



SOFE3650 – Assignment 2

Group 3

Group Members

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Quality Attribute Scenarios :

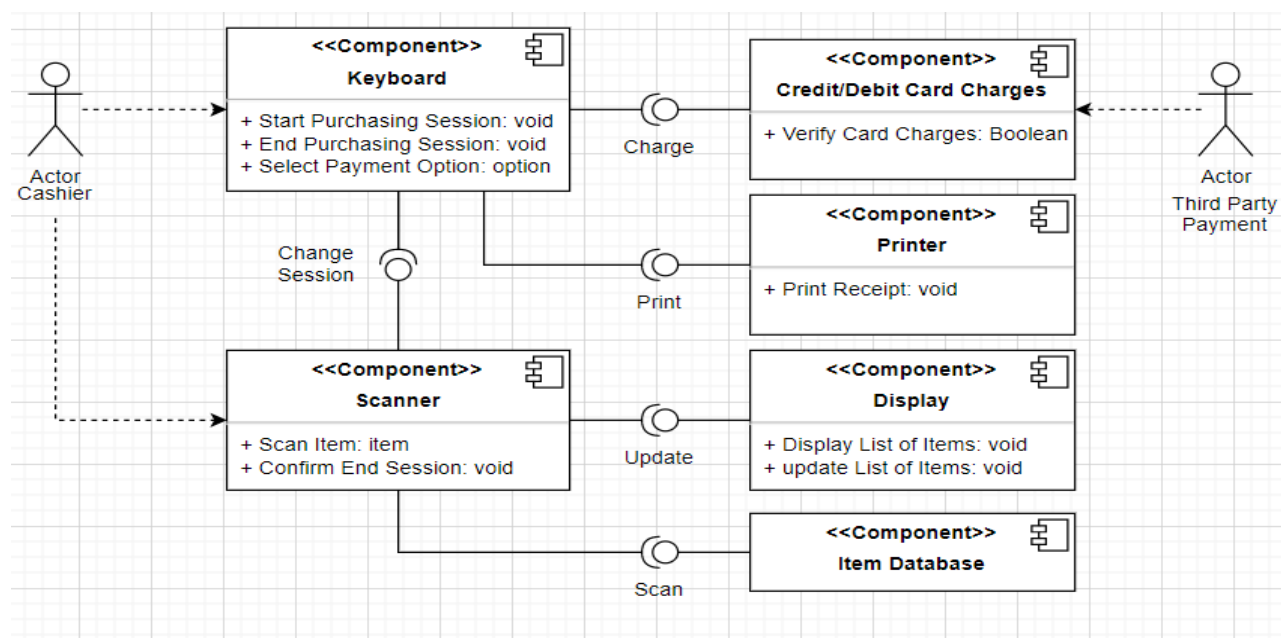
ID	Quality Attribute	Scenario
QA-1	Availability	Due to software/network issues, a failure occurs in the Cash register system under normal operating conditions. The system resumes operation in at most 3 minutes.
QA-2	Interoperability	In order to retrieve data regarding different products, the system accepts requests from the user and connects to the external database. The system completes the entire process within 30 seconds and resumes normal operation.
QA-3	Security	The cashier attempts to log in to the system during normal operations. The system responds by authenticating the user's credentials. If the entire system is compromised, the recovery time is less than 2 hours

