Criterion B: Design

Initial Sketches

Window 1- Login

Safeway General Store

USERNAME: [   ]

PASSWORD: [   ]

[LOGIN]

These text fields are used by user to validate the existing data in the system.

The Login button is used to submit the data to the system

Window 2- Main Menu (admin)

Safeway General Store
Point of Sale

[CHECKOUT]

[TRANSACTION LOG]

[PRODUCTS]

[CHANGE PASSWORD]

[LOGOUT]
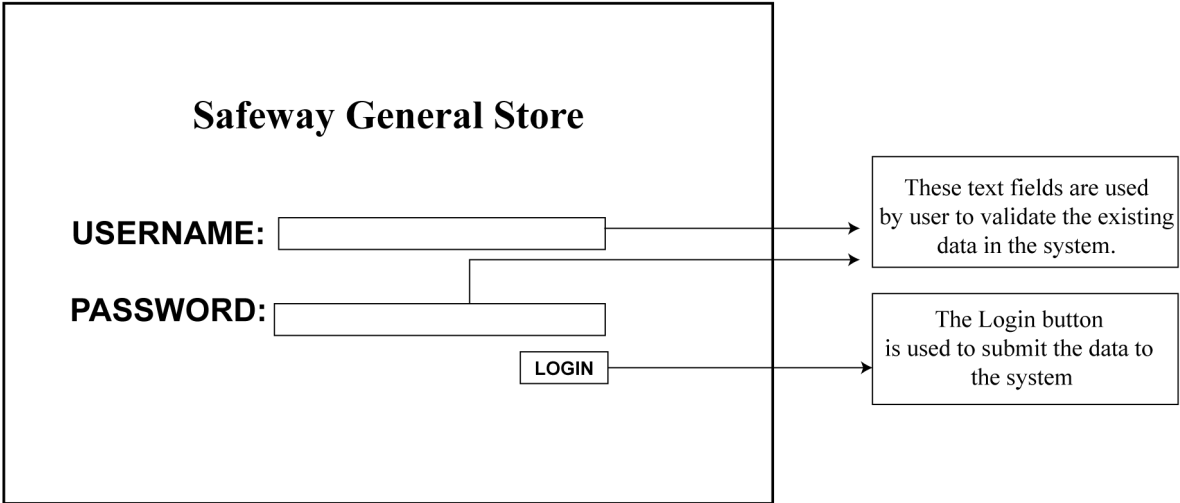
Window 3- Checkout
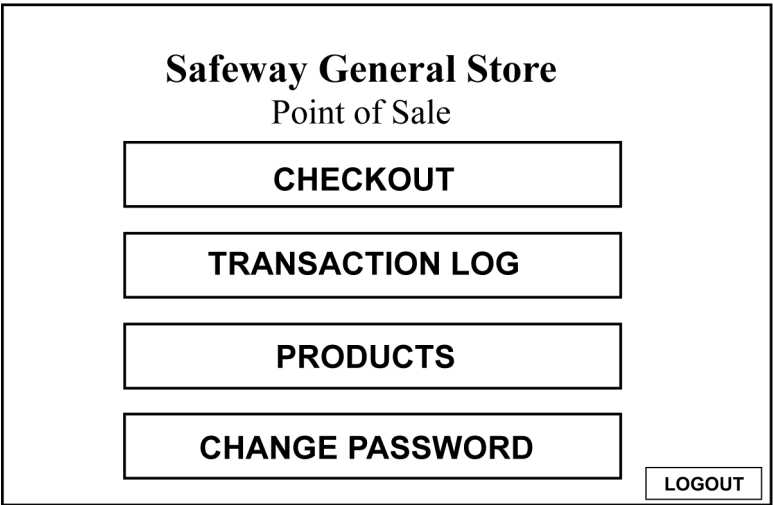
Safeway General Store
CHECKOUT

NO.

PRODUCT DETAILS

CATEGORY:

Drop-Down Menu

SEARCH

ITEMS:

NAME	

ADD

DELETE

BACK

CUSTOMER DETAILS:

NAME:

MOBILE:

BILL:

ITEM	QUANTITY	PRICE
TOTAL		

SAVE AND PRINT

Items will be shown according to search and category

This button will be used to print the invoice, and save it to the Transaction Log

Table will contain product details

Window 4- Products

Safeway General Store
Products

CATEGORY: FOOD

PRODUCT: XXX

PRICE: 55

QUANTITY: 2

ADD   UPDATE   DELETE

ITEM	CATEGORY	PRICE	QUANTITY

BACK

CONFIRM

These buttons will be used to add, edit or delete any inserted data into the fields

