Candidate Code: kly215

Criterion B: Design

I. Flowchart

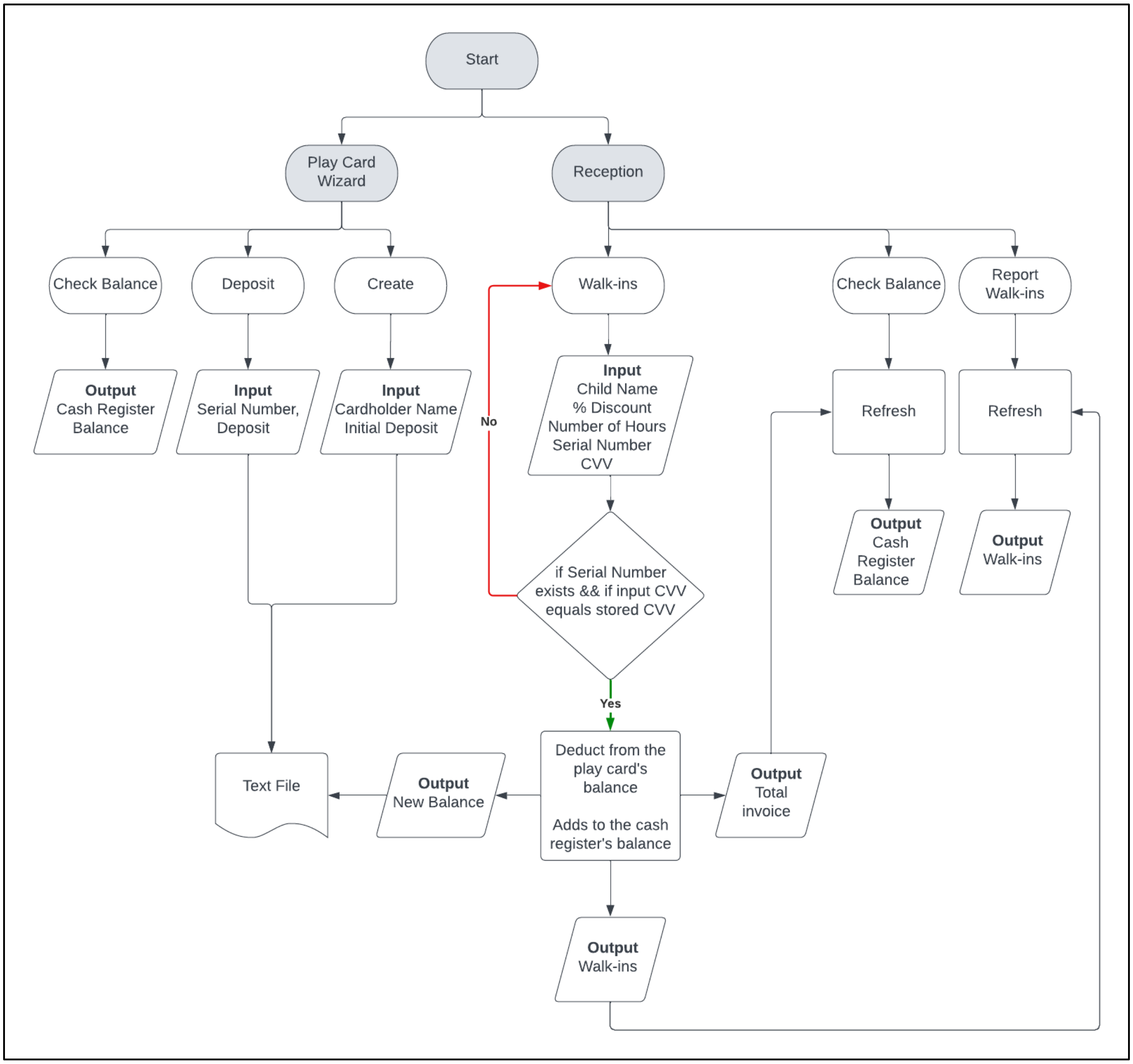

Start
Play Card Wizard
Reception
Check Balance
Deposit
Create
Walk-ins
Check Balance
Report Walk-ins
Output Cash Register Balance
Input Serial Number, Deposit
Input Cardholder Name Initial Deposit
No
Input Child Name % Discount Number of Hours Serial Number CVV
Refresh
Refresh
Output Cash Register Balance
Output Walk-ins
if Serial Number exists && if input CVV equals stored CVV
Yes
Text File
Output New Balance
Deduct from the play card's balance
Adds to the cash register's balance
Output Total invoice
Output Walk-ins