QA-4	Usability	When the user (cashier) clicks on any button or option, the associated data or event is displayed within 2 seconds.
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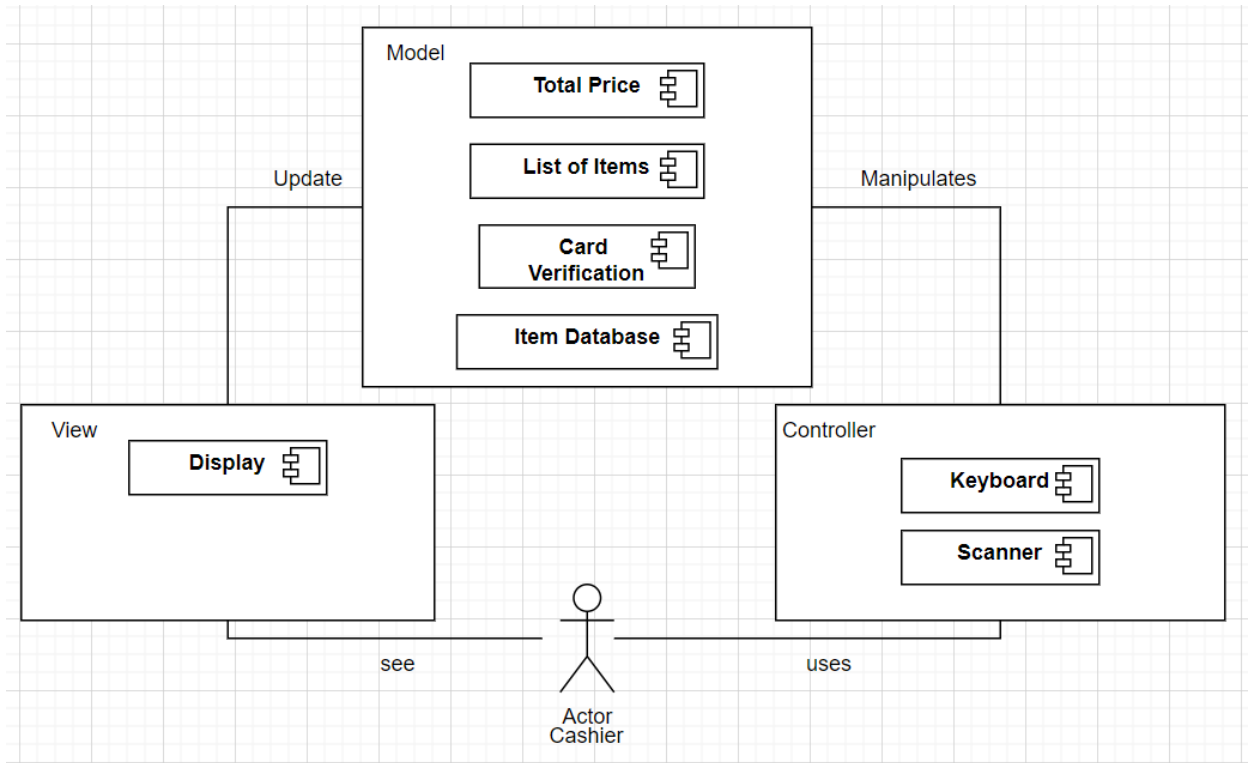
Constraints

CON1	When a product has been identified using a barcode scanner, its name and price will be displayed on a display
CON2	A Cashier can cancel the a purchasing session at anytime, nullifying all the items that have been scanned from the start of the session
CON3	It will be possible to change hardware platforms in the future
CON4	The Cash Register will contain a local database of products

