one uppercase and one lowercase letter.
Create password:
```

Input data: invalid name

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: ch
Name must be between 3 and 30 characters long.
Name can only contain letters and spaces.
Enter your name: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiaohan123
Name must be between 3 and 30 characters long.
Name can only contain letters and spaces.
Enter your name:
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiaohanchiaohanchiaohanchiaohan
Name must be between 3 and 30 characters long.
Name can only contain letters and spaces.
Enter your name: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiaohan@123
Name must be between 3 and 30 characters long.
Name can only contain letters and spaces.
Enter your name: |
```

Input data: invalid contact

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: 0123
Contact number can only contain digits.
Must between (10-15) digits
Enter your phone number: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: 01234567890987654
Contact number can only contain digits.
Must between (10-15) digits
Enter your phone number: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: ab123
Contact number can only contain digits.
Must between (10-15) digits
Enter your phone number: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: #123
Contact number can only contain digits.
Must between (10-15) digits
Enter your phone number:
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: 1 2 3
Contact number can only contain digits.
Must between (10-15) digits
Enter your phone number:
```

Input data: invalid email

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Create password: **********
Enter your name: chiao han
Enter your phone number: 0123456789
Enter your email address: chiaohan
Invalid email format. Please enter a valid email address.
Enter your email address: |
```

Input data: exist username - chiao05

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|        REGISTER PAGE        |
-------------------------------
| Username                    |
| - 6 to 8 character          |
| - Cannot contain space      |
| Password                    |
| - Need a Upper & Lower case |
| - 8 to 20 character         |
-------------------------------

Create username: chiao05
Username already exists. Please choose a different username.
Create username: |
```

Run 4

Module	Input Data	Description	Expected Output
cusLogin	Valid input: Username: chiao05 Password: Ab12345678	User inputs all the correct credentials for logging in	displayCustomerMenu
	Invalid Username: chiao123 Valid Password: Ab12345678	User inputs wrong credentials for logging in	Error message displayed and go back to the customerAuthentication Page
	Username: chiao05 Invalid Password: ab123	User inputs wrong credentials for logging in	Error message displayed and go back to the customerAuthentication Page
	Invalid Username: chiao123 Invalid Password: ab123	User inputs wrong credentials for logging in	Error message displayed and go back to the customerAuthentication Page

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        LOGIN PAGE        |
----------------------------
Enter your username: |
```

Input data: valid data

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        LOGIN PAGE        |
----------------------------
Enter your username: chiao05
Enter your password: **********
Login successful!
Press any key to continue . . .
```

Input data: invalid username, valid password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        LOGIN PAGE        |
----------------------------
Enter your username: chiao123
Enter your password: **********
Invalid username or password.
Press any key to continue . . .
```

Input data: valid username, invalid password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        LOGIN PAGE        |
----------------------------
Enter your username: chiao05
Enter your password: *****
Invalid username or password.
Press any key to continue . . .
```

Input data: invalid username and password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        LOGIN PAGE        |
----------------------------
Enter your username: chiao123
Enter your password: *****
Invalid username or password.
Press any key to continue . . .
```

Run 5

Module	Input Data	Description	Expected Output
displayCustomerMenu	‘S’ or ‘s’	User inputs ‘S’ or ‘s’ to view the service page	displayServiceList
	‘E’ or ‘e’	User inputs ‘E’ or ‘e’ to view the expert page	displayExpertList
	‘C’ or ‘c’	User inputs ‘C’ or ‘c’ to check the schedule	displayExpertList
	‘B’ or ‘b’	User inputs ‘B’ or ‘b’ to book the service	displayExpertList
	‘A’ or ‘a’	User inputs ‘A’ or ‘a’ to view appointment	viewCustomerAppointments
	‘R’ or ‘r’	User inputs ‘R’ or ‘r’ to sign out and return	displayMainMenu
	1	User inputs integer values	Error message displayed and ask user to re-enter the input
	#	User inputs symbols or special characters	Error message displayed and ask user to re-enter the input
	‘X’	User inputs other characters	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >>
```

Input data: ‘S’ or ‘s’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> S
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> s
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >>
```

Input data: ‘E’ or ‘e’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert          |
| |C| Check Schedule       |
| |B| Book Service         |
| |A| View Appointment     |
| |R| Sign Out and Return  |
----------------------------
Enter option [S/E/C/B/A/R] >> E
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert          |
| |C| Check Schedule       |
| |B| Book Service         |
| |A| View Appointment     |
| |R| Sign Out and Return  |
----------------------------
Enter option [S/E/C/B/A/R] >> e
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >>
```

Input data: ‘C’ or ‘c’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert          |
| |C| Check Schedule       |
| |B| Book Service         |
| |A| View Appointment     |
| |R| Sign Out and Return  |
----------------------------
Enter option [S/E/C/B/A/R] >> C
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> c
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >>
```

Input data: ‘B’ or ‘b’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> B
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> b
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to Book Schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> |
```

Input data: ‘A’ or ‘a’

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> A

 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> a

 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Your Appointments:

You have no appointments booked.

Press any key to continue . . .
```

Input data: 'R' or 'r'

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> R
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> r
Logging Out....
Press any key to continue . . .
```

Input data: invalid option - 1, 'X', #

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> 1
Invalid option. Please try again enter a character |S|E|C|B|A|R|: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert          |
| |C| Check Schedule       |
| |B| Book Service         |
| |A| View Appointment     |
| |R| Sign Out and Return  |
----------------------------
Enter option [S/E/C/B/A/R] >> X
Invalid option. Please try again enter a character |S|E|C|B|A|R|: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert          |
| |C| Check Schedule       |
| |B| Book Service         |
| |A| View Appointment     |
| |R| Sign Out and Return  |
----------------------------
Enter option [S/E/C/B/A/R] >> #
Invalid option. Please try again enter a character |S|E|C|B|A|R|: |
```

Run 6 (customerInput = ‘S’ or ‘s’)

Module	Input Data	Description	Expected Output
displayServiceList	1	User inputs 1 to go to the service1 info page	displayService1Info
	2	User inputs 2 to go to the service2 info page	displayService2Info
	3	User inputs 3 to go to the service3 info page	displayService3Info
	4	User inputs 4 to go back to the customer menu page	displayCustomerMenu

	invalid input	User inputs non-integer values or integer outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >> 1

 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
                 ------------------------------
                 |      Makeup Service        |
                 ------------------------------
                 | Cosmetic application for   |
                 | events like weddings and   |
                 | photoshoots, tailored to   |
                 | or transform appearance.   |
                 ------------------------------
                 | Consultation Price: RM 200 |
                 | Treatment Price: RM 500    |
                 ----------------------------

Press any key to continue . . .
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >> 2
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
                 -------------------------------
                 |      Body Waxing            |
                 -------------------------------
                 | Body waxing removes hair by |
                 | applying warm and pulling   |
                 | it out from the roots,      |
                 | leaving smooth skin for     |
                 | weeks.Common areas include  |
                 | the face,body, and bikini   |
                 | line.Regular waxing can     |
                 | result in finer hair growth |
                 -------------------------------
                 | Consultation Price: RM 100  |
                 | Treatment Price: RM 300     |
                 ----------------------------

Press any key to continue . . .
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >> 3
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
                 -------------------------------
                 |      Lazer Hair Removal     |
                 -------------------------------
                 | Laser hair removal uses     |
                 | light to target and damage  |
                 | hairfollicle, reducing hair |
                 | growth.It's effective on    |
                 | various areas, requires     |
                 | multiple sessions, and lead |
                 | to finer, slower regrowth   |
                 | over time.                  |
                 -------------------------------
                 | Consultation Price: RM 300  |
                 | Treatment Price: RM 600     |
                 -------------------------------

Press any key to continue . . .
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >> 4
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >>
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Service List       |
----------------------------
| 1. Makeup Service        |
| 2. Waxing                |
| 3. Laser Hair Removal    |
| 4. Return                |
----------------------------
Enter option (1-4) >> 5
Invalid input. Please enter a number between 1 and 4: @
Invalid input. Please enter a number between 1 and 4: a
Invalid input. Please enter a number between 1 and 4: |
```

Run 7 (customerInput = ‘E’ or ‘e’)

Module	Input Data	Description	Expected Output
displayExpertList	1	User inputs 1 to go to the expert info page	displayExpertInfo
	2	User inputs 2 to go to the expert info page	displayExpertInfo
	3	User inputs 3 to go to the expert info page	displayExpertInfo
	4	User inputs 4 to go back to the customer menu page	displayCustomerMenu
	invalid output	User inputs non-integer values or integer outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >>
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------------
Expert Name      : Steve
Age              : 35
Gender           : Male
Experience       : 10+ years
Education        : Universiti Teknologi MARA (UiTM)
-------------------------------------------------------
Press any key to continue . . .
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 2
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------------
Expert Name      : Vernice
Age              : 28
Gender           : Female
Experience       : 7 years
Education        : Universiti Kebangsaan Malaysia (UKM)
-------------------------------------------------------
Press any key to continue . . .
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 3
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------------
Expert Name      : Paul
Age              : 40
Gender           : Male
Experience       : 15 years
Education        : Universiti Malaya (UM)
-------------------------------------------------------
Press any key to continue . . .
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 4
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >> |
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> a
Invalid input. Please enter a number between 1 and 4: 5
Invalid input. Please enter a number between 1 and 4: @
Invalid input. Please enter a number between 1 and 4:
```

Run 8 (customerInput = ‘C’ or ‘c’)

Module	Input Data	Description	Expected Output
displayExpertList	1	User inputs 1 to go to the expert schedule page	displayExpertInfo
	2	User inputs 2 to go to the expert schedule page	displayExpertInfo
	3	User inputs 3 to go to the expert schedule page	displayExpertInfo
	4	User inputs 4 to go back to the customer menu page	displayCustomerMenu

	invalid input	User inputs non-integer values or integer outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 1|
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >>
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 2