Figure 1 Flowchart for the Application

II. UML Class Diagrams

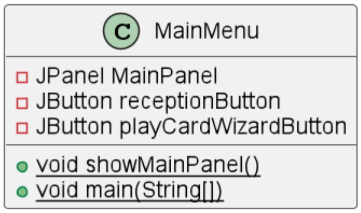


Figure 2 MainMenu UML

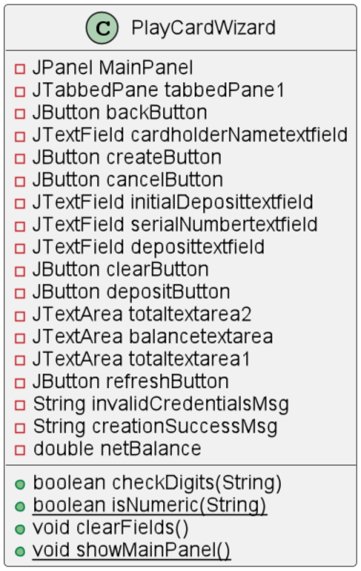


Figure 3 PlayCardWizard UML

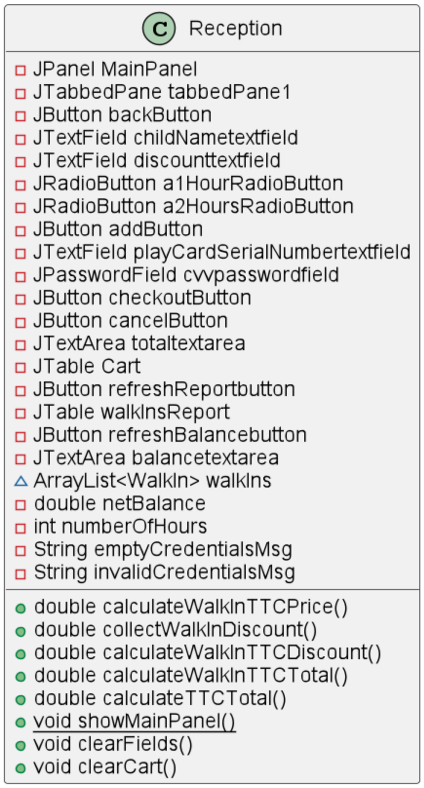

C
Reception
JPanel MainPanel
JTabbedPane tabbedPane1
JButton backButton
JTextField childNametextfield
JTextField discounttextfield
JRadioButton a1HourRadioButton
JRadioButton a2HoursRadioButton
JButton addButton
JTextField playCardSerialNumbertextfield
JPasswordField cvvpasswordfield
JButton checkoutButton
JButton cancelButton
JTextArea totaltextarea
JTable Cart
JButton refreshReportbutton
JTable walkInsReport
JButton refreshBalancebutton
JTextArea balancetextarea
ArrayList<WalkIn> walkIns
double netBalance
int numberOfHours
String emptyCredentialsMsg
String invalidCredentialsMsg
double calculateWalkInTTCPrice()
double collectWalkInDiscount()
double calculateWalkInTTCDiscount()
double calculateWalkInTTCTotal()
double calculateTTCTotal()
void showMainPanel()
void clearFields()
void clearCart()