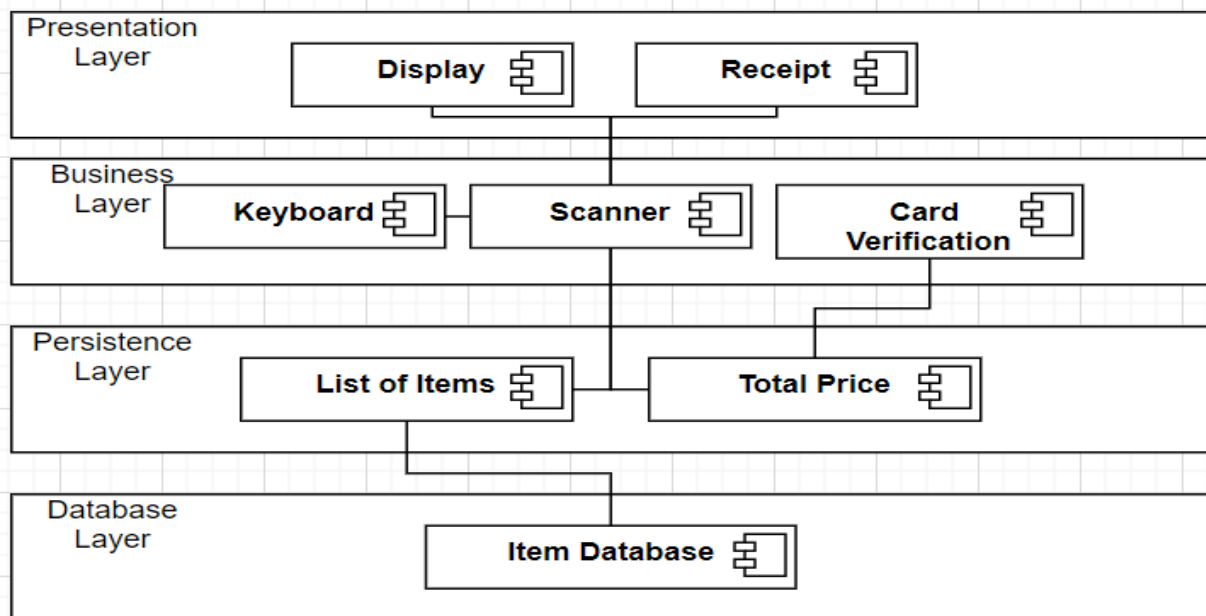
Component Dependency Diagram



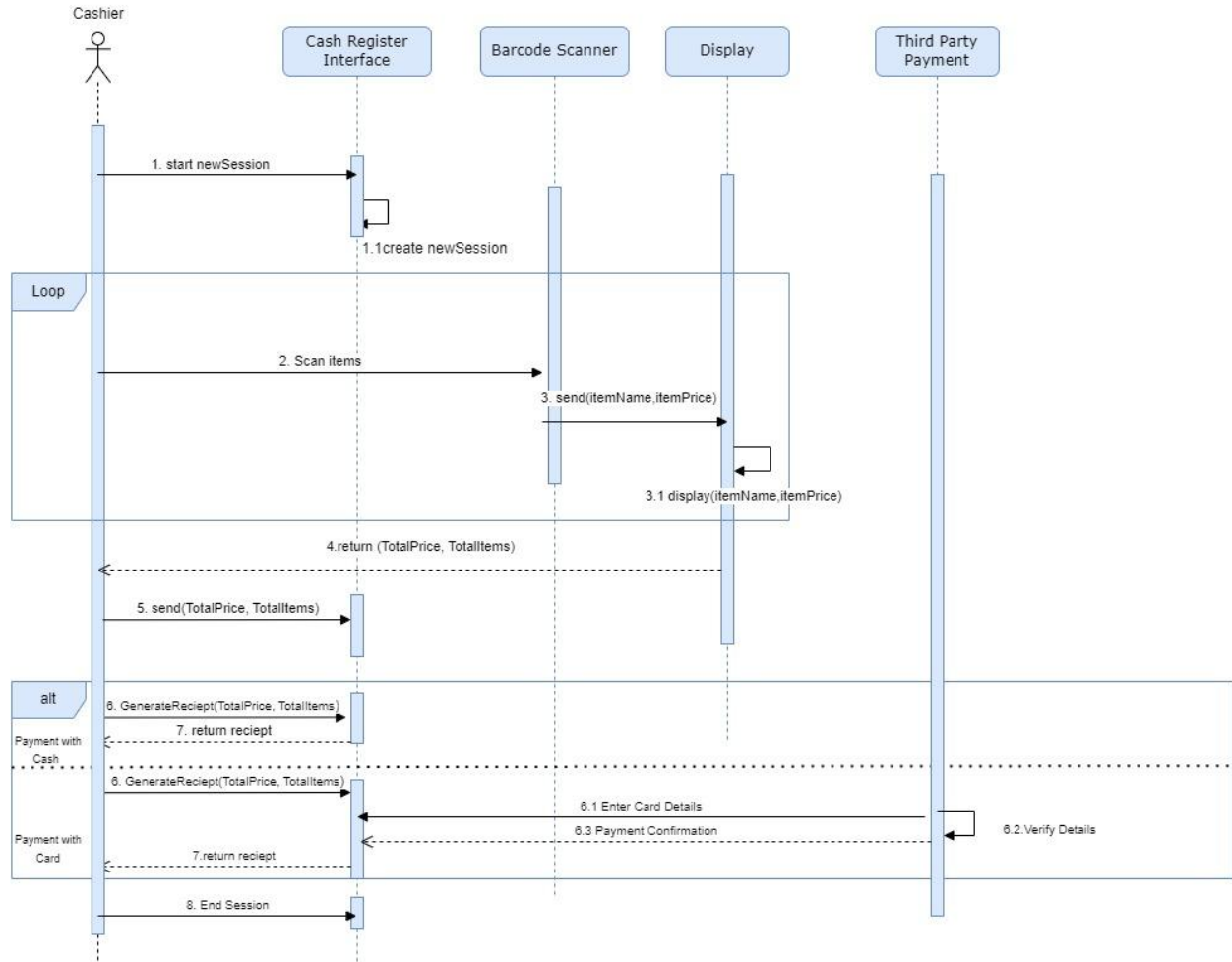
MVC