 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Vernice Schedule:

Week 1: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 24
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 28
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >>
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 3
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Paul Schedule:

Week 1: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 28
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 29
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >>
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 4
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to view their schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 5
Invalid input. Please enter a number between 1 and 4: @
Invalid input. Please enter a number between 1 and 4: b
Invalid input. Please enter a number between 1 and 4:
```

Run 9 (customerInput = ‘C’ or ‘c’ and expertChoice = 1)

Module	Input Data	Description	Expected Output
displayWeekAndSelect	1	User inputs 1 to go to the expert week 1 schedule page	displaySchedule
	2	User inputs 2 to go to the expert week 2 schedule page	displaySchedule
	3	User inputs 3 to go to the expert week 3 schedule page	displaySchedule
	4	User inputs 4 to go to the expert week 4 schedule page	displaySchedule
	0	User inputs 0 to cancel	displayCustomerMenu
	invalid input	User inputs non-integer values or integer outside the range of 0 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____   _   _   _ _______  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____   _   _   _ _______  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      1/7/2024 |      2/7/2024 |      3/7/2024 |      4/7/2024 |      5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          S001 |          S007 |          S013 |          S019 |          S025 |
     10-12 |          S002 |          S008 |          S014 |          S020 |          S026 |
     12-14 |          S003 |          S009 |          S015 |          S021 |          S027 |
     14-16 |          S004 |          S010 |          S016 |          S022 |          S028 |
     16-18 |          S005 |          S011 |          S017 |          S023 |          S029 |
     18-20 |          S006 |          S012 |          S018 |          S024 |          S030 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . . |
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____   _   _   _ _______  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 2):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      8/7/2024 |      9/7/2024 |     10/7/2024 |     11/7/2024 |     12/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          S031 |          S037 |          S043 |          S049 |          S055 |
     10-12 |          S032 |          S038 |          S044 |          S050 |          S056 |
     12-14 |          S033 |          S039 |          S045 |          S051 |          S057 |
     14-16 |          S034 |          S040 |          S046 |          S052 |          S058 |
     16-18 |          S035 |          S041 |          S047 |          S053 |          S059 |
     18-20 |          S036 |          S042 |          S048 |          S054 |          S060 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . . |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 3):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      15/7/2024 |      16/7/2024 |      17/7/2024 |      18/7/2024 |      19/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           S061 |           S067 |           S073 |           S079 |           S085 |
     10-12 |           S062 |           S068 |           S074 |           S080 |           S086 |
     12-14 |           S063 |           S069 |           S075 |           S081 |           S087 |
     14-16 |           S064 |           S070 |           S076 |           S082 |           S088 |
     16-18 |           S065 |           S071 |           S077 |           S083 |           S089 |
     18-20 |           S066 |           S072 |           S078 |           S084 |           S090 |
-------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 4):
--------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      22/7/2024 |      23/7/2024 |      24/7/2024 |      25/7/2024 |      26/7/2024 |
--------------------------------------------------------------------------------------------
      8-10 |           S091 |           S097 |           S103 |           S109 |           S115 |
     10-12 |           S092 |           S098 |           S104 |           S110 |           S116 |
     12-14 |           S093 |           S099 |           S105 |           S111 |           S117 |
     14-16 |           S094 |           S100 |           S106 |           S112 |           S118 |
     16-18 |           S095 |           S101 |           S107 |           S113 |           S119 |
     18-20 |           S096 |           S102 |           S108 |           S114 |           S120 |
--------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
--------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 0

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
----------------------------
Enter option [S/E/C/B/A/R] >>
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >> a
Invalid input. Please enter a number between 0 and 4: @
Invalid input. Please enter a number between 0 and 4: |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >> 5
Invalid input. Please enter a number between 0 and 4: |
```

Run 10 (customerInput = ‘C’ or ‘c’ and expertChoice = 2)

Module	Input Data	Description	Expected Output
displayWeekAndSelect	1	User inputs 1 to go to the expert week 1 schedule page	displaySchedule
	2	User inputs 2 to go to the expert week 2 schedule page	displaySchedule
	3	User inputs 3 to go to the expert week 3 schedule page	displaySchedule
	4	User inputs 4 to go to the expert week 4 schedule page	displaySchedule
	0	User inputs 0 to cancel	displayCustomerMenu
	invalid input	User inputs non-integer values or integer outside the range of 0 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____ _____   _    _  _ _______  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Vernice Schedule:

Week 1: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
-----------------------------------------------
Week 2: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
-----------------------------------------------
Week 3: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
-----------------------------------------------
Week 4: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
-----------------------------------------------
Enter week number [1-4/0 to Cancel] >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \  | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 1):
-----------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-----------------------------------------------------------------------------------------------
      8-10 |           V001 |           V007 |           V013 |           V019 |           V025 |
     10-12 |           V002 |           V008 |           V014 |           V020 |           V026 |
     12-14 |           V003 |           V009 |           V015 |           V021 |           V027 |
     14-16 |           V004 |           V010 |           V016 |           V022 |           V028 |
     16-18 |           V005 |           V011 |           V017 |           V023 |           V029 |
     18-20 |           V006 |           V012 |           V018 |           V024 |           V030 |
-----------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-----------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \  | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 2):
------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       8/7/2024 |       9/7/2024 |      10/7/2024 |      11/7/2024 |      12/7/2024 |
------------------------------------------------------------------------------------------------
      8-10 |           V031 |           V037 |           V043 |           V049 |           V055 |
     10-12 |           V032 |           V038 |           V044 |           V050 |           V056 |
     12-14 |           V033 |           V039 |           V045 |           V051 |           V057 |
     14-16 |           V034 |           V040 |           V046 |           V052 |           V058 |
     16-18 |           V035 |           V041 |           V047 |           V053 |           V059 |
     18-20 |           V036 |           V042 |           V048 |           V054 |           V060 |
------------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
------------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \  | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 3):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      15/7/2024 |      16/7/2024 |      17/7/2024 |      18/7/2024 |      19/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           V061 |           V067 |           V073 |           V079 |           V085 |
     10-12 |           V062 |           V068 |           V074 |           V080 |           V086 |
     12-14 |           V063 |           V069 |           V075 |           V081 |           V087 |
     14-16 |           V064 |           V070 |           V076 |           V082 |           V088 |
     16-18 |           V065 |           V071 |           V077 |           V083 |           V089 |
     18-20 |           V066 |           V072 |           V078 |           V084 |           V090 |
-------------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 4):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      22/7/2024 |      23/7/2024 |      24/7/2024 |      25/7/2024 |      26/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          V091 |          V097 |          V103 |          V109 |          V115 |
     10-12 |          V092 |          V098 |          V104 |          V110 |          V116 |
     12-14 |          V093 |          V099 |          V105 |          V111 |          V117 |
     14-16 |          V094 |          V100 |          V106 |          V112 |          V118 |
     16-18 |          V095 |          V101 |          V107 |          V113 |          V119 |
     18-20 |          V096 |          V102 |          V108 |          V114 |          V120 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 0

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|      Customer Menu        |
-----------------------------
| |S| View Service          |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
-----------------------------
Enter option [S/E/C/B/A/R] >>
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Vernice Schedule:

Week 1: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
---------------------------------------------
Week 2: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >> a
Invalid input. Please enter a number between 0 and 4: @
Invalid input. Please enter a number between 0 and 4: 5
Invalid input. Please enter a number between 0 and 4:
```

Run 11 (customerInput = ‘C’ or ‘c’ and expertChoice = 3)

Module	Input Data	Description	Expected Output
displayExpertList	1	User inputs 1 to go to the expert week 1 schedule page	displaySchedule
	2	User inputs 2 to go to the expert week 2 schedule page	displaySchedule
	3	User inputs 3 to go to the expert week 3 schedule page	displaySchedule
	4	User inputs 4 to go to the expert week 4 schedule page	displaySchedule
	0	User inputs 0 to cancel	displayCustomerMenu
	invalid input	User inputs non-integer values or integer outside the range of 0 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Paul Schedule:

Week 1: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
----------------------------------------------
Week 2: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
----------------------------------------------
Week 3: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
----------------------------------------------
Week 4: Available slots: 30
----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
----------------------------------------------
Enter week number [1-4/0 to Cancel] >>
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Paul
(Week 1):
-----------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-----------------------------------------------------------------------------------------
      8-10 |           P001 |           P007 |           P013 |           P019 |           P025 |
     10-12 |           P002 |           P008 |           P014 |           P020 |           P026 |
     12-14 |           P003 |           P009 |           P015 |           P021 |           P027 |
     14-16 |           P004 |           P010 |           P016 |           P022 |           P028 |
     16-18 |           P005 |           P011 |           P017 |           P023 |           P029 |
     18-20 |           P006 |           P012 |           P018 |           P024 |           P030 |
-----------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-----------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Paul
(Week 2):
-----------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       8/7/2024 |       9/7/2024 |      10/7/2024 |      11/7/2024 |      12/7/2024 |
-----------------------------------------------------------------------------------------
      8-10 |           P031 |           P037 |           P043 |           P049 |           P055 |
     10-12 |           P032 |           P038 |           P044 |           P050 |           P056 |
     12-14 |           P033 |           P039 |           P045 |           P051 |           P057 |
     14-16 |           P034 |           P040 |           P046 |           P052 |           P058 |
     16-18 |           P035 |           P041 |           P047 |           P053 |           P059 |
     18-20 |           P036 |           P042 |           P048 |           P054 |           P060 |
-----------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-----------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Paul
(Week 3):
-----------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      15/7/2024 |      16/7/2024 |      17/7/2024 |      18/7/2024 |      19/7/2024 |
-----------------------------------------------------------------------------------------
      8-10 |           P061 |           P067 |           P073 |           P079 |           P085 |
     10-12 |           P062 |           P068 |           P074 |           P080 |           P086 |
     12-14 |           P063 |           P069 |           P075 |           P081 |           P087 |
     14-16 |           P064 |           P070 |           P076 |           P082 |           P088 |
     16-18 |           P065 |           P071 |           P077 |           P083 |           P089 |
     18-20 |           P066 |           P072 |           P078 |           P084 |           P090 |
-----------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-----------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Paul
(Week 4):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      22/7/2024 |      23/7/2024 |      24/7/2024 |      25/7/2024 |      26/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          P091 |          P097 |          P103 |          P109 |          P115 |
     10-12 |          P092 |          P098 |          P104 |          P110 |          P116 |
     12-14 |          P093 |          P099 |          P105 |          P111 |          P117 |
     14-16 |          P094 |          P100 |          P106 |          P112 |          P118 |
     16-18 |          P095 |          P101 |          P107 |          P113 |          P119 |
     18-20 |          P096 |          P102 |          P108 |          P114 |          P120 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

Input data: 0

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|      Customer Menu        |
-----------------------------
| |S| View Service          |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
-----------------------------
Enter option [S/E/C/B/A/R] >>
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Paul Schedule:

Week 1: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
---------------------------------------------
Week 2: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >> a
Invalid input. Please enter a number between 0 and 4: 5
Invalid input. Please enter a number between 0 and 4: @
Invalid input. Please enter a number between 0 and 4: |
```