Figure 4 Reception UML

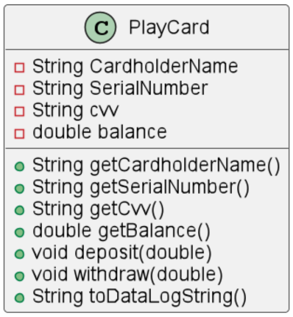


Figure 5 PlayCard UML

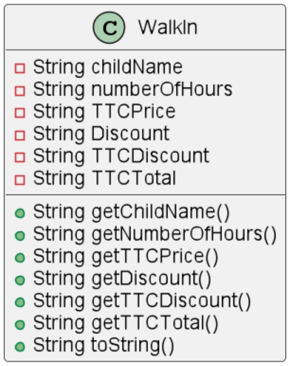


Figure 6 WalkIn UML

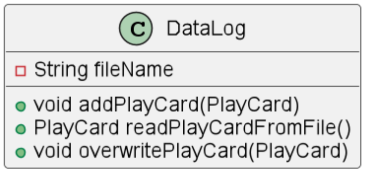
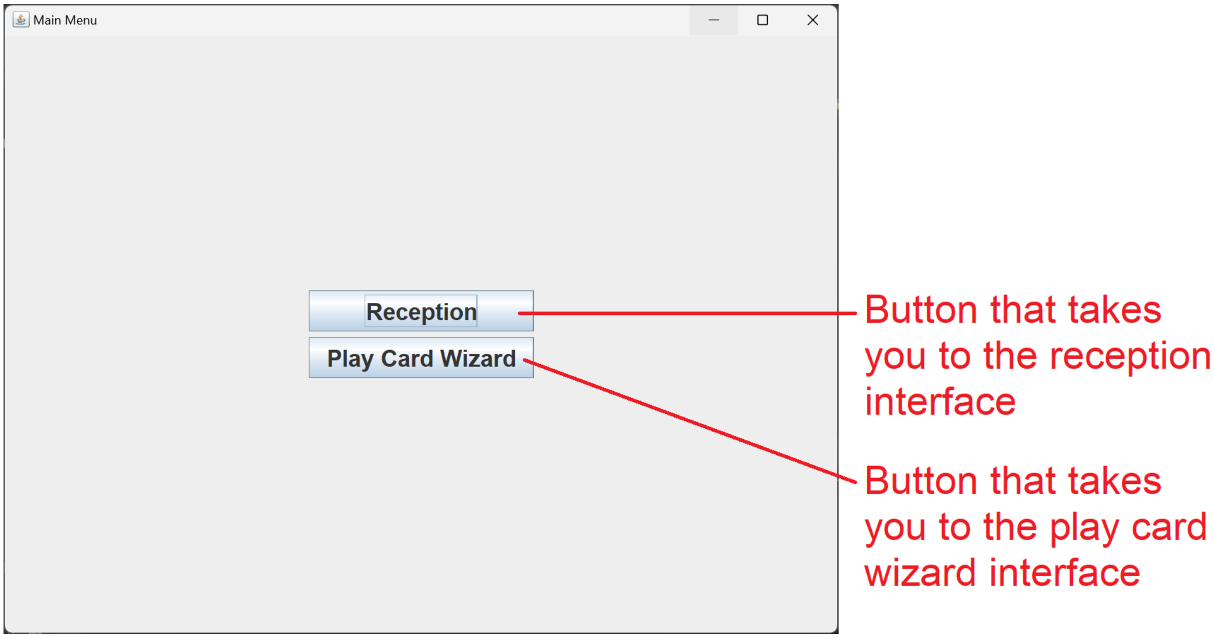

C DataLog
String fileName
void addPlayCard(PlayCard)
PlayCard readPlayCardFromFile()
void overwritePlayCard(PlayCard)