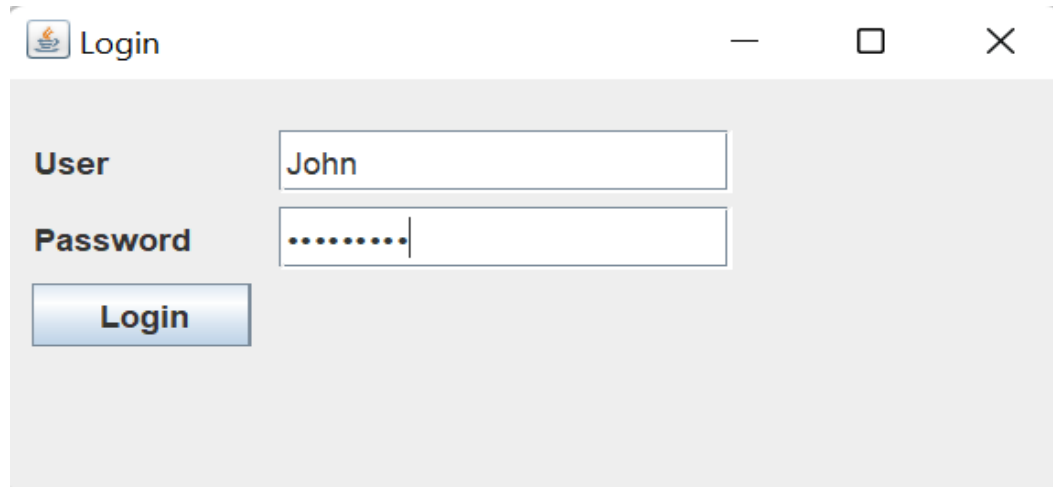
Layer Pattern



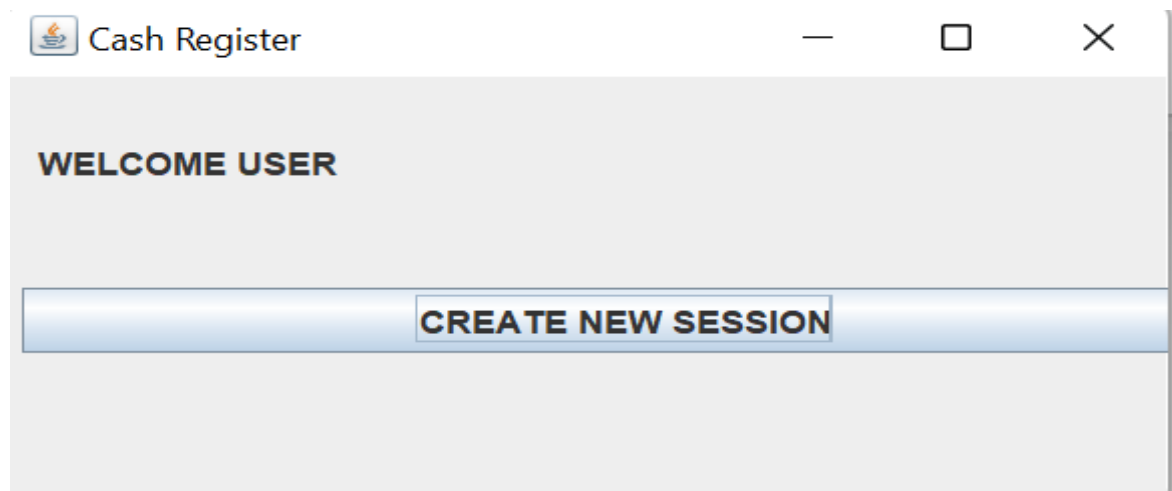
Sequence Diagram



Java Swing GUI