Run 12 (customerInput = ‘B’ or ‘b’)

Module	Input Data	Description	Expected Output
displayExpertList	1	User inputs 1 to go to the expert available slot schedule page	displayWeekAndSelect
	2	User inputs 2 to go to the expert available slot schedule page	displayWeekAndSelect
	3	User inputs 3 to go to the expert available slot schedule page	displayWeekAndSelect
	4	User inputs 4 to go back to the customer menu page	displayCustomerMenu
	invalid input	User inputs non-integer values or integer outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to Book Schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
---------------------------------------------
Week 2: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >> |
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Vernice Schedule:

Week 1: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
---------------------------------------------
Week 2: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >> |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Paul Schedule:

Week 1: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
---------------------------------------------
Week 2: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >> |
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|      Customer Menu       |
----------------------------
| |S| View Service         |
| |E| View Expert          |
| |C| Check Schedule       |
| |B| Book Service         |
| |A| View Appointment     |
| |R| Sign Out and Return  |
----------------------------
Enter option [S/E/C/B/A/R] >> |
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Select Expert to Book Schedules

----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> 5
Invalid input. Please enter a number between 1 and 4: a
Invalid input. Please enter a number between 1 and 4: @
Invalid input. Please enter a number between 1 and 4: |
```

Run 13 (customerInput = ‘B’ or ‘b’ and expertChoice = 1)

Module	Input Data	Description	Expected Output
displayExpertList	1	User inputs 1 to go to the expert week 1 schedule page	displaySchedule
	2	User inputs 2 to go to the expert week 2 schedule page	displaySchedule
	3	User inputs 3 to go to the expert week 3 schedule page	displaySchedule
	4	User inputs 4 to go to the expert week 4 schedule page	displaySchedule
	0	User inputs 0 to cancel	displayCustomerMenu
	invalid input	User inputs non-integer values or integer outside the range of 0 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
-----------------------------------------------
Week 2: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
-----------------------------------------------
Week 3: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
-----------------------------------------------
Week 4: Available slots: 30
-----------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
-----------------------------------------------
Enter week number [1-4/0 to Cancel] >>
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      1/7/2024 |      2/7/2024 |      3/7/2024 |      4/7/2024 |      5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          S001 |          S007 |          S013 |          S019 |          S025 |
     10-12 |          S002 |          S008 |          S014 |          S020 |          S026 |
     12-14 |          S003 |          S009 |          S015 |          S021 |          S027 |
     14-16 |          S004 |          S010 |          S016 |          S022 |          S028 |
     16-18 |          S005 |          S011 |          S017 |          S023 |          S029 |
     18-20 |          S006 |          S012 |          S018 |          S024 |          S030 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: |
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 2):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      8/7/2024 |      9/7/2024 |     10/7/2024 |     11/7/2024 |     12/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          S031 |          S037 |          S043 |          S049 |          S055 |
     10-12 |          S032 |          S038 |          S044 |          S050 |          S056 |
     12-14 |          S033 |          S039 |          S045 |          S051 |          S057 |
     14-16 |          S034 |          S040 |          S046 |          S052 |          S058 |
     16-18 |          S035 |          S041 |          S047 |          S053 |          S059 |
     18-20 |          S036 |          S042 |          S048 |          S054 |          S060 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book:
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 3):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |     15/7/2024 |     16/7/2024 |     17/7/2024 |     18/7/2024 |     19/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          S061 |          S067 |          S073 |          S079 |          S085 |
     10-12 |          S062 |          S068 |          S074 |          S080 |          S086 |
     12-14 |          S063 |          S069 |          S075 |          S081 |          S087 |
     14-16 |          S064 |          S070 |          S076 |          S082 |          S088 |
     16-18 |          S065 |          S071 |          S077 |          S083 |          S089 |
     18-20 |          S066 |          S072 |          S078 |          S084 |          S090 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: |
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 4):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      22/7/2024 |      23/7/2024 |      24/7/2024 |      25/7/2024 |      26/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           S091 |           S097 |           S103 |           S109 |           S115 |
     10-12 |           S092 |           S098 |           S104 |           S110 |           S116 |
     12-14 |           S093 |           S099 |           S105 |           S111 |           S117 |
     14-16 |           S094 |           S100 |           S106 |           S112 |           S118 |
     16-18 |           S095 |           S101 |           S107 |           S113 |           S119 |
     18-20 |           S096 |           S102 |           S108 |           S114 |           S120 |
-------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: |
```

Input data: 0

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|      Customer Menu        |
-----------------------------
| |S| View Service          |
| |E| View Expert           |
| |C| Check Schedule        |
| |B| Book Service          |
| |A| View Appointment      |
| |R| Sign Out and Return   |
-----------------------------
Enter option [S/E/C/B/A/R] >> |
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   1 |   2 |   3 |   4 |   5 |
---------------------------------------------
Week 2: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >> @
Invalid input. Please enter a number between 0 and 4: a
Invalid input. Please enter a number between 0 and 4: 5
Invalid input. Please enter a number between 0 and 4:
```

Run 14 (customerInput = ‘B’ or ‘b’, expertChoice = 1, week = 1)

Module	Input Data	Description	Expected Output
displaySchedule	‘Q’ or ‘q’	User inputs ‘Q’ or ‘q’ to cancel booking	displayCustomerMenu
	valid userslotID valid i valid bookingTypeChoice	User inputs valid slot ID, i and booking type choice	displayBookingDetails
	valid userslotID invalid i	User inputs valid slot ID and invalid i	Error message displayed and ask user to re-enter the input
	valid userslotID valid i invalid bookingTypeChoice	User inputs valid slot ID, i and invalid bookingTypeChoice	Error message displayed and ask user to re-enter the input
	invalid userslotID	User inputs invalid slot ID	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          S001 |          S007 |          S013 |          S019 |          S025 |
     10-12 |          S002 |          S008 |          S014 |          S020 |          S026 |
     12-14 |          S003 |          S009 |          S015 |          S021 |          S027 |
     14-16 |          S004 |          S010 |          S016 |          S022 |          S028 |
     16-18 |          S005 |          S011 |          S017 |          S023 |          S029 |
     18-20 |          S006 |          S012 |          S018 |          S024 |          S030 |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book:
```

Input data: valid userslotID, valid i , valid bookingTypeChoice

```
 _    _   ___  ___   _ ______   __  ____ _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-----------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-----------------------------------------------------------------------------------------
      8-10 |           S001 |           S007 |           S013 |           S019 |           S025 |
     10-12 |           S002 |           S008 |           S014 |           S020 |           S026 |
     12-14 |           S003 |           S009 |           S015 |           S021 |           S027 |
     14-16 |           S004 |           S010 |           S016 |           S022 |           S028 |
     16-18 |           S005 |           S011 |           S017 |           S023 |           S029 |
     18-20 |           S006 |           S012 |           S018 |           S024 |           S030 |
-----------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-----------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: S001

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 1

Choose:
1.Treatment [2 hours]
2.Consulation [1 hours]
Do you want a treatment (1) or  consultation (2) or cancel (3)? 1
```

```
 _    _   ___  ___   _ ______   __  ____ _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|


Booking Information:
--------------------------------------------------
Booking ID: S001
--------------------------------------------------
Expert: Steve
Service: Makeup
Type: Treatment
Week: 1, Day: Mon, Date: 1/7/2024
Duration: 2 hour(s)
Time: 8-10
--------------------------------------------------

Do you want to confirm this booking? (Y to confirm others to Cancel):
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 2):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       8/7/2024 |       9/7/2024 |      10/7/2024 |      11/7/2024 |      12/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           V031 |           V037 |           V043 |           XXXX |           V055 |
     10-12 |           XXXX |           V038 |           V044 |           V050 |           V056 |
     12-14 |           XXXX |           V039 |           V045 |           V051 |           V057 |
     14-16 |           XXXX |           V040 |           V046 |           V052 |           V058 |
     16-18 |           XXXX |           V041 |           V047 |           V053 |           V059 |
     18-20 |           XXXX |           V042 |           V048 |           V054 |           V060 |
-------------------------------------------------------------------------------------------
     Hours |            5/6 |            0/6 |            0/6 |            1/6 |            0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: V031

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 2
Only 1-hour consultation is available for this slot.
Enter y to continue or other to cancel:
```

