Full Requirement Documentation for a Coffee Order System

"The Grind"

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Requirements

The Coffee Order System will have all the following requirements. The requirements are split into sections; the sections are customer database, payment handling, GUI, order handler, and nonfunctional requirements. The following requirements will be labeled to represent priority.

Customer Database Requirements:

1.1) A customer can be added to the database.	Must Have
1.2) A customer must give their first name, last name, and phone number when trying to be added to the database.	Must Have
1.3) Once added to the database, they are eligible to start receiving reward points. Reward points will start off at 0. Each dollar that the customer spends will be rewarded with 10 reward points. If it is not a whole number, then it will round down.	Need to Have
1.4) Customers will be identified by their phone number.	Must Have
1.5) Customers in the database will be ordered by first name, last name, and then their phone number. An anonymous customer will always be on the top of the list when trying to order.	Need to Have

Payment Handling:

2.1) The system will allow payment through card or award points.	Must Have
2.2) Reward points will be tracked every time it is placed.	Need to Have
2.3) If the payment was through card and the customer was a customer in the database, then they will be rewarded with points. If the payment was through their reward points, then the number of points used will be deducted from their total reward points amount from their account.	Must Have
2.4) As the customer is ordering their total will be calculated. Each time a customer adds an item or customizes a drink the prize will be added onto the total amount. Once the order is complete the appropriate tax rate will be applied to the total cost.	Must Have
2.5) After payment, a receipt will be shown on the screen. It will include their order and total amount they paid for. It will also include the last four digits of the customer's card number and the number of reward points earned. Additionally, it will show the number of reward points left if they are customers in the database.	Must Have
2.6) The type of payment and the amount will be tracked in order to add them to the Order Record.	Need to Have

GUI:

3.1) The system will contain three buttons at the menu screen. The buttons will be Order Drink, Customer List, and Management Tools.	Must Have
3.2.0) If the Customer List button was clicked, then it would display all the customers in the database. It will show their full name, phone number, and reward points. A button will be next to each customer's information to start ordering drinks for that specific customer. There will be two additional buttons on this page. The first button is to add a customer to the database. The second button will be to go to the main menu.	Need to Have
3.2.1) If the add a customer to the database button was clicked, then another page will display three fields. The fields will be used to type in the customer's first name, last name, and phone number. There will also be a cancel button, which will take the user back to the main menu. Additionally, an add button will be next to the cancel button to confirm the information and save the customer to the database.	Need to Have
3.3) If the Management Tools was clicked, then it will bring the user to another page. This page will include two buttons. The first button is to generate a CSV sales report, which will generate a CSV file of all sales and open it in Excel. The second button will be used to return to the main menu.	Need to Have
3.4.0) If the Order Drink button was clicked, then it will open another page that will display various drink options, drink prices, and drink sizes. Once the drinks are selected, it can be customized. There will be various customizations that can be made, which will alter the price of the drink. It will display a left and a right pane. The left pane will display the drink and its customization, and the right pane will display the price for each drink and customization. There will always be a button to cancel the order to go back to the main menu.	Must Have
3.4.1) Once one drink is ordered then a button will appear to proceed to payment.	Must Have
3.5.0) Once at the payment screen there will be three buttons. One button would be used to pay with card. The second button will be used to pay with reward points. The third button will be the button to cancel the order and go back to the main menu.	Must Have
3.5.1) If the pay with card button was clicked, then it will bring the user to a screen with two fields. The first field would be used to enter the user's card number. The second field will be used to enter the user's card's expiration date.	Must Have
3.6) In the receipt screen, there will be a button to go back to the main menu.	Must Have

Order Handler:

4.1) As the user is adding items into the system when placing the order, the system will keep track of the price and the items. There will be two panes when on the ordering screen. The left pane will be where the customers will be customizing and adding their drinks. The right pane will be all their items the customer chose and the price.	Must Have
4.2) There can be as many drinks and customization added to the order as the user wants before they proceed to payment handling.	Need to Have
4.3) The system will be able to cancel the order whenever the user pleases, which will take them back to the main menu.	Must Have

Nonfunctional Requirements:

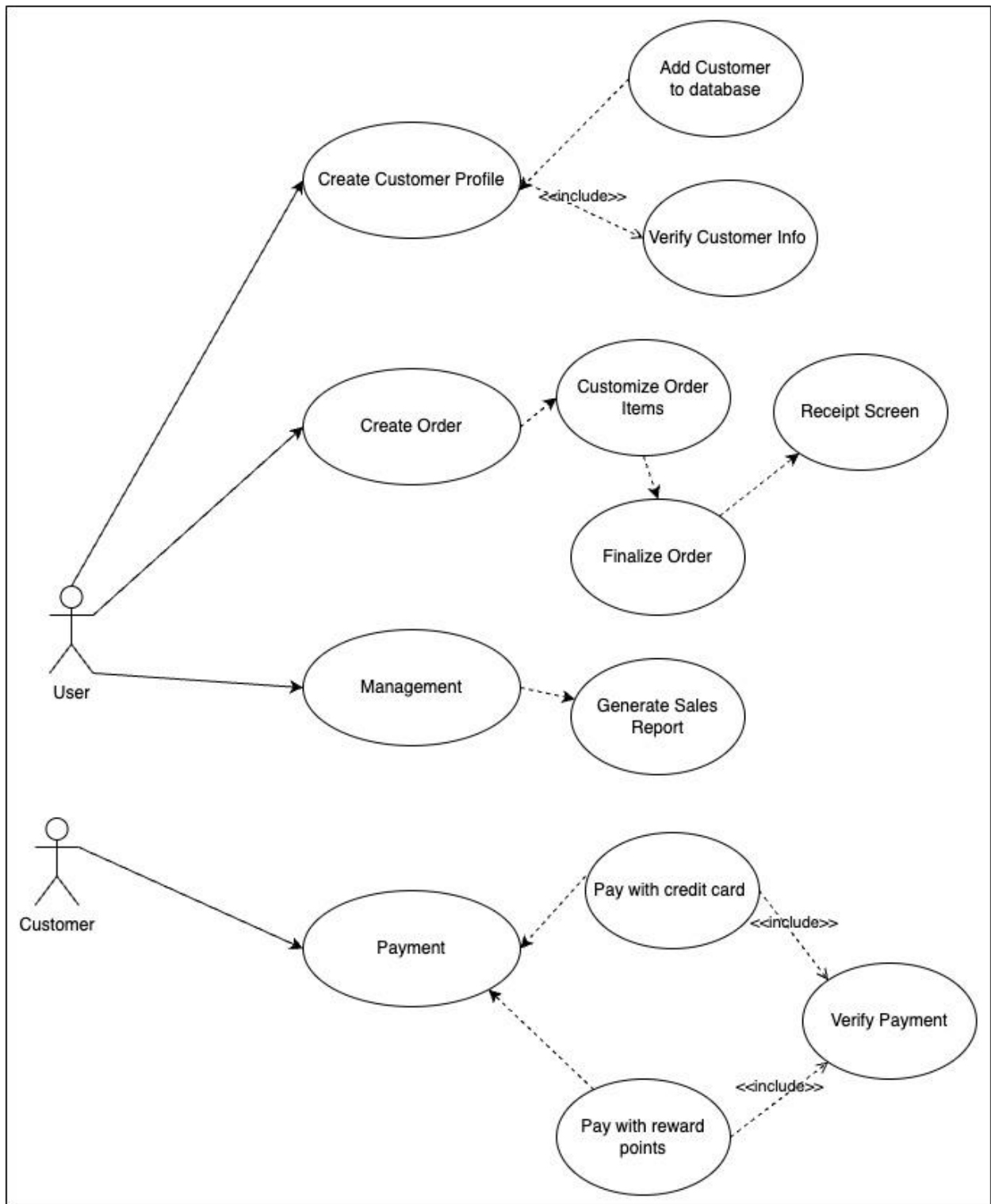|	
5.1) The user will be able to see payment and order details. They will be able to look at the sales report. Additionally, they will be able to look at the customers in the database with all their information.	Need to Have
5.2) The system will run on Microsoft Windows 10 or newer. Other systems may work; however it is not guaranteed that all of the system functions will be working at max potential.	Need to Have

Decision Tables

This table represents customer payment methods and reward points earned as well as whether to deny services.

Conditions	Customer Payment				
Named	T	T	T	T	F
Sufficient Reward Points	F	F	T	F	F
Valid Credit Card	T	F	F	F	T
Credit Card Transaction	T	T	F	F	T
Reward Points Transaction	F	F	T	T	F
Actions					
Pay with Credit	T	F	F	F	T
Pay with Reward Points	F	F	T	F	F
Earn Reward Points	T	F	F	F	F
Deny Service	F	T	F	T	F

This table determines whether the final transaction, with card or reward points, was a valid transaction as well as actions to properly print a receipt.

Conditions	Receipt and Total		
Valid Card Transaction	T	T	-
Valid Reward Points Transaction	-	-	T
Existing Customer Information	T	F	T
Actions			
Autofill Customer Name	T	F	T
Autofill Customer Number	T	F	T
Display Total Reward Points	T	F	T
Print Receipt	T	T	T

Add Customer
to database

Create Customer Profile

<<include>>

Verify Customer Info

Create Order

Customize Order
Items

Receipt Screen

Finalize Order

User

Management

Generate Sales
Report

Customer

Payment

Pay with credit card

<<include>>

Verify Payment

Pay with reward
points

<<include>>

Use Case Flow of Events

Create Customer Profile:

- *Preconditions:* Customer must not have a current profile in database
- *Main Flow*: The User will select the "Add New Customer" Button which will display text fields required such as First Name, Last Name, and Phone Number. Once all fields are filled with customers information the user will have the option to click on "Add customer" sub-flow S-1: Add Customer will be performed. If user clicks on "Cancel" Button sub-flow S-2: Cancel Customer will be performed.