Confirm Button will be used to confirm product information

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Window 5- Transaction Log

Safeway General Store

Transaction Log

DATE

BILL No.	DATE	NAME	MOBILE	TOTAL

Search Transaction log by date

BACK

VIEW

Window 6- Change Password
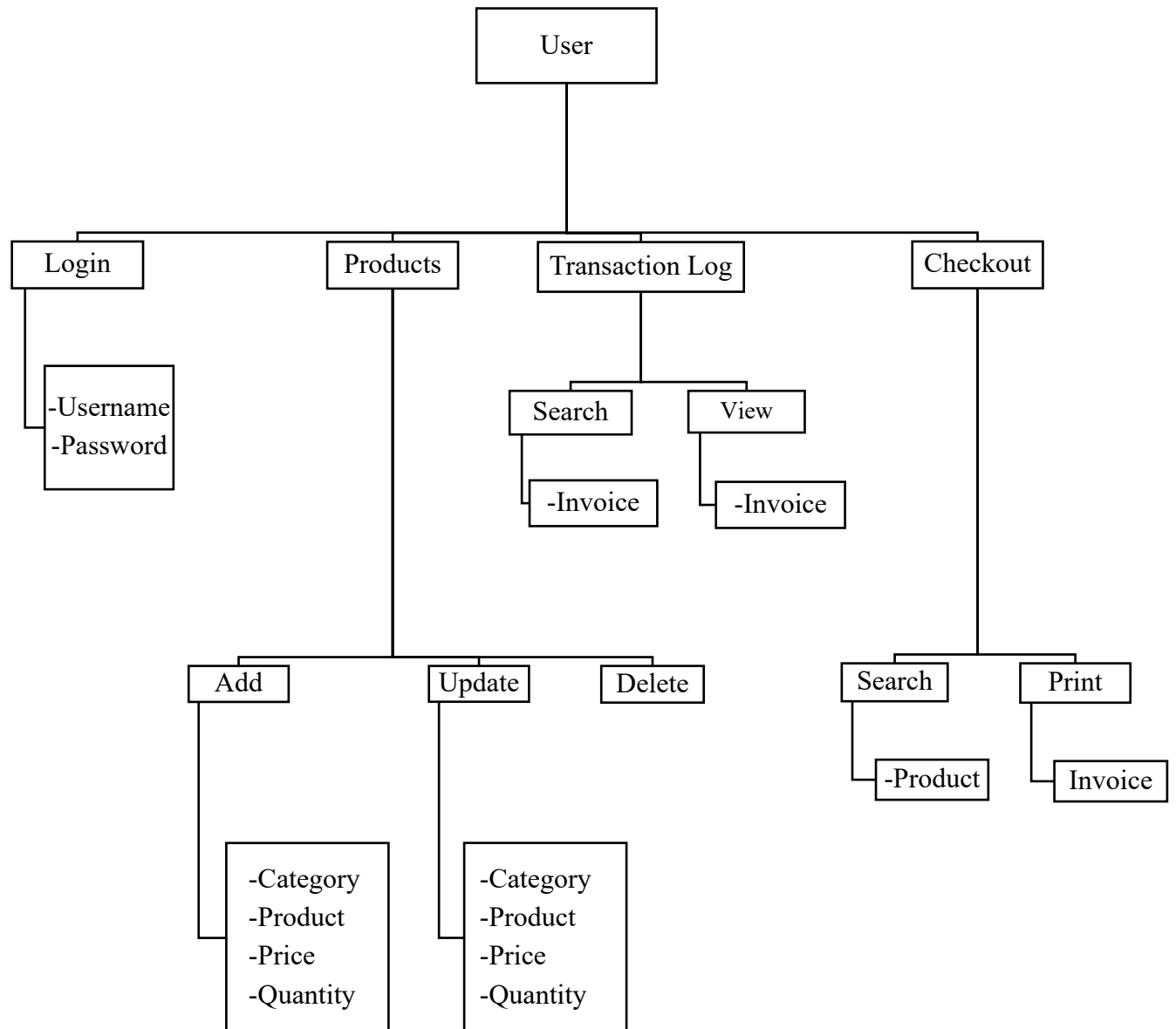
CHANGE PASSWORD

USERNAME:

OLD PASSWORD:
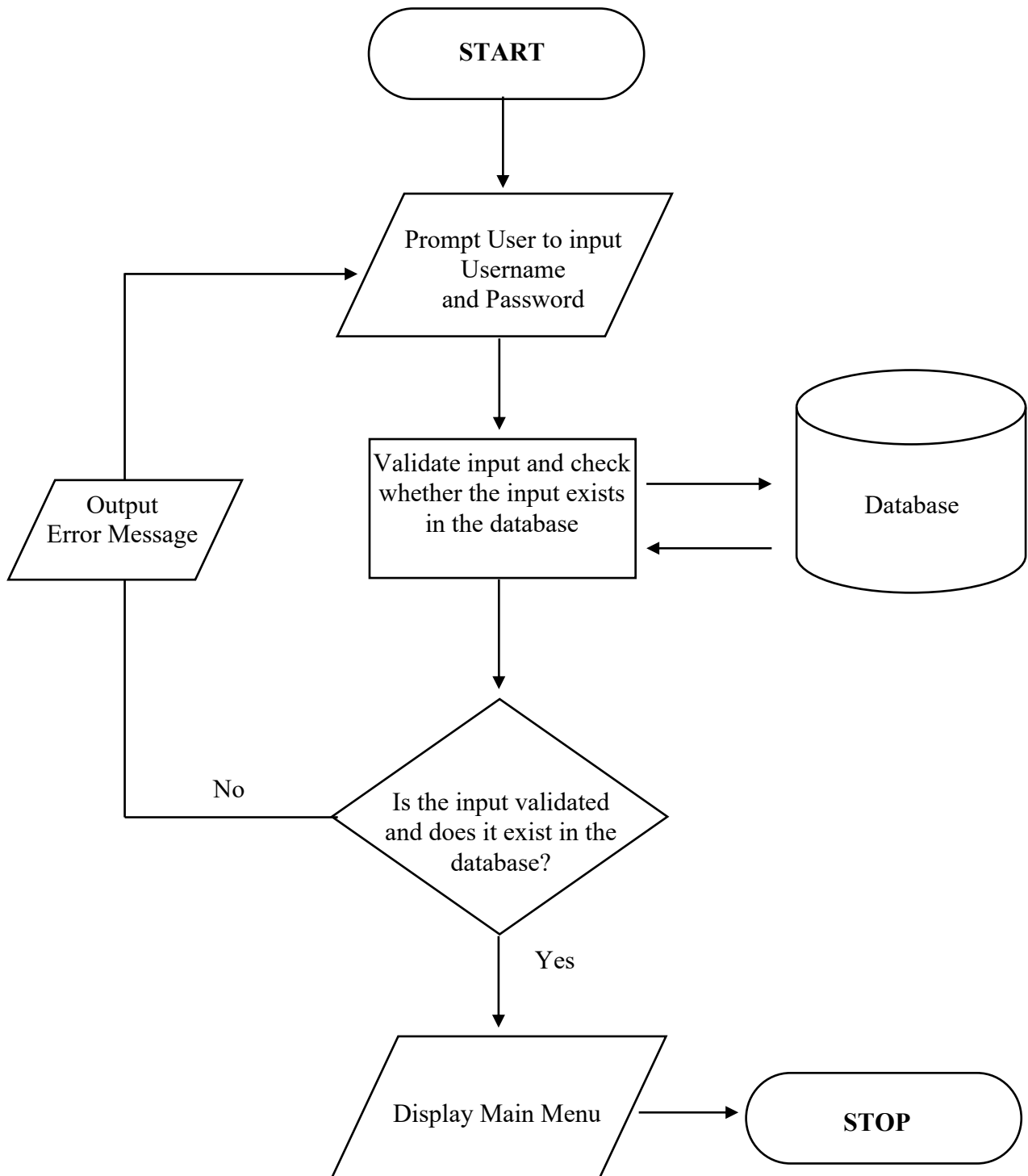
NEW PASSWORD:

**CONFIRM PASSWORD:**

Modular design

Login Module

This process is used to log the user into the system. It includes username and password fields, where the user can enter text. The user can log into the system if the data entered in the fields matches the data on the server.

```
                            ┌─────────────┐
                            │    START    │
                            └──────┬──────┘
                                   │
                                   ▼
                         ╱───────────────────╲
                         │  Prompt User to input │
                         │       Username        │
                         │     and Password      │
                         ╲───────────────────╱
                                   │
                                   ▼
        ╱──────────╲      ┌────────────────────┐        ┌──────────┐
        │  Output   │      │ Validate input and check │───────►│          │
        │ Error Message │   │ whether the input exists │        │ Database │
        ╲──────────╱      │    in the database     │◄───────│          │
                          └──────────┬─────────┘        └──────────┘
                                     │
                                     ▼
                  No        ◇─────────────────◇
             ◄───────────── │ Is the input validated │
                            │ and does it exist in the │
                            │      database?      │
                            ◇─────────────────◇
                                     │ Yes
                                     ▼
                          ╱──────────────────╲      ┌──────────┐
                          │  Display Main Menu │──────►│   STOP   │
                          ╲──────────────────╱      └──────────┘
```