Input data: valid userslotID, invalid i

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           S001 |           S007 |           S013 |           S019 |           S025 |
     10-12 |           S002 |           S008 |           S014 |           S020 |           S026 |
     12-14 |           S003 |           S009 |           S015 |           S021 |           S027 |
     14-16 |           S004 |           S010 |           S016 |           S022 |           S028 |
     16-18 |           S005 |           S011 |           S017 |           S023 |           S029 |
     18-20 |           S006 |           S012 |           S018 |           S024 |           S030 |
-------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: S001

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 4
Invalid input. Please enter a number between 1 and 3: @
Invalid input. Please enter a number between 1 and 3: a
Invalid input. Please enter a number between 1 and 3:
```

Input data: valid userslotID, valid i, invalid bookingTypeChoice

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           S001 |           S007 |           S013 |           S019 |           S025 |
     10-12 |           S002 |           S008 |           S014 |           S020 |           S026 |
     12-14 |           S003 |           S009 |           S015 |           S021 |           S027 |
     14-16 |           S004 |           S010 |           S016 |           S022 |           S028 |
     16-18 |           S005 |           S011 |           S017 |           S023 |           S029 |
     18-20 |           S006 |           S012 |           S018 |           S024 |           S030 |
-------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: S001

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 2

Choose:
1.Treatment [2 hours]
2.Consulation [1 hours]
Do you want a treatment (1) or  consultation (2) or cancel (3)? 4
Invalid input. Please enter a number between 1 and 3: @
Invalid input. Please enter a number between 1 and 3: a
Invalid input. Please enter a number between 1 and 3:
```

Input data: invalid userslotID

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           S001 |           S007 |           S013 |           S019 |           S025 |
     10-12 |           S002 |           S008 |           S014 |           S020 |           S026 |
     12-14 |           S003 |           S009 |           S015 |           S021 |           S027 |
     14-16 |           S004 |           S010 |           S016 |           S022 |           S028 |
     16-18 |           S005 |           S011 |           S017 |           S023 |           S029 |
     18-20 |           S006 |           S012 |           S018 |           S024 |           S030 |
-------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: S100
Invalid the slot ID or the ID already booked Please Enter Again
Please Q to quit
Enter the slot ID you want to book: |
```

Input data: ‘Q’ or ‘q’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |   _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 2):
-------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       8/7/2024 |       9/7/2024 |      10/7/2024 |      11/7/2024 |      12/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |           S031 |           S037 |           S043 |           S049 |           S055 |
     10-12 |           S032 |           S038 |           S044 |           S050 |           S056 |
     12-14 |           S033 |           S039 |           S045 |           S051 |           S057 |
     14-16 |           S034 |           S040 |           S046 |           S052 |           S058 |
     16-18 |           S035 |           S041 |           S047 |           S053 |           S059 |
     18-20 |           S036 |           S042 |           S048 |           S054 |           S060 |
-------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: q
Booking Process have been cancelled...
Press any key to continue . . .
```

Run 15

Module	Input Data	Description	Expected Output
displayBookingDetails	confirm = ‘Y’ or ‘y’	User inputs ‘Y’ or ‘y’ to confirm booking	processPayment
	any key	User inputs invalid confirm	displayCustomerMenu

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|


Booking Information:
-------------------------------------------------
Booking ID: S002
-------------------------------------------------
Expert: Steve
Service: Makeup
Type: Consultation
Week: 1, Day: Mon, Date: 1/7/2024
Duration: 1 hour(s)
Time: 10-11
-------------------------------------------------

Do you want to confirm this booking? (Y to confirm others to Cancel): |
```

Input data: confirm = ‘Y’ or ‘y’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|


Booking Information:
-------------------------------------------------
Booking ID: S002
-------------------------------------------------
Expert: Steve
Service: Makeup
Type: Consultation
Week: 1, Day: Mon, Date: 1/7/2024
Duration: 1 hour(s)
Time: 10-11
-------------------------------------------------

Do you want to confirm this booking? (Y to confirm others to Cancel): y

 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Payment Process
---------------
Price: RM 200.00
Booking Tax 5%: RM 10.00
Total amount: RM 210.00

Choose payment method:
1. E-Wallet
2. Online Banking
3. Credit Card
4. Cancel Payment
Enter choice (1-4) >>
```

Input data: any key

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|


Booking Information:
-----------------------------------------------
Booking ID: S002
-----------------------------------------------
Expert: Steve
Service: Body Waxing
Type: Consultation
Week: 1, Day: Mon, Date: 1/7/2024
Duration: 1 hour(s)
Time: 10-11
-----------------------------------------------

Do you want to confirm this booking? (Y to confirm others to Cancel): c
Booking Process have been cancelled...
Press any key to continue . . .
```

Run 16

Module	Input Data	Description	Expected Output
processPayment	1	User inputs 1 to choose e-wallet	displaySchedule
	2	User inputs 2 to choose online banking	displaySchedule
	3	User inputs 3 to choose credit card	displaySchedule
	4	User inputs 4 to cancel payment	displaySchedule
	invalid input	User inputs non-integer values or integer outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Payment Process
---------------
Price: RM 100.00
Booking Tax 5%: RM 5.00
Total amount: RM 105.00

Choose payment method:
1. E-Wallet
2. Online Banking
3. Credit Card
4. Cancel Payment
Enter choice (1-4) >>
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|          E-WALLET           |
-------------------------------
Enter customer contact (only numbers): |
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|       ONLINE BANKING        |
-------------------------------
Enter Bank Account name (5-30 alphabetic characters): |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|         CREDIT CARD         |
-------------------------------
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): |
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Payment Process
---------------
Price: RM 200.00
Booking Tax 5%: RM 10.00
Total amount: RM 210.00

Choose payment method:
1. E-Wallet
2. Online Banking
3. Credit Card
4. Cancel Payment
Enter choice (1-4) >> 4
Payment cancelled.
Booking Process have been cancelled...
Press any key to continue . . .
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Payment Process
---------------
Price: RM 300.00
Booking Tax 5%: RM 15.00
Total amount: RM 315.00

Choose payment method:
1. E-Wallet
2. Online Banking
3. Credit Card
4. Cancel Payment
Enter choice (1-4) >> a
Invalid input. Please enter a number between 1 and 4: @
Invalid input. Please enter a number between 1 and 4: 5
Invalid input. Please enter a number between 1 and 4:
```

Run 17

Module	Input Data	Description	Expected Output
ewallet	Valid Contact: 0123456789 correct otp	User inputs contact number according to correct format and valid otp	generateReceipt
	Invalid Contact: 012 01234567890123456	User inputs invalid contact number	Error message displayed and ask user to re-enter the input
	wrong otp	User inputs invalid otp	Error message

			displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
------------------------------
|          E-WALLET          |
------------------------------
Enter customer contact (only numbers):
```

Input data: valid contact, correct otp

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
------------------------------
|          E-WALLET          |
------------------------------
Enter customer contact (only numbers): 0123456789
Generated OTP: 106492
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******


--------------------------------------------------
                  LUXURY BEAUTY BAR
                    Booking Receipt
--------------------------------------------------
Receipt#: S013
Date: 3/7/2024

Customer: chiao05
Expert: Steve
Service: Makeup
Consultation
--------------------------------------------------
                             Sub Total:     200.00
                              Tax (5%):      10.00
                                 TOTAL:     210.00

Payment Method: E-WALLET

Booking Details:
Week 1, Wed
Time: 8-9

Thanks for your business.
--------------------------------------------------
```

Input data: invalid contact

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|          E-WALLET          |
-------------------------------
Enter customer contact (only numbers): 012
Invalid contact number. Please enter  10 to 15 numbers
Enter customer contact (only numbers): 01234567890987654
Invalid contact number. Please enter  10 to 15 numbers
Enter customer contact (only numbers): |
```

Input data: wrong otp

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|          E-WALLET          |
-------------------------------
Enter customer contact (only numbers): 01234567890
Generated OTP: 108807
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******
Invalid otp
Enter OTP (6 digits):
```

Run 18

Module	Input Data	Description	Expected Output
online_bank	Valid Account name: Ng Chiao Han Valid Account number: 1234567890 Correct otp	User inputs account name and account number according to correct format and valid otp	generateReceipt
	Invalid Account name: han chiaohanchiaohanchiaohanchiaohan 123 ###	User inputs invalid account name	Error message displayed and ask user to re-enter the input
	Invalid Account number: 123 123456789012345 ### abc	User inputs invalid account number	Error message displayed and ask user to re-enter the input
	Wrong otp	User inputs invalid otp	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       ONLINE BANKING       |
-----------------------------
Enter Bank Account name (5-30 alphabetic characters): |
```

Input data: valid account name, valid account number

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       ONLINE BANKING      |
-----------------------------
Enter Bank Account name (5-30 alphabetic characters): Ng Chiao Han
Enter bank account number (10 digits): 1234567890
Generated OTP: 112191
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******


--------------------------------------------------
                  LUXURY BEAUTY BAR
                    Booking Receipt
--------------------------------------------------
Receipt#: S031
Date: 8/7/2024

Customer: chiao05
Expert: Steve
Service: Body Waxing
Consultation
--------------------------------------------------
                              Sub Total:     100.00
                               Tax (5%):       5.00
                                  TOTAL:     105.00

Payment Method: Online Banking

Booking Details:
Week 2, Mon
Time: 8-9

Thanks for your business.
--------------------------------------------------
```