Figure 7 DataLog UML

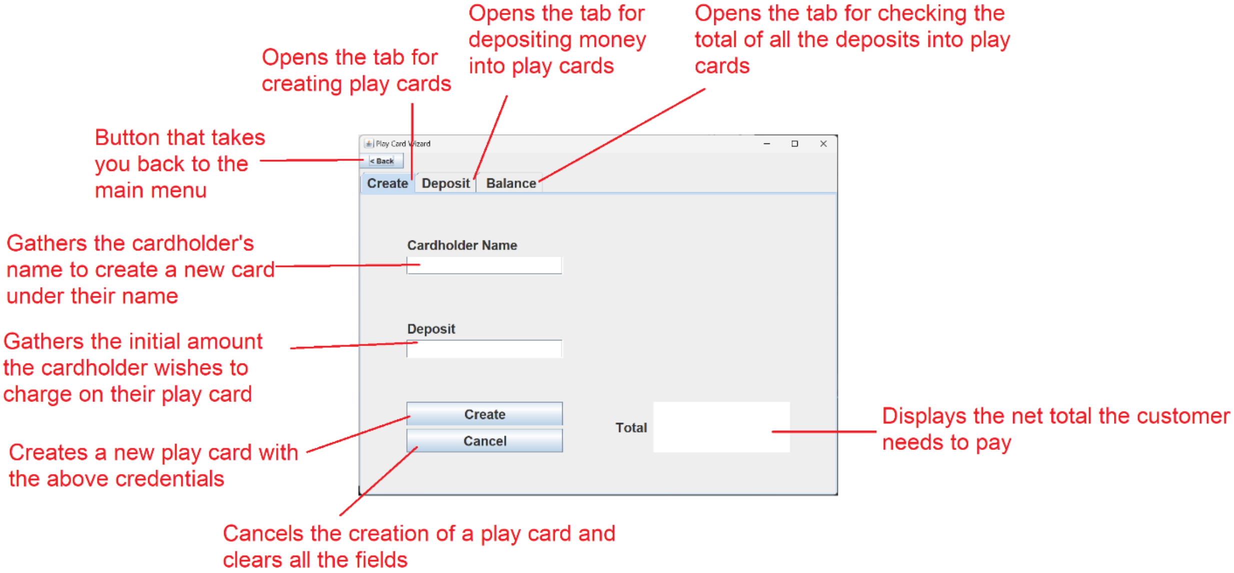
III. Graphic User Interface



Button that takes you to the reception interface

Button that takes you to the play card wizard interface

Figure 8 Main Menu Annotated



Opens the tab for creating play cards

Opens the tab for depositing money into play cards

Opens the tab for checking the total of all the deposits into play cards

Button that takes you back to the main menu

Gathers the cardholder's name to create a new card under their name

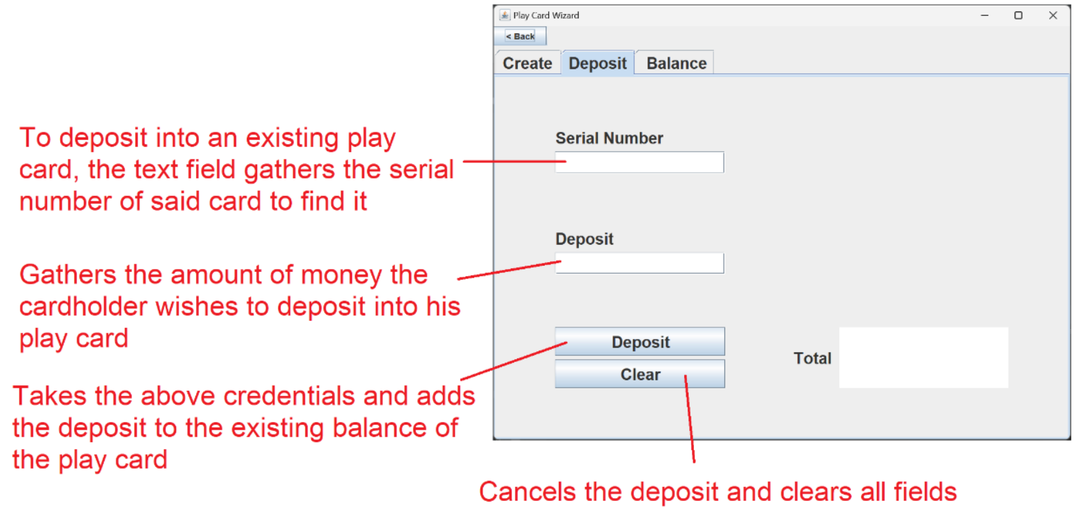
Gathers the initial amount the cardholder wishes to charge on their play card