- *Sub-Flows:*
  S-1: <u>Add Customer:</u> Once the user clicks on "Add Customer" button, the customer's information will be added to the database for future purchases and reward points. Then...

  S-2: <u>Cancel:</u> If User clicks on "Cancel" button the user will be taken back to the main menu and all input from the "Add New Customer" screen will be erased and not be added to the database.

- *Alternate Flows:*
  E-1: If information input by the user is not valid an error message will be displayed

Create Order:

- *Preconditions:* Customer must have an account in the database

- *Main Flow:* The User will create an order by clicking on "Order Drink" button which will follow sub-flow s-1: Order Drink. The user will then be able to use the customization options to ensure that the customer's desired order customizations are met. Once all customizations are met the user will click on "Payment" Button which will follow sub-flow S-2: Finalize Order. Which will prompt the user to payment screen.

- *Sub-Flows:*
  S-1: <u>Order Drink:</u> Once the user clicks on "Order Drink" Button, they will be directed to the drink customization screen to allow the drink to be modified, Items will be set to base values and will be able to be modified to meet customer's needs.
  S-2: <u>Finalize Order:</u> Once the user clicks on "Finalize Order" Button, they will be directed to a payment screen and will ask for Customer's information such as Phone Number and Credit Card Number.
  S-3: <u>Receipt Screen:</u> Once the user finalizes the customer's order the order summary and customer's total amount will be displayed.

- *Alternate Flows:*

  E-1: <u>Anonymous Customers</u>: If the customer is not in the database and does not want to be added to the rewards program, the user will be able to add the transaction to the sales report by clicking on a button that will automatically set values on CSV to only show transaction amount and null customer information

  E-2: <u>Canceling Order:</u> Orders can be cancelled at any time during the customization stage and will be returned to the main menu.

Management Tools:

- *Main Flow:* In the Management screen the user will have two buttons one is "Main Menu" this will follow sub-flow s-1: Return to Main Menu. This will allow the user to exit the management screen and return to the main menu. The user will also be able to click on "Generate Sales Report" this will follow sub-flow S-2: Sales Report. This will generate a sales report for all transactions saved in the database. The CSV file with all transactions will then be displayed to the user.

- *Sub-Flows:*

  S-1: <u>Return to Main Menu:</u> If the user clicks on the "Main Menu" button this will return the user back to the main menu of the application

  S-2: <u>Sales Report</u>: If the user clicks on "Generate Sales Report" button, a CSV file containing all the customer's transactions will be generated and displayed in Microsoft Excel. This file will contain information such as Customer's Name, Phone Number, and reward points

Payment:

- *Precondition:* The customer must pay with a credit card or reward points

- *Main Flow:* the user will click on "Proceed to Payment" button which will display sub-flow S-1: Payment. In the payment screen there will be a "Credit Card" button, this button will follow sub-flow S-2: Credit Card. This will allow the customer to pay for the order using a credit card. If the customer would like to use reward points the user will select "Redeem Rewards" button, this will follow sub-flow S-3: Rewards. This will allow reward points to be used to pay for the order. Once the payment process is complete the user will be returned to a receipt screen. The Receipt Screen will display the customer's order details.

- *Sub-Flows:*

  S-1: <u>Payment</u>: Once the "Proceed to payment" button is clicked the user will be prompted to the payment screen. This will display fields such as payment method, and text fields to receive Credit Card Number. Once all fields are complete with valid payment information the user will be prompted to a receipt screen.

S-2: <u>Credit Card</u>: If the user clicks on "Credit Card" button the program will display the credit card payment screen. The credit card payment screen will have several text fields that require information such as First name, Last Name, Phone Number, and Credit Card Number. Once all fields are complete the provided credit card number will be validated.

S-3: <u>Rewards</u>: The reward program allows customers to pay for orders using reward points. If the user clicks on the "Redeem Rewards" button, The customers information containing amount of reward points the have will be shown. If the client has sufficient reward points, then the transaction will be successful.

- *Alternate Flows:*

E-1: <u>Invalid Credit Card Number:</u> If the credit card number provided is not valid and error message will be displayed

E-2: <u>Insufficient Rewards:</u> If a customer has insufficient reward points to pay for the order an insufficient funds message will display