Input data: invalid account name

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       ONLINE BANKING      |
-----------------------------
Enter Bank Account name (5-30 alphabetic characters): han
Invalid name. Please use only alphabetic characters and spaces, 5-30 characters long.
Enter Bank Account name (5-30 alphabetic characters): chiaohanchiaohanchiaohanchiaohan
Invalid name. Please use only alphabetic characters and spaces, 5-30 characters long.
Enter Bank Account name (5-30 alphabetic characters): 123
Invalid name. Please use only alphabetic characters and spaces, 5-30 characters long.
Enter Bank Account name (5-30 alphabetic characters): ###
Invalid name. Please use only alphabetic characters and spaces, 5-30 characters long.
Enter Bank Account name (5-30 alphabetic characters):
```

Input data: invalid account number

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|       ONLINE BANKING       |
-------------------------------
Enter Bank Account name (5-30 alphabetic characters): Ng Chiao Han
Enter bank account number (10 digits): 123
Invalid account number. Please enter exactly 10 digits.
Enter bank account number (10 digits): 123456789123
Invalid account number. Please enter exactly 10 digits.
Enter bank account number (10 digits): ###
Invalid account number. Please enter exactly 10 digits.
Enter bank account number (10 digits): abc
Invalid account number. Please enter exactly 10 digits.
Enter bank account number (10 digits): |
```

Input data: wrong otp

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|       ONLINE BANKING       |
-------------------------------
Enter Bank Account name (5-30 alphabetic characters): Ng Chiao Han
Enter bank account number (10 digits): 1234567890
Generated OTP: 101970
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******
Invalid otp
Enter OTP (6 digits): |
```

Run 19

Module	Input Data	Description	Expected Output
creditcard	Valid Card Number: 1234 5678 9012 3456 Valid CVV: 123	User inputs credit card number and CVV according to correct format	generateReceipt
	Invalid Card Number: abc ### 1234	User inputs invalid credit card number	Error message displayed and ask user to re-enter the input

	12341234123412341234		
	Invalid CVV: 12345 12 ### abc	User inputs invalid CVV	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \  | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|         CREDIT CARD        |
-------------------------------
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX):
```

Input data: valid card number, valid cvv

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \  | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|         CREDIT CARD        |
-------------------------------
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): 1234 5678 9012 3456
Enter CVV (3 or 4 digits): 123
Credit card validated successfully!
Card number: XXXX-XXXX-XXXX-3456
CVV: ***
Press any key to continue . . .
```

```
--------------------------------------------------
                  LUXURY BEAUTY BAR
                    Booking Receipt
--------------------------------------------------
Receipt#: P065
Date: 15/7/2024

Customer: chiao05
Expert: Paul
Service: Body Waxing
Consultation
--------------------------------------------------
                             Sub Total:     100.00
                              Tax (5%):       5.00
                                 TOTAL:     105.00

Payment Method: Credit Card

Booking Details:
Week 3, Mon
Time: 16-17

Thanks for your business.
--------------------------------------------------
```

Need to close the txt file to proceed

Input data: invalid card number

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|         CREDIT CARD         |
-------------------------------
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): abc
Invalid card number length. Please enter a 16-digit number.
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): ###
Invalid card number length. Please enter a 16-digit number.
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): 1234
Invalid card number length. Please enter a 16-digit number.
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): 12341234123412341234
Invalid card number length. Please enter a 16-digit number.
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX):
```

Input data: invalid cvv

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------
|         CREDIT CARD         |
-------------------------------
Enter credit card number (Format: XXXX-XXXX-XXXX-XXXX or XXXX XXXX XXXX XXXX): 1234 5678 9012 3456
Enter CVV (3 or 4 digits): 12345
Invalid CVV. Please enter 3 or 4 digits.
Enter CVV (3 or 4 digits): 12
Invalid CVV. Please enter 3 or 4 digits.
Enter CVV (3 or 4 digits): ###
Invalid CVV. Please enter 3 or 4 digits.
Enter CVV (3 or 4 digits): abc
Invalid CVV. Please enter 3 or 4 digits.
Enter CVV (3 or 4 digits):
```

Run 20

Module	Input Data	Description	Expected Output
staffLogin	Valid staff username: Steve Correct password: steve123	User inputs the correct credential for logging in	expertMenu
	Valid staff username: Steve Invalid password: steve456	User inputs valid staff username and invalid password	Error message displayed and ask user to re-enter the input
	Invalid staff username: Darren	User inputs invalid staff username and password	Error message displayed and ask

	Invalid password: darren123		user to re-enter the input
	Valid staff username: Admin Valid password: admin123	User inputs ‘Admin’ and correct password for logging in	adminMenu

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 2

Staff Login
Enter username: |
```

Input data: valid username, correct password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 2

Staff Login
Enter username: Steve
Enter password: ********
Login successful. Welcome, Steve!
Press any key to continue . . . |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 2

Staff Login
Enter username: Admin
Enter password: ********
Login successful. Welcome, Admin!
Press any key to continue . . .
```

Input data: valid username, wrong password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 2

Staff Login
Enter username: Steve
Enter password: ********
Invalid username or password.
Press any key to continue . . .
```

Input data: invalid username, invalid password

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
----------------------------
|        Main Menu         |
----------------------------
| 1. Customer              |
| 2. Staff                 |
| 3. More Information      |
| 4. Exit                  |
----------------------------
Enter option (1-4) >> 2

Staff Login
Enter username: Darren
Enter password: *********
Invalid username or password.
Press any key to continue . . .
```

Run 21

Module	Input Data	Description	Expected Output
expertMenu	1	User inputs 1 to go to customer details page	viewCustomerDetials
	2	User inputs 2 to go to schedule page	displaySchedule
	3	User inputs 3 to go to sales report page	viewSalesReport
	4	User inputs 4 to return to the main menu page	displayMainMenu
	Invalid input	User inputs invalid input like non-integer values or outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Expert Menu        |
-----------------------------
| |1| View Customer Details |
| |2| View My Schedule      |
| |3| View Sales Report     |
| |4| Return & Sign Up      |
----------------------------
Enter option (1-4) >>
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >>
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____   _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      1/7/2024 |      2/7/2024 |      3/7/2024 |      4/7/2024 |      5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          #### |          #### |          #### |          #### |          #### |
     10-12 |          #### |          #### |          #### |          #### |          #### |
     12-14 |          #### |          #### |          #### |          #### |          #### |
     14-16 |          #### |          #### |          #### |          #### |          #### |
     16-18 |          #### |          #### |          #### |          #### |          #### |
     18-20 |          #### |          #### |          #### |          #### |          #### |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------


Schedule for Steve
(Week 2):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      8/7/2024 |      9/7/2024 |     10/7/2024 |     11/7/2024 |     12/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          #### |          #### |          #### |          #### |          #### |
     10-12 |          #### |          #### |          #### |          #### |          #### |
     12-14 |          #### |          #### |          #### |          #### |          #### |
     14-16 |          #### |          #### |          #### |          #### |          #### |
     16-18 |          #### |          #### |          #### |          #### |          #### |
     18-20 |          #### |          #### |          #### |          #### |          #### |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------


Schedule for Steve
(Week 3):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |     15/7/2024 |     16/7/2024 |     17/7/2024 |     18/7/2024 |     19/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          #### |          #### |          #### |          #### |          #### |
     10-12 |          #### |          #### |          #### |          #### |          #### |
     12-14 |          #### |          #### |          #### |          #### |          #### |
     14-16 |          #### |          #### |          #### |          #### |          #### |
     16-18 |          #### |          #### |          #### |          #### |          #### |
     18-20 |          #### |          #### |          #### |          #### |          #### |
-------------------------------------------------------------------------------------------
     Hours |           0/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------


Schedule for Steve
(Week 4):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |     22/7/2024 |     23/7/2024 |     24/7/2024 |     25/7/2024 |     26/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          #### |          #### |          #### |          #### |          #### |
     10-12 |          #### |          #### |          #### |          #### |          #### |
     12-14 |          S093 |          #### |          #### |          #### |          #### |
     14-16 |          #### |          #### |          #### |          #### |          #### |
     16-18 |          #### |          #### |          #### |          #### |          #### |
     18-20 |          #### |          #### |          #### |          #### |          #### |
-------------------------------------------------------------------------------------------
     Hours |           1/6 |           0/6 |           0/6 |           0/6 |           0/6 |
-------------------------------------------------------------------------------------------

Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details: |
```

Input data: 3

```
 _   _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | |_   _\ \ / /
| |  | | | |\  /| | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                   Beauty Service Sales Report                                                       |
+-------------------------------------------------------------------------------------------------------------------------------------+
| Slot  | Customer        | Date       | Booking Type   | Service              | Expert          |      Price |      Tax | Total Amount |
+-------------------------------------------------------------------------------------------------------------------------------------+
| S093  | chiao05         | 22/07/2024 | Consultation   | Body Waxing          | Steve           |     100.00 |     5.00 |       105.00 |
| V006  | chiao05         | 1/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V037  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V049  | chiao05         | 11/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V064  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V119  | chiao05         | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| P039  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
| P065  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                                                                                Total Sales:      840.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+

Do you want to view and generate the summary sales report? (y -> Yes/ others -> Quit): |
```

Input data: 4

```
 _   _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | |_   _\ \ / /
| |  | | | |\  /| | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Expert Menu        |
-----------------------------
| |1| View Customer Details |
| |2| View My Schedule      |
| |3| View Sales Report     |
| |4| Return & Sign Up      |
-----------------------------
Enter option (1-4) >> 4
Logging out...
Press any key to continue . . .
```