Add Module

The Add Module is used to add new products into the system. The user enters all relevant

product information and saves it in the online database by pressing the 'add' button. The product

information can then be viewed by the table provided by the system.
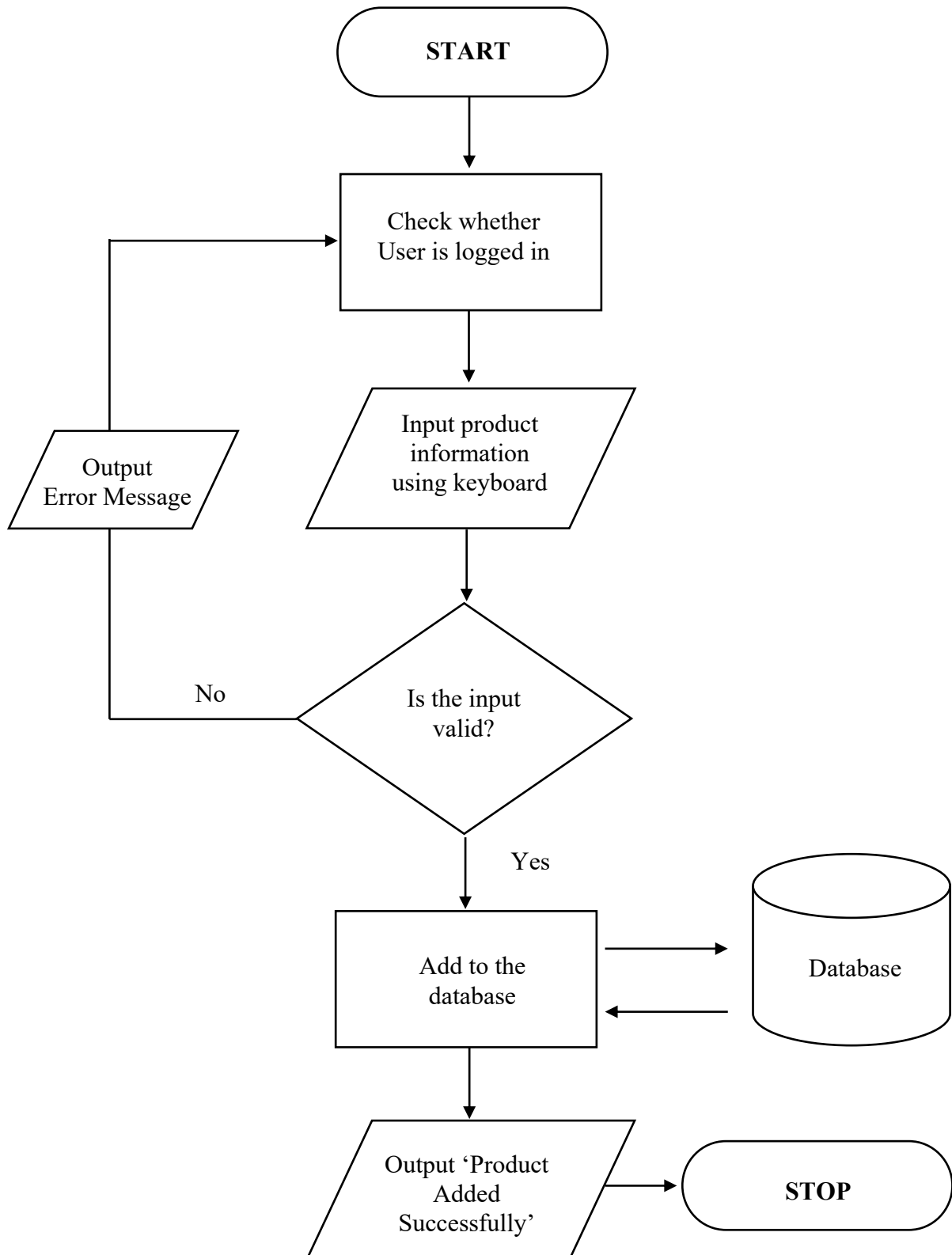
Update Module