Creates a new play card with the above credentials

Cancels the creation of a play card and clears all the fields

Displays the net total the customer needs to pay

Figure 9 PlayCardWizard, Create Play Cards Annotated



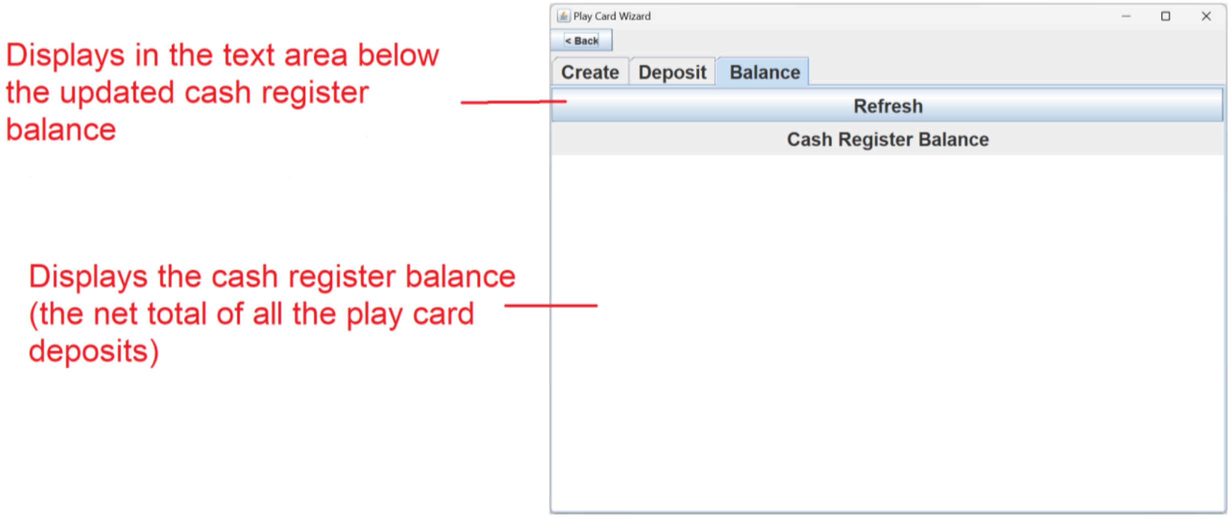
To deposit into an existing play card, the text field gathers the serial number of said card to find it

Gathers the amount of money the cardholder wishes to deposit into his play card

Takes the above credentials and adds the deposit to the existing balance of the play card

Cancels the deposit and clears all fields

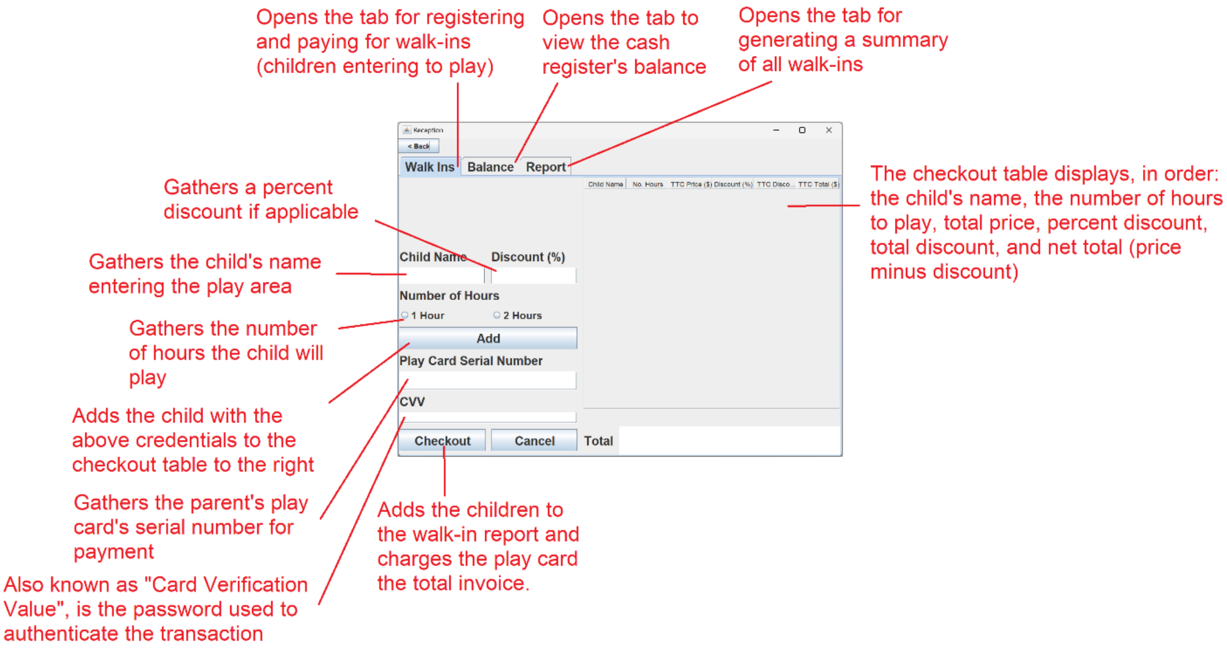
Figure 10 PlayCardWizard, Deposit into Play Cards Annotated