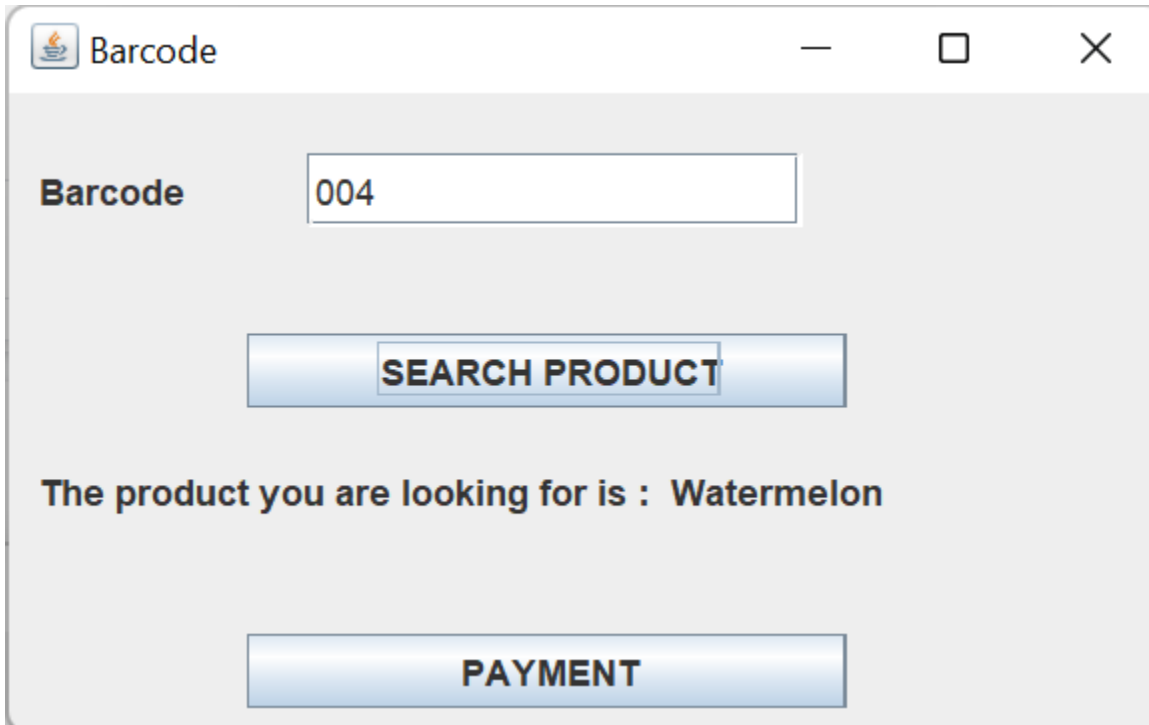


The user (cashier) must login to the system using valid credentials in order to use the cash register system.