The update module is used to update existing product information. Select on any product, make necessary changes to the data, and then click the "update" button. The product information in the online database and table will be updated automatically.
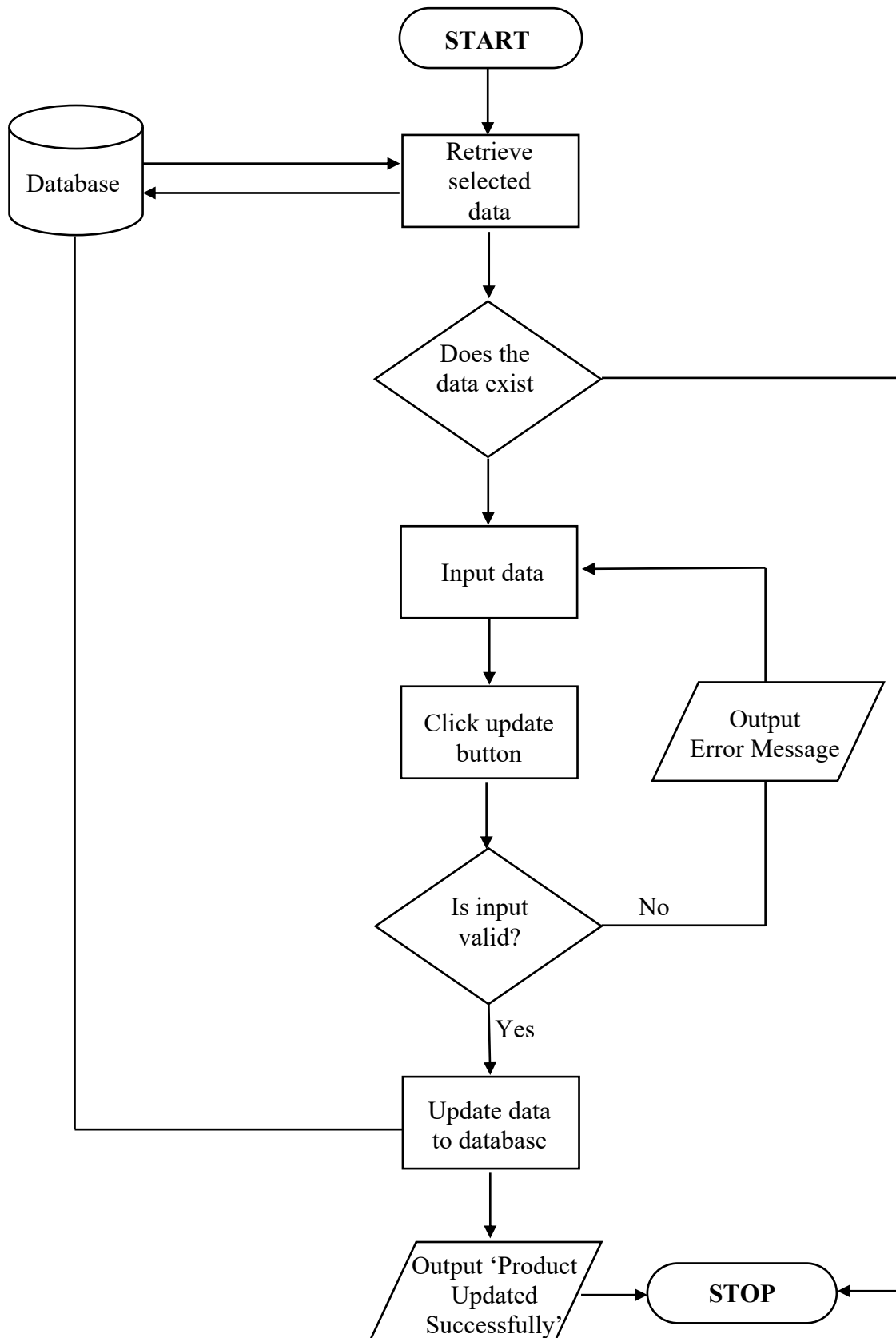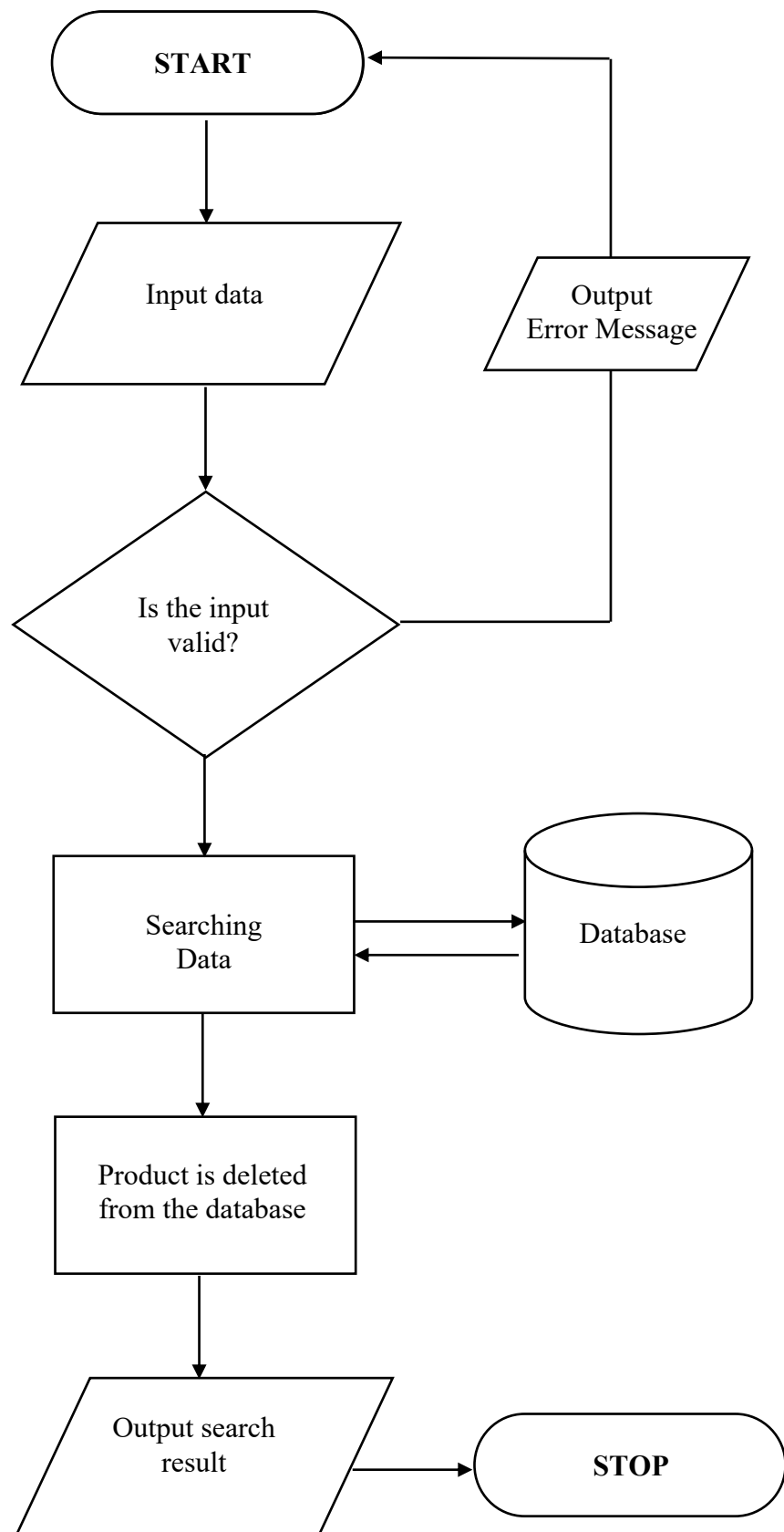
Delete Module