Displays in the text area below the updated cash register balance

Displays the cash register balance (the net total of all the play card deposits)

Figure 11 PlayCardWizard, View Balance Annotated



Opens the tab for registering and paying for walk-ins (children entering to play)

Opens the tab to view the cash register's balance

Opens the tab for generating a summary of all walk-ins

Gathers a percent discount if applicable

The checkout table displays, in order: the child's name, the number of hours to play, total price, percent discount, total discount, and net total (price minus discount)

Gathers the child's name entering the play area

Gathers the number of hours the child will play

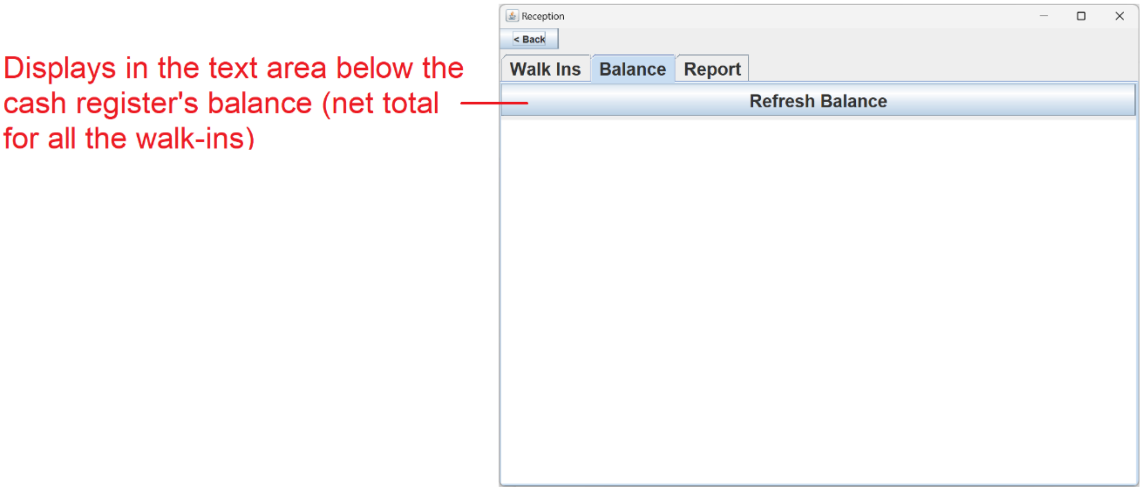
Adds the child with the above credentials to the checkout table to the right

Gathers the parent's play card's serial number for payment

Also known as "Card Verification Value", is the password used to authenticate the transaction