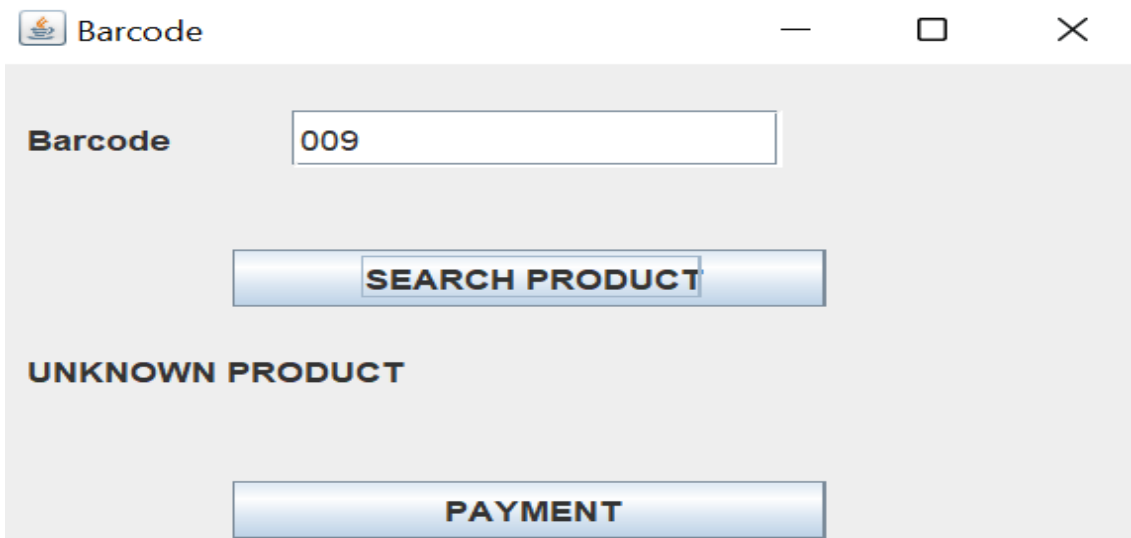
After a successful login, the system will prompt the user to create a new session as shown in the picture above.

The Barcode GUI allows the cashier to search for the product that the barcode scanner cannot identify, the code can be entered via the keyboard.



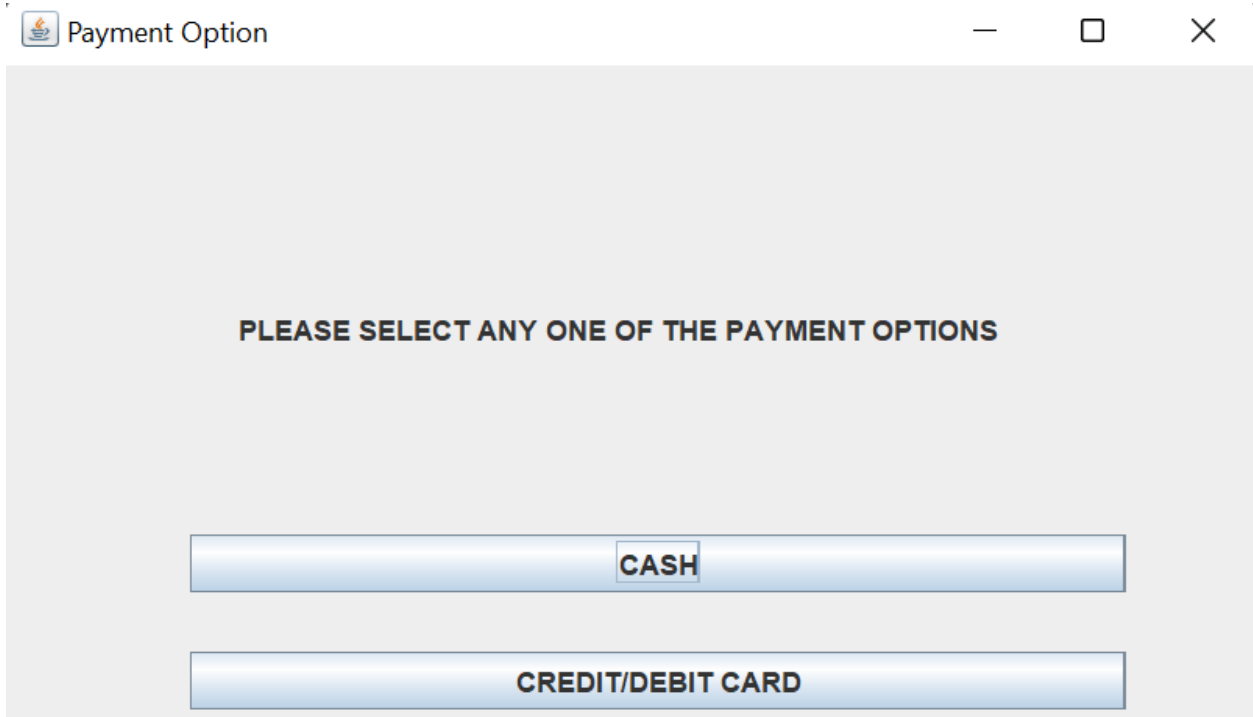
The image shows a window titled "Barcode" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there is a label "Barcode" followed by a text input field containing the value "004". Below the input field is a button labeled "SEARCH PRODUCT". Underneath the button, the text "The product you are looking for is : Watermelon" is displayed. At the bottom of the window is another button labeled "PAYMENT".