Input data: invalid input

```
 _   _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | |_   _\ \ / /
| |  | | | |\  /| | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Expert Menu        |
-----------------------------
| |1| View Customer Details |
| |2| View My Schedule      |
| |3| View Sales Report     |
| |4| Return & Sign Up      |
-----------------------------
Enter option (1-4) >> @
Invalid input. Please enter a number between 1 and 4: a
Invalid input. Please enter a number between 1 and 4: 5
Invalid input. Please enter a number between 1 and 4: |
```

Run 22

Module	Input Data	Description	Expected Output
viewCustomerDetails	1	User inputs 1 to go to customer details name sorted by name	displaySortedList
	2	User inputs 2 to go to customer details page sorted by expenses	displaySortedList
	3	User inputs 3 to go back to the expert menu page	expertMenu
	Invalid input	User inputs invalid input like non-integer values or outside the range of 1 - 3	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >> |
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by name:

+------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+------------------------------------------------------------+
|  1 |             Hui Yee |       huiyee12 |         315.00 |
|  2 |           alicia ng |       alicia05 |         105.00 |
|  3 |           chiao han |        chiao05 |         840.00 |
+------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return):
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
|  2 |             Hui Yee |       huiyee12 |         315.00 |
|  3 |           alicia ng |       alicia05 |         105.00 |
+------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Expert Menu        |
-----------------------------
| |1| View Customer Details |
| |2| View My Schedule      |
| |3| View Sales Report     |
| |4| Return & Sign Up      |
-----------------------------
Enter option (1-4) >> |
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >> @
Invalid input. Please enter a number between 1 and 3: a
Invalid input. Please enter a number between 1 and 3: 5
Invalid input. Please enter a number between 1 and 3:
```

Run 23

Module	Input Data	Description	Expected Output
displaySortedList	Valid username: chiao05	User inputs valid username to go to the details page	displayCustomerDetials
	Invalid username: chiaohan 123 ###	User inputs invalid username	Error message displayed and ask user to re-enter the input
	‘q’	User inputs ‘q’ to go back to the view customer details page	viewCustomerDetials

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by name:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return):
```

Input data: valid username

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
|  2 |             Hui Yee |       huiyee12 |         315.00 |
|  3 |           alicia ng |       alicia05 |         105.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): chiao05

Customer Details:
------------------------
Name: chiao han
Username: chiao05
Contact: 0123456789
Email: chiaohan@gmail.com
Total Expenses: RM 840.00
------------------------
Press any key to continue . . .
```

Input data: invalid username

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
|  2 |             Hui Yee |       huiyee12 |         315.00 |
|  3 |           alicia ng |       alicia05 |         105.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): chiaohan

Customer not found.
Press any key to continue . . .


 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
|  2 |             Hui Yee |       huiyee12 |         315.00 |
|  3 |           alicia ng |       alicia05 |         105.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): ###

Customer not found.
Press any key to continue . . .
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by name:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): ###

Customer not found.
Press any key to continue . . . |
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
|  2 |             Hui Yee |       huiyee12 |         315.00 |
|  3 |           alicia ng |       alicia05 |         105.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): 123

Customer not found.
Press any key to continue . . . |
```

Input data: ‘q’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Customers sorted by total sales:

+-------------------------------------------------------------+
|No. |                Name |       Username |  Total Expense |
+-------------------------------------------------------------+
|  1 |           chiao han |        chiao05 |         840.00 |
|  2 |             Hui Yee |       huiyee12 |         315.00 |
|  3 |           alicia ng |       alicia05 |         105.00 |
+-------------------------------------------------------------+

Enter a customer's username to view details (or 'q' to return): q|
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >> |
```

Run 24

Module	Input Data	Description	Expected Output
displaySchedule	booked slot id	User inputs book slot id to view	displayBookingDetails
	not booked slot id	User inputs not booked slot id	Error message displayed and ask user to re-enter the input
	0	User inputs 0 to go back to the expert menu page	expertMenu
	invalid input	User inputs invalid slot id or inputs other numbers from 0	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____   _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           #### |           #### |           #### |           #### |           #### |
     10-12 |           #### |           #### |           #### |           #### |           #### |
     12-14 |           #### |           #### |           #### |           #### |           #### |
     14-16 |           #### |           #### |           #### |           #### |           #### |
     16-18 |           #### |           #### |           #### |           #### |           #### |
     18-20 |           #### |           #### |           #### |           #### |           #### |
-------------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------------


Schedule for Steve
(Week 2):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |       8/7/2024 |       9/7/2024 |      10/7/2024 |      11/7/2024 |      12/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           #### |           #### |           #### |           #### |           #### |
     10-12 |           #### |           #### |           #### |           #### |           #### |
     12-14 |           #### |           #### |           #### |           #### |           #### |
     14-16 |           #### |           #### |           #### |           #### |           #### |
     16-18 |           #### |           #### |           #### |           #### |           #### |
     18-20 |           #### |           #### |           #### |           #### |           #### |
-------------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------------


Schedule for Steve
(Week 3):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      15/7/2024 |      16/7/2024 |      17/7/2024 |      18/7/2024 |      19/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           #### |           #### |           #### |           #### |           #### |
     10-12 |           #### |           #### |           #### |           #### |           #### |
     12-14 |           #### |           #### |           #### |           #### |           #### |
     14-16 |           #### |           #### |           #### |           #### |           #### |
     16-18 |           #### |           #### |           #### |           #### |           #### |
     18-20 |           #### |           #### |           #### |           #### |           #### |
-------------------------------------------------------------------------------------------------
     Hours |            0/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------------


Schedule for Steve
(Week 4):
-------------------------------------------------------------------------------------------------
      Time |            Mon |            Tue |            Wed |            Thu |            Fri |
           |      22/7/2024 |      23/7/2024 |      24/7/2024 |      25/7/2024 |      26/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |           #### |           #### |           #### |           #### |           #### |
     10-12 |           #### |           #### |           #### |           #### |           #### |
     12-14 |           S093 |           #### |           #### |           #### |           #### |
     14-16 |           #### |           #### |           #### |           #### |           #### |
     16-18 |           #### |           #### |           #### |           #### |           #### |
     18-20 |           #### |           #### |           #### |           #### |           #### |
-------------------------------------------------------------------------------------------------
     Hours |            1/6 |            0/6 |            0/6 |            0/6 |            0/6 |
-------------------------------------------------------------------------------------------------

Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details:
```

Input data: booked slot id (S093)

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-------------------------------------------------
Booking ID: S093
-------------------------------------------------
Expert: Steve
Service: Body Waxing
Type: Consultation
Week: 4, Day: Mon, Date: 22/7/2024
Duration: 1 hour(s)
Time: 12-13
-------------------------------------------------
Customer: chiao05
Press any key to continue . . . |
```

Input data: not booked slot id

```
Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details: S001
This slot is not booked.
Press any key to continue . . . |
```

Input data: 0

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Expert Menu        |
-----------------------------
| |1| View Customer Details |
| |2| View My Schedule      |
| |3| View Sales Report     |
| |4| Return & Sign Up      |
----------------------------
Enter option (1-4) >> |
```

Input data: invalid input

```
Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details: a
Invalid Slot ID.
Press any key to continue . . .
```

```
Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details: 1
Invalid Slot ID.
Press any key to continue . . . |
```

```
Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details: #
Invalid Slot ID.
Press any key to continue . . .
```

Run 25

Module	Input Data	Description	Expected Output
viewSalesReport	choice = ‘Y’ or ‘y’	User inputs ‘Y’ or ‘y’ to view the summary of sales report	viewSalesReport
	any key: # 1 a	User inputs any key except ‘Y’ and ‘y’ to go back to the expert menu page	expertMenu

Actual Output

```
 _   _   ___  ___   _ _____  __  ____ _____   _   _   _ _____  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                   Beauty Service Sales Report                                                       |
+-------------------------------------------------------------------------------------------------------------------------------------+
| Slot  | Customer        | Date       | Booking Type   | Service              | Expert          |      Price |      Tax | Total Amount |
+-------------------------------------------------------------------------------------------------------------------------------------+
| S093  | chiao05         | 22/07/2024 | Consultation   | Body Waxing          | Steve           |     100.00 |     5.00 |       105.00 |
| V006  | chiao05         | 1/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V032  | huiyee12        | 8/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V037  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V049  | chiao05         | 11/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V064  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V115  | alicia05        | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V119  | chiao05         | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| P039  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
| P055  | huiyee12        | 12/07/2024 | Consultation   | Makeup               | Paul            |     200.00 |    10.00 |       210.00 |
| P065  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                                                                          Total Sales:     1260.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+

Do you want to view and generate the summary sales report? (y -> Yes/ others -> Quit):
```

Input data: choice = ‘Y’ or ‘y’

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
+-----------------------------------------------------------+
|          Summary Beauty Service Sales Report              |
+-----------------------------------------------------------+
| Total Summary                                             |
| Total Bookings: 11                                        |
| Total Revenue:  RM 1260.00                                |
+-----------------------------------------------------------+
| Revenue by Booking                                        |
| Treatment:     RM 0.00                                    |
| Consultation:  RM 1260.00                                 |
+-----------------------------------------------------------+
| Revenue by Expert                                         |
| Steve          : RM 105.00                                |
| Vernice        : RM 735.00                                |
| Paul           : RM 420.00                                |
+-----------------------------------------------------------+
| Revenue by Service                                        |
| Makeup                 : RM 210.00                        |
| Body Waxing            : RM 1050.00                       |
| Lazer Hair Removal     : RM 0.00                          |
+-----------------------------------------------------------+
Sales Report generated and saved as Sales_Report.txt
Press any key to continue . . .
```

Input data: any key

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                   Beauty Service Sales Report                                                       |
+-------------------------------------------------------------------------------------------------------------------------------------+
| Slot  | Customer        | Date       | Booking Type   | Service              | Expert          |      Price |      Tax | Total Amount |
+-------------------------------------------------------------------------------------------------------------------------------------+
| S093  | chiao05         | 22/07/2024 | Consultation   | Body Waxing          | Steve           |     100.00 |     5.00 |       105.00 |
| V006  | chiao05         | 1/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V032  | huiyee12        | 8/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V037  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V049  | chiao05         | 11/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V064  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V115  | alicia05        | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V119  | chiao05         | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| P039  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
| P055  | huiyee12        | 12/07/2024 | Consultation   | Makeup               | Paul            |     200.00 |    10.00 |       210.00 |
| P065  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+
|                                                                                                          Total Sales:     1260.00 |
+-------------------------------------------------------------------------------------------------------------------------------------+

Do you want to view and generate the summary sales report? (y -> Yes/ others -> Quit): c
Press any key to continue . . .
```