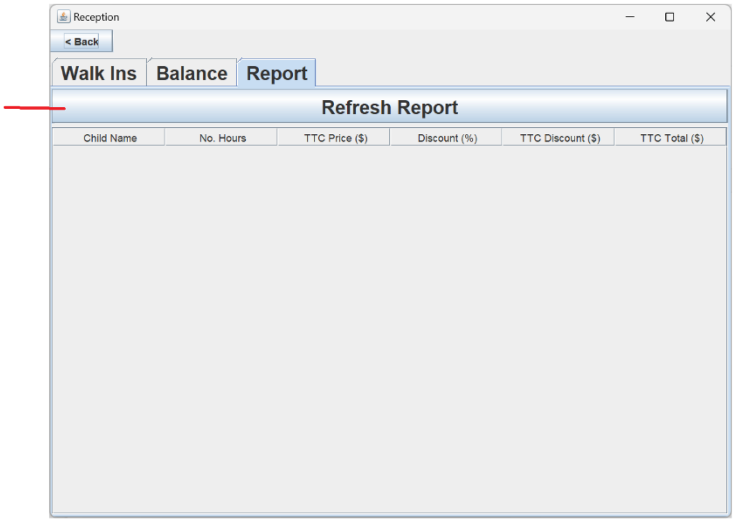
Adds the children to the walk-in report and charges the play card the total invoice.

Figure 12 Reception, Register Walk-ins Annotated



Displays in the text area below the cash register's balance (net total for all the walk-ins)

Figure 13 Reception, View Balance Annotated



Child Name	No. Hours	TTC Price ($)	Discount (%)	TTC Discount ($)	TTC Total ($)

Displays in the table below all the walk-ins registered so far

Figure 14 Reception, View Walk-Ins Report Annotated

IV. Schedule for Testing the Product

This application consists of two main sections: the Play Card Wizard, and the Reception. The application will be developed on the basis of modular programming, where the candidate develops both sections independently and then joins them together once completed.

At this point in the project, the graphical user interfaces are already done (as seen above). All the candidate has left is to write the code that makes the GUIs functional. It will take an estimated time of three weeks to complete.

Play Card Wizard	Reception
• Write an abstract class representing a play card along with its necessary attributes and methods that allow for its creation in the Play Card Wizard interface. • Code the buttons to gather the values necessary for the creation of a play card from the text fields. • Write the necessary secondary storage methods that would allow for depositing into the existing card at a	• Create an abstract walk-in class with the necessary attributes and methods that allow for its creation in the reception interface. • Code the buttons to gather the values necessary for the creation of a walk-in from the input fields. • Write methods that allow the reception to access the play cards' balances to charge it for walk-ins. • Add the necessary authentication methods to ensure that only the

later stage and to withdraw from it at the Reception. • Store and add the deposits to the cash register's balance.	cardholder can access their play card (using a CVV) • Store and add the walk-ins to the walk-ins' report. • Store and add the walk-in charges to the cash register's balance.

V. Test Plan

Action test	**How to test and expected result**
Test if the application starts up correctly	Click "Run" from the IDE and wait for the main menu to appear.
Check if the Play Card Wizard starts up correctly	Click "Play Card Wizard" and wait for the window to appear with all three tabs and their constituents.
Check if creating a play card works	Add sample values for the cardholder's name and initial deposit and check for the dialogue window to pop up and check if the text file for this play card is created.
Check if the play card is stored appropriately	Check if the text file has the serial number as its title and consists of the cardholder's name, CVV, and balance on separate lines.
Check if depositing into a play card works	Deposit into the created play card and wait for the dialogue window appears. Check in the text file if the balance increases.
Check if the Wizard's cash register balance works	Refresh the balance tab and check if the balance equals the sum of my initial deposit and second deposit.
Check if the reception starts up correctly	Click "Reception" and wait for the window to appear with all three tabs and their constituents.
Check if registering a walk-in works	Add sample values for the walk-in's child name, percent discount, number of hours, and click "Add". The input information should appear on the checkout table to the right.
Check if checking out works	Add the created play card's serial and CVV then click "Checkout" and wait for the dialogue to appear and then check the card's text file for if the balance decreases. The input fields and the table should clear.

Check if the cancel button works	Add sample values in the input fields then click “Cancel”. The fields should empty.
Check if the reception’s cash register balance works	Refresh the balance tab and check if the balance equals the sum of all walk-in charges.
Check if the walk-in reports work	Click “Refresh” and wait for all the registered walk-ins to appear in the table.