The delete module is used to delete any product from the database. The user can select any product from the table and click the delete button, which would delete the product.
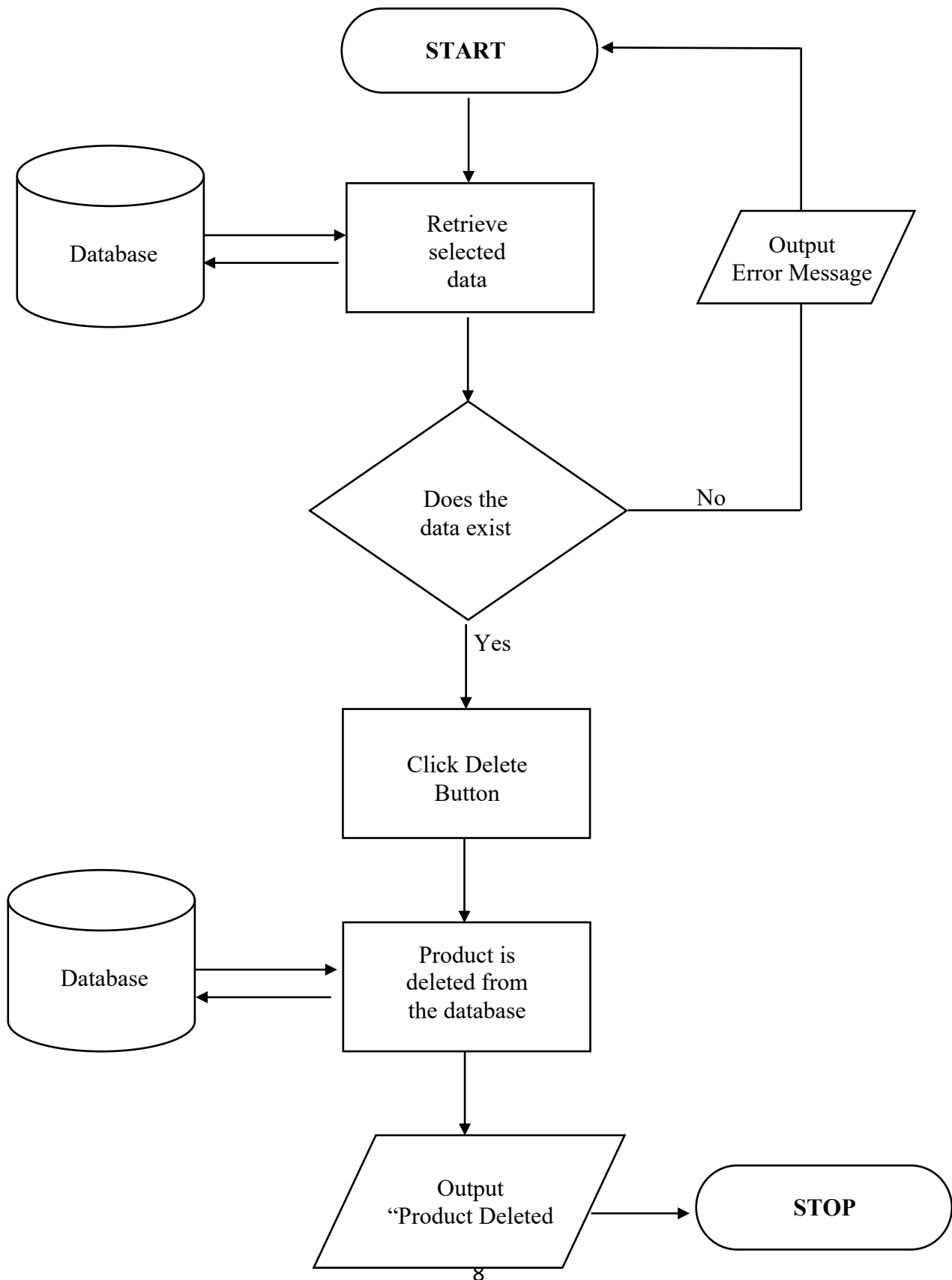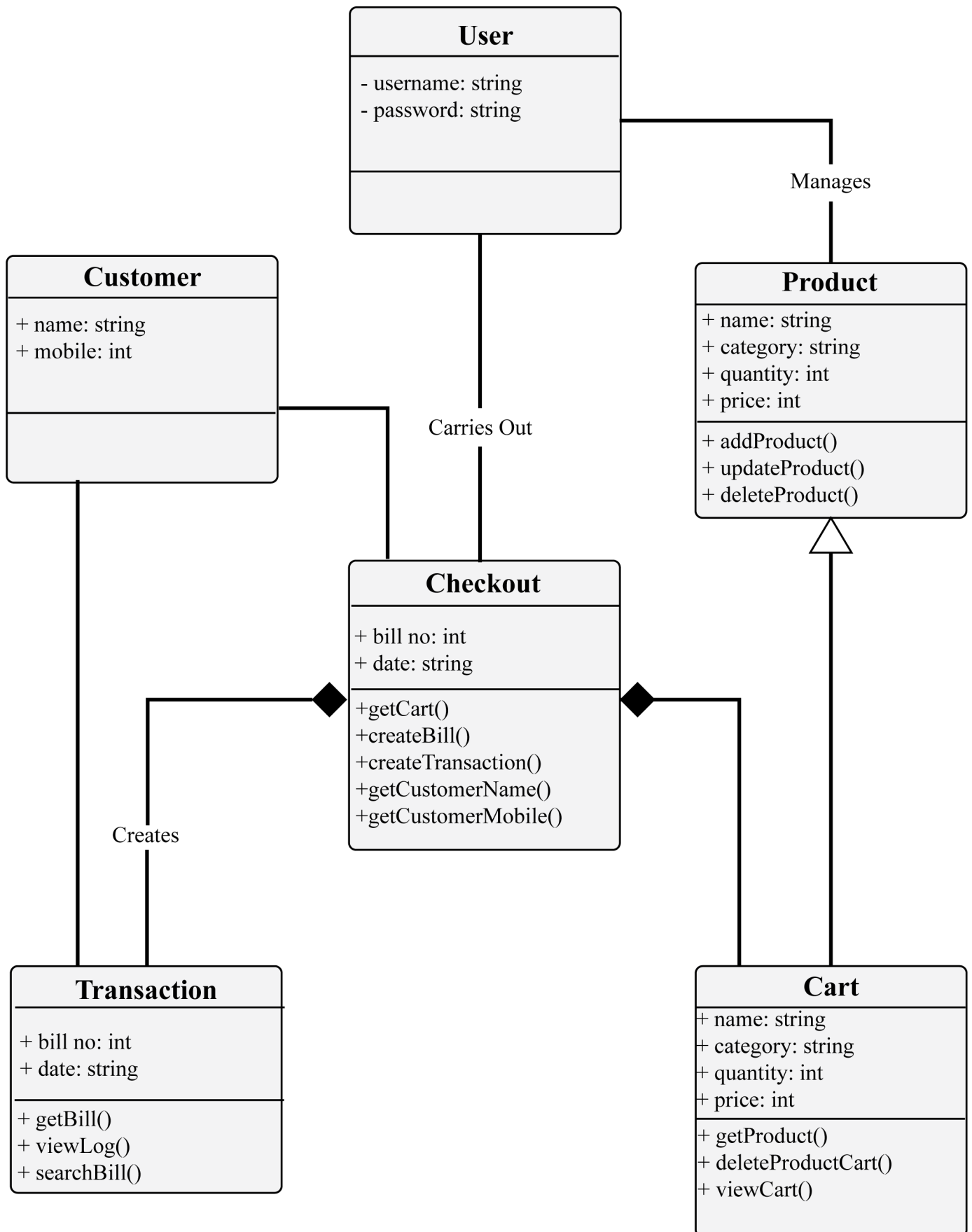
Search Module