Run 26 (username = Admin and password = admin123)

Module	Input Data	Description	Expected Output
adminMenu	1	User inputs 1 to go to customer details page	viewCustomerDetails
	2	User inputs 2 to go to expert	viewOverallSchedules

		list page	
	3	User inputs 3 to view the sale report	viewSalesReport
	4	User inputs 4 to go to the refund page	processRefund
	5	User inputs 5 to go back to main menu page	displayMainMenu
	Invalid input	User inputs invalid input like non-integer values or outside the range of 1 - 5	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____ _____   _    _   _ _______  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Admin Menu         |
-----------------------------
| |1| View Customer Details |
| |2| View Overall Schedule |
| |3| View Sales Report     |
| |4| Refund Booking        |
| |5| Return & Sign Up      |
----------------------------
Enter option (1-5) >>
```

Input data: 1

```
 _    _   ___  ___   _ ______   __  ____ _____   _    _   _ _______  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|       Customer Details    |
-----------------------------
| |1| Sort By Name          |
| |2| Sort By Expenses      |
| |3| Return                |
-----------------------------
Enter option (1-3) >> |
```

Input data: 2

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Overall Schedule
Select the expert to view the schedule:
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >> |
```

Input data: 3

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
+------------------------------------------------------------------------------------------------------------------------------------------+
|                                                   Beauty Service Sales Report                                                            |
+------------------------------------------------------------------------------------------------------------------------------------------+
| Slot  | Customer        | Date       | Booking Type   | Service              | Expert          |      Price |      Tax | Total Amount |
+------------------------------------------------------------------------------------------------------------------------------------------+
| S093  | chiao05         | 22/07/2024 | Consultation   | Body Waxing          | Steve           |     100.00 |     5.00 |       105.00 |
| V006  | chiao05         | 1/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V032  | huiyee12        | 8/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V037  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V049  | chiao05         | 11/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V064  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V115  | alicia05        | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| V119  | chiao05         | 26/07/2024 | Consultation   | Body Waxing          | Vernice         |     100.00 |     5.00 |       105.00 |
| P039  | chiao05         | 9/07/2024  | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
| P055  | huiyee12        | 12/07/2024 | Consultation   | Makeup               | Paul            |     200.00 |    10.00 |       210.00 |
| P065  | chiao05         | 15/07/2024 | Consultation   | Body Waxing          | Paul            |     100.00 |     5.00 |       105.00 |
+------------------------------------------------------------------------------------------------------------------------------------------+
|                                                                                                          Total Sales:     1260.00 |
+------------------------------------------------------------------------------------------------------------------------------------------+

Do you want to view and generate the summary sales report? (y -> Yes/ others -> Quit): |
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): |
```

Input data: 5

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Admin Menu         |
-----------------------------
| |1| View Customer Details |
| |2| View Overall Schedule |
| |3| View Sales Report     |
| |4| Refund Booking        |
| |5| Return & Sign Up      |
-----------------------------
Enter option (1-5) >> 5
Logging out...
Press any key to continue . . . |
```

Input data: invalid output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |   _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Admin Menu         |
-----------------------------
| |1| View Customer Details |
| |2| View Overall Schedule |
| |3| View Sales Report     |
| |4| Refund Booking        |
| |5| Return & Sign Up      |
----------------------------
Enter option (1-5) >> 6
Invalid input. Please enter a number between 1 and 5: @
Invalid input. Please enter a number between 1 and 5: #
Invalid input. Please enter a number between 1 and 5:
```

Run 27 (username = Admin and password = admin123)

Module	Input Data	Description	Expected Output
viewOverallSchedules	valid input : 1/ 2/ 3	User inputs 1 to view individual schedule page	viewIndividualSchedule
	4	User inputs 4 to go back to admin menu page	adminMenu
	Invalid input	User inputs invalid input like non-integer values or outside the range of 1 - 4	Error message displayed and ask user to re-enter the input

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |   _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ v /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Overall Schedule
Select the expert to view the schedule:
----------------------------
|       Expert  List       |
----------------------------
| 1. Steve                 |
| 2. Vernice               |
| 3. Paul                  |
| 4. Return                |
----------------------------
Enter option (1-4) >>
```

Input data: 1 / 2 / 3

```
 _    _   ___  ___   _ _____   __  ____ _____    _   _   _ _____  __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-----------------------------------------------------------------------------------------------
Time        | Mon            | Tue            | Wed            | Thu            | Fri            |
            | 1/7/2024       | 2/7/2024       | 3/7/2024       | 4/7/2024       | 5/7/2024       |
-----------------------------------------------------------------------------------------------
8-10        | ####           | ####           | ####           | ####           | ####           |
10-12       | ####           | ####           | ####           | ####           | ####           |
12-14       | ####           | ####           | ####           | ####           | ####           |
14-16       | ####           | ####           | ####           | ####           | ####           |
16-18       | ####           | ####           | ####           | ####           | ####           |
18-20       | ####           | ####           | ####           | ####           | ####           |
-----------------------------------------------------------------------------------------------
Hours       | 0/6            | 0/6            | 0/6            | 0/6            | 0/6            |
-----------------------------------------------------------------------------------------------


Schedule for Steve
(Week 2):
-----------------------------------------------------------------------------------------------
Time        | Mon            | Tue            | Wed            | Thu            | Fri            |
            | 8/7/2024       | 9/7/2024       | 10/7/2024      | 11/7/2024      | 12/7/2024      |
-----------------------------------------------------------------------------------------------
8-10        | ####           | ####           | ####           | ####           | ####           |
10-12       | ####           | ####           | ####           | ####           | ####           |
12-14       | ####           | ####           | ####           | ####           | ####           |
14-16       | ####           | ####           | ####           | ####           | ####           |
16-18       | ####           | ####           | ####           | ####           | ####           |
18-20       | ####           | ####           | ####           | ####           | ####           |
-----------------------------------------------------------------------------------------------
Hours       | 0/6            | 0/6            | 0/6            | 0/6            | 0/6            |
-----------------------------------------------------------------------------------------------


Schedule for Steve
(Week 3):
-----------------------------------------------------------------------------------------------
Time        | Mon            | Tue            | Wed            | Thu            | Fri            |
            | 15/7/2024      | 16/7/2024      | 17/7/2024      | 18/7/2024      | 19/7/2024      |
-----------------------------------------------------------------------------------------------
8-10        | ####           | ####           | ####           | ####           | ####           |
10-12       | ####           | ####           | ####           | ####           | ####           |
12-14       | ####           | ####           | ####           | ####           | ####           |
14-16       | ####           | ####           | ####           | ####           | ####           |
16-18       | ####           | ####           | ####           | ####           | ####           |
18-20       | ####           | ####           | ####           | ####           | ####           |
-----------------------------------------------------------------------------------------------
Hours       | 0/6            | 0/6            | 0/6            | 0/6            | 0/6            |
-----------------------------------------------------------------------------------------------


Schedule for Steve
(Week 4):
-----------------------------------------------------------------------------------------------
Time        | Mon            | Tue            | Wed            | Thu            | Fri            |
            | 22/7/2024      | 23/7/2024      | 24/7/2024      | 25/7/2024      | 26/7/2024      |
-----------------------------------------------------------------------------------------------
8-10        | ####           | ####           | ####           | ####           | ####           |
10-12       | ####           | ####           | ####           | ####           | ####           |
12-14       | S093           | ####           | ####           | ####           | ####           |
14-16       | ####           | ####           | ####           | ####           | ####           |
16-18       | ####           | ####           | ####           | ####           | ####           |
18-20       | ####           | ####           | ####           | ####           | ####           |
-----------------------------------------------------------------------------------------------
Hours       | 1/6            | 0/6            | 0/6            | 0/6            | 0/6            |
-----------------------------------------------------------------------------------------------

Slot ID - Booked
#### - Available
----  - Not Available
(Press 0 To Return) Enter the Slot ID to view details: |
```

Input data: 4

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
-----------------------------
|        Admin Menu         |
-----------------------------
| |1| View Customer Details |
| |2| View Overall Schedule |
| |3| View Sales Report     |
| |4| Refund Booking        |
| |5| Return & Sign Up      |
-----------------------------
Enter option (1-5) >>
```

Input data: invalid input

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Overall Schedule
Select the expert to view the schedule:
-----------------------------
|       Expert  List        |
-----------------------------
| 1. Steve                  |
| 2. Vernice                |
| 3. Paul                   |
| 4. Return                 |
-----------------------------
Enter option (1-4) >> @
Invalid input. Please enter a number between 1 and 4: 5
Invalid input. Please enter a number between 1 and 4: a
Invalid input. Please enter a number between 1 and 4:
```

Run 28 (username = Admin and password = admin123)