If the barcode is not found the following message is displayed:



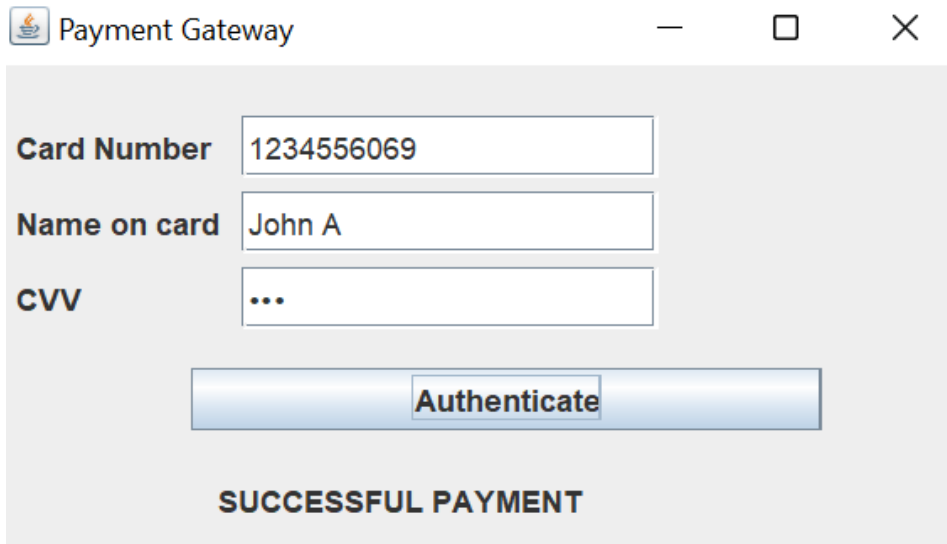
The image shows a window titled "Barcode" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there is a label "Barcode" followed by a text input field containing the value "009". Below the input field is a button labeled "SEARCH PRODUCT". Underneath the button, the text "UNKNOWN PRODUCT" is displayed. At the bottom of the window is another button labeled "PAYMENT".

The cashier can click on the payment button to select one of the following options:



A screenshot of a software window titled "Payment Option". The window has a standard title bar with a minimize button, a maximize button, and a close button. The main content area is light gray and contains the text "PLEASE SELECT ANY ONE OF THE PAYMENT OPTIONS" in bold, black, uppercase letters. Below this text are two blue, rectangular buttons with white text. The first button is labeled "CASH" and the second button is labeled "CREDIT/DEBIT CARD".

If the cashier selects the credit/debit card payment option a payment gateway GUI is displayed to the cashier. The credit/debit card transactions will be handled by this third party system. Please check the image below.



A screenshot of a software window titled "Payment Gateway". The window has a standard title bar with a minimize button, a maximize button, and a close button. The main content area is light gray and contains three input fields with labels to their left. The first field is labeled "Card Number" and contains the text "1234556069". The second field is labeled "Name on card" and contains the text "John A". The third field is labeled "CVV" and contains three dots "...". Below these fields is a blue, rectangular button with white text labeled "Authenticate". At the bottom of the window, the text "SUCCESSFUL PAYMENT" is displayed in bold, black, uppercase letters.

After successful payment the cashier will be directed to the end session interface. The user can end the session by selecting the end session button.