This module is used to search products. It can be used to quickly find products during checkout.

```
                    START  ◄─────────────────┐
                      │                       │
                      ▼                        │
              ┌──────────────┐          ┌──────────────┐
              │  Input data  │          │   Output     │
              └──────────────┘          │ Error Message│
                      │                 └──────────────┘
                      ▼                        │
                 �◊                      │
                Is the input ────────────────┘
                  valid?
                      │
                      ▼
              ┌──────────────┐        ┌──────────────┐
              │  Searching   │───────►│              │
              │    Data      │◄───────│   Database   │
              └──────────────┘        └──────────────┘
                      │
                      ▼
              ┌──────────────┐
              │ Product is deleted │
              │ from the database  │
              └──────────────┘
                      │
                      ▼
              ┌──────────────┐          ┌──────────┐
              │Output search │────────► │   STOP   │
              │   result     │          └──────────┘
              └──────────────┘
```

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UML Diagram

User

- username: string
- password: string

Manages

Customer

+ name: string
+ mobile: int

Carries Out

Product

+ name: string
+ category: string
+ quantity: int
+ price: int

+ addProduct()
+ updateProduct()
+ deleteProduct()

Checkout

+ bill no: int
+ date: string

+getCart()
+createBill()
+createTransaction()
+getCustomerName()
+getCustomerMobile()

Creates

Transaction

+ bill no: int
+ date: string

+ getBill()
+ viewLog()
+ searchBill()

Cart

+ name: string
+ category: string
+ quantity: int
+ price: int

+ getProduct()
+ deleteProductCart()
+ viewCart()

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Database Structure Tables:

Table 1: Product

Field Name	Data Type	Description
Category	String	Stores the particular category name the product will be arranged in
Name	String	Product name
Price	Int	Stores the price of the product
Quantity	Int	Stores the number of units of the product that is available

Table 2: Cart

Field Name	Data Type	Description
Bill No.	Int	Holds the unique bill no. for future reference to this specific transaction.
Item	String	Name of the product that is in the cart
Quantity	Int	Stores the number of units of the product that will be sold
Price	Int	Stores the amount that will be billed to the customer

Table 3: Transaction Log

Field Name	Data Type	Description
Bill No.	String	Holds the unique bill no. for future reference to this specific transaction.
Customer Name	Int	Holds the name of the customer that purchased the products.
Customer Mobile Number	Int	Holds the mobile number of the customer that purchased the products.
Total Amount	Int	Stores the total amount that purchased by the customer
Date	String	Stores the date of transaction, the data is inserted through the GUI calender

Validations

Field Name	Field Type	Test Type	Validation	Output
Username	Text Field	Presence Check	The username entered should be the same as the one saved in the database.	"Please enter the correct username and password"
Password	Password Field	Presence Check	The password entered should exist in the database and correspond to the inputted username.	"Please enter the correct username and password"
Category	Text Field	Type Check, Presence Check	Data must be entered only in letters.	"Please enter only character"
Product	Text Field	Type Check, Presence Check	Data must be entered only in letters.	"Please enter only character"
Price	Number Field	Type Check, Presence Check	Data must be entered only in integers.	"Please enter only integer"
Quantity	Number Field	Type Check, Presence Check	Data must be entered only in integers.	"Please enter only integer"

Test Plan

Action Tested	Test Method	Link to success criteria
Opening the program and checking if the main window appears onto the screen.	Double clicking onto 'Inventory System' program.	The program can be used on numerous operating systems.
Checking whether or not the Login Page functions properly.	Enter incorrect username and password and check if error message is displayed.	Login system with username and password for security.
Check if the login page is connected to the main window.	Click login after entering correct username and password and check if the main window opens. The main window will contain Checkout, Transaction Log, Products and Change Password Button.	Simple and interactive interface.
Check Main Menu Buttons	Click on the main menu buttons, (Checkout, Transaction Log, Products and Change Password) and see if it links to the corresponding window.	Simple and interactive interface.
Check Add Button	After entering new product information, click the add button to see if it is added to the table and database.	Add data
Check Update Button	After editing existing product information, click the update button to	Update Data

	see if it is updated to the table and database.	
Check Confirm Button	After finishing adding/editing product information, click the save button to see if the message "Confirmed Successfully" appears.	Save Data
Check Delete Button	After selecting product from the table, click the delete button to see if the product is deleted from the table and database.	Delete Data
Check Back Button	Click on back button on every window and see if it takes the user back to the previous window	Simple and interactive interface
Check 'Search Product' field	Click on checkout and enter a product name on the search field. Check if the correct product appears.	Search Data
Check 'Search by date' field	Click on transaction log and enter a particular date and check if the corresponding transactions that took place on that day is displaying correctly.	Search Data
Data Validation	Enter incorrect formats into the fields and check if appropriate error messages are displayed.	Validation Process, Simple and interactive Interface