Module	Input Data	Description	Expected Output
processRefund	valid booked slot id confirm: ‘Y’ or ‘y’	User inputs valid booked slot id and inputs ‘Y’ or ‘y’	displayBookingDetails
	valid booked slot id confirm: others	User inputs valid booked slot id and inputs other values from ‘Y’ and ‘y’	“Refund cancelled” and “Unsuccessful Refund” will be displayed and go back to the adminMenu
	not booked slot id	User inputs not booked slot id	“This slot is not booked” and “Unsuccessful Refund” will be displayed

			and go back to the adminMenu
	Invalid slot ID: abcd 1234 ###	User inputs invalid slot ID	Error message will be displayed and go back to the adminMenu

Actual Output

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): |
```

Input data: valid booked slotID, confirm = ‘y’ /’Y’

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): V115
-------------------------------------------------
Booking ID: V115
-------------------------------------------------
Expert: Vernice
Service: Body Waxing
Type: Consultation
Week: 4, Day: Fri, Date: 26/7/2024
Duration: 1 hour(s)
Time: 8-9
-------------------------------------------------
Customer: alicia05
Refund Amount: RM 105.00

Are you sure you want to process a refund for this booking? (Y -> Yes / Other -> No): y
Error deleting receipt file.
Refund processed successfully.
Press any key to continue . . . |
```

Input data: valid booked slotID, confirm = any key

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): S001
-------------------------------------------------
Booking ID: S001
-------------------------------------------------
Expert: Steve
Service: Body Waxing
Type: Treatment
Week: 1, Day: Mon, Date: 1/7/2024
Duration: 2 hour(s)
Time: 8-10
-------------------------------------------------
Customer: huiyee12
Refund Amount: RM 315.00

Are you sure you want to process a refund for this booking? (Y -> Yes / Other -> No): n
Refund cancelled.
Unsuccessful Refund
Press any key to continue . . . |
```

Input data: not booked slotID

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): S002
This slot is not booked.
Unsuccessful Refund
Press any key to continue . . . |
```

Input data: invalid booked slotID

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): abcd
Invalid Slot ID. No booking found.
Unsuccessful Refund
Press any key to continue . . .
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): 1234
Invalid Slot ID. No booking found.
Unsuccessful Refund
Press any key to continue . . .
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
Process Refund
Enter the Slot ID to refund (or '0' to cancel): ###
Invalid Slot ID. No booking found.
Unsuccessful Refund
Press any key to continue . . . |
```

Additional Run 1: (Show max 30 hour per week for each expert)

This run is to show the week all display unavailable if the user booked the last slot and the expert are left one more hour in week 1 29/30

Go book service > Steve > week 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Steve
(Week 1):
-------------------------------------------------------------------------------------------------
Time        | Mon            | Tue            | Wed            | Thu            | Fri            |
            | 1/7/2024       | 2/7/2024       | 3/7/2024       | 4/7/2024       | 5/7/2024       |
-------------------------------------------------------------------------------------------------
8-10        | FULL           | FULL           | FULL           | FULL           | XXXX           |
10-12       | FULL           | FULL           | FULL           | FULL           | XXXX           |
12-14       | FULL           | FULL           | FULL           | FULL           | XXXX           |
14-16       | FULL           | FULL           | FULL           | FULL           | S028           |
16-18       | FULL           | FULL           | FULL           | FULL           | XXXX           |
18-20       | FULL           | FULL           | FULL           | FULL           | XXXX           |
-------------------------------------------------------------------------------------------------
Hours       | 6/6            | 6/6            | 6/6            | 6/6            | 5/6            |
-------------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: S028

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 1
Only 1-hour consultation is available for this slot.
Enter y to continue or other to cancel: y
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Payment Process
---------------
Price: RM 200.00
Booking Tax 5%: RM 10.00
Total amount: RM 210.00

Choose payment method:
1. E-Wallet
2. Online Banking
3. Credit Card
4. Cancel Payment
Enter choice (1-4) >> 1
```

```
 _    _   ___  ___   _ ______   __  ____  _____    _   _   _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ v /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
------------------------------
|          E-WALLET          |
------------------------------
Enter customer contact (only numbers): 0123456789012
Generated OTP: 113709
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******
```

```
--------------------------------------------------
                  LUXURY BEAUTY BAR
                    Booking Receipt
--------------------------------------------------
Receipt#: S028
Date: 5/7/2024

Customer: jack123
Expert: Steve
Service: Makeup
Consultation
--------------------------------------------------
                              Sub Total:     200.00
                               Tax (5%):      10.00
                                  TOTAL:     210.00

Payment Method: E-WALLET

Booking Details:
Week 1, Fri
Time: 14-15

Thanks for your business.
--------------------------------------------------
Receipt generated and saved as Receipts\receipt_S028.txt
Press any key to continue . . .
```

Remember to close the txt file and go to check schedule

```
 _    _   ___  ___   _ ______   __  ____ _____   _   _   _ ______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Available slots for Steve Schedule:

Week 1 No more slot Available

Week 2: Available slots: 18
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||   8 |   9 |  10 |  11 |  12 |
---------------------------------------------
Week 3: Available slots: 28
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  15 |  16 |  17 |  18 |  19 |
---------------------------------------------
Week 4: Available slots: 30
---------------------------------------------
  Day     || Mon | Tue | Wed | Thu | Fri |
  Date    ||  22 |  23 |  24 |  25 |  26 |
---------------------------------------------
Enter week number [1-4/0 to Cancel] >>
```

As you can see the week 1 showing the user not available

Additional Run 2: (Show max 6 hour per day for each expert)

This run is to show day display unavailable if the user booked the last hour and the expert are left one more hour in day 1

Go book service > Vernice > week 1

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 1):
-------------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |       1/7/2024 |       2/7/2024 |       3/7/2024 |       4/7/2024 |       5/7/2024 |
-------------------------------------------------------------------------------------------------
      8-10 |          XXXX |          V007 |          V013 |          V019 |          V025 |
     10-12 |          V002 |          XXXX |          V014 |          V020 |          V026 |
     12-14 |          XXXX |          XXXX |          XXXX |          XXXX |          V027 |
     14-16 |          V004 |          V010 |          V016 |          XXXX |          V028 |
     16-18 |          XXXX |          V011 |          V017 |          XXXX |          V029 |
     18-20 |          V006 |          V012 |          V018 |          V024 |          V030 |
-------------------------------------------------------------------------------------------------
     Hours |           5/6 |           4/6 |           1/6 |           3/6 |           0/6 |
-------------------------------------------------------------------------------------------------
Please Q to quit
Enter the slot ID you want to book: V006

Available services:
1. Makeup
2. Body Waxing
3. Lazer Hair Removal
Enter service number: 3
Only 1-hour consultation is available for this slot.
Enter y to continue or other to cancel: y
```

You can see that when only left one hour in that day the it will show and remind user that only can choose the 1 hour consultation

```
 _    _   ___  ___   _ ______   __  ____  _____    _    _    _ _______   __
| |  | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_    _\ \ / /
| |  | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|


Booking Information:
--------------------------------------------------
Booking ID: V006
--------------------------------------------------
Expert: Vernice
Service: Lazer Hair Removal
Type: Consultation
Week: 1, Day: Mon, Date: 1/7/2024
Duration: 1 hour(s)
Time: 18-19
--------------------------------------------------

Do you want to confirm this booking? (Y to confirm others to Cancel):
```

```
 _     _   ___  ___    _ ______   __  ____  _____     _    _    _ _______   __
| |   | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |   | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|
--------------------------------
|          E-WALLET          |
--------------------------------
Enter customer contact (only numbers): 0123456789012
Generated OTP: 103240
A 6-digit OTP has been sent to your contact. Please enter it to make a payment.
Enter OTP (6 digits): ******
```

```
--------------------------------------------------
                  LUXURY BEAUTY BAR
                    Booking Receipt
--------------------------------------------------
Receipt#: V006
Date: 1/7/2024

Customer: jack123
Expert: Vernice
Service: Lazer Hair Removal
Consultation
--------------------------------------------------
                              Sub Total:     300.00
                               Tax (5%):      15.00
                                  TOTAL:     315.00

Payment Method: E-WALLET

Booking Details:
Week 1, Mon
Time: 18-19

Thanks for your business.
--------------------------------------------------
```

Remember close the txt file and then go back to check schedule

Vernice > Week1

```
 _     _   ___  ___    _ ______   __  ____  _____     _    _    _ _______   __
| |   | | | \ \/ / | | |  _ \ \ / / | __ )| ____|  / \ | | | |_   _\ \ / /
| |   | | | |\  /| | | | |_) \ V /  |  _ \|  _|   / _ \| | | | | |  \ V /
| |__| |_| |/  \| |_| |  _ < | |   | |_) | |___ / ___ \ |_| | | |   | |
|_____\___//_/\_\\___/|_| \_\|_|   |____/|_____/_/   \_\___/  |_|   |_|

Schedule for Vernice
(Week 1):
-------------------------------------------------------------------------------------------
      Time |           Mon |           Tue |           Wed |           Thu |           Fri |
           |      1/7/2024 |      2/7/2024 |      3/7/2024 |      4/7/2024 |      5/7/2024 |
-------------------------------------------------------------------------------------------
      8-10 |          FULL |          V007 |          V013 |          V019 |          V025 |
     10-12 |          FULL |          XXXX |          V014 |          V020 |          V026 |
     12-14 |          FULL |          XXXX |          XXXX |          XXXX |          V027 |
     14-16 |          FULL |          V010 |          V016 |          XXXX |          V028 |
     16-18 |          FULL |          V011 |          V017 |          XXXX |          V029 |
     18-20 |          FULL |          V012 |          V018 |          V024 |          V030 |
-------------------------------------------------------------------------------------------
     Hours |           6/6 |           4/6 |           1/6 |           3/6 |           0/6 |
-------------------------------------------------------------------------------------------
Enter to Back to Menu
Press any key to continue . . .
```

As you can see that the day that expert has worked a full 6 hours is already not available.