



**IT 13L – IT PROFESSIONAL ELECTIVE 4  
(4641)**

**PROPOSAL: REQUIREMENTS FOR Water Refilling Station Point-Of-Sale System**

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## 1. EXECUTIVE SUMMARY

Our proposed project focuses on developing a point-of-sale system designed to efficiently calculate product sales and manage data. The primary objective of this project is to provide valuable assistance to small businesses operating within the beverage industry, particularly those that have yet to implement an automated management system. Additionally, this project is tailored for new water refilling station owners that currently lack an automated management system. The key features and functions of this project include the automation of essential transactions, such as a user-friendly login form for both users and administrators, comprehensive CRUD (Create, Read, Update, Delete) operations, and a secure database solution for efficient data management. Additionally, the main functions of this project are within the tab control, in which every tab page shows different contents. There are 3 tabs, which are Dashboard, Sales, and Sales Report.

- The dashboard tab shows the total amount of sales, total product sold, walk-ins, and deliveries.
- Sales tab, where you can perform CRUD like clicking the create button will show a new form where you can add a product, and then inside the new form, there are two tab pages where delivery and walk-in transactions are.
- Delivery tab, a user can add a product by clicking the image and also customer name, contact number, address, type, quantity.
- Walk-in tab is the same as the delivery tab, and after putting data, by clicking the add button, it will go back to the sales tab, which is from the main form and displays the added data through the datagridview. After that, at the bottom of the datagridview, there are 3 buttons: update, delete, and empty. Furthermore, the data from sales tab will disappear if the "empty button is clicked".
- Sales report, where you can view the report of the sales by range (day/week/month).

Our primary objective of this project is to simplify the management of product sales for our users, reducing the risk of data loss and enhancing operational efficiency within their businesses.

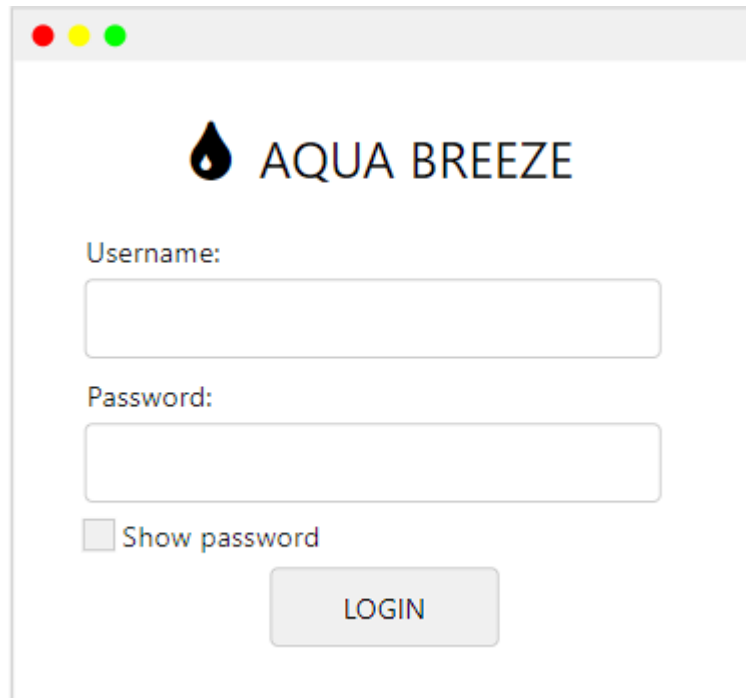
## 2. DEVELOPMENT TEAM

The following individuals comprise the software development team. They are responsible for the analysis and development of the Water Refilling Station Point-Of-Sale System.

Role	Tasks Assigned and Modules	Name
Team Leader/ Programmer/ System Analyst/ Database Designer	Manages and provides support to project team. Develop the User Login form and Main Solution template. Develop User and Audit Logs form design. Designer and analyzer of database. Develop prototypes. Collects data from the target industries/users.	Jumilla, Jeb C.
Project Manager/ Programmer	Manages and provides support to project team.	Potestas, Ravir A.
UI Designer/ Programmer	Designs the main template. Develop Product form design.	Torres, John E.

### 3. PROTOTYPES

#### 3.1. Form\_Login




A prototype of a login form for 'AQUA BREEZE'. The form is contained within a window with a grey title bar and three colored window control buttons (red, yellow, green) in the top-left corner. The logo, a black water drop, is positioned to the left of the text 'AQUA BREEZE'. Below the logo, there are two text input fields: the first is labeled 'Username:' and the second is labeled 'Password:'. Under the password field, there is a checkbox labeled 'Show password'. At the bottom center of the form is a grey button with the text 'LOGIN'.

Below are the specifications of the Form\_Login:


1. There are two types of users – an admin and owner user.

### 3.2. Form\_Main

#### 3.2.1. DASHBOARD

 AQUA BREEZE

09/16/2023



ADMIN  
Admin

MANAGE USER

MANAGE HISTORY

LOG OUT

WATER REFILLING STATION POINT-OF-SALE SYSTEM

DASHBOARD SALES SALES REPORT

TOTAL SALES  
1523

TOTAL PRODUCT SOLD  
1523


WALKIN  
1523

DELIVERY  
1523

### 3.2.2. SALES

AQUA BREEZE

09/16/2023



ADMIN

Admin

MANAGE USER

MANAGE HISTORY

LOG OUT

DASHBOARD

SALES

SALES REPORT

CREATE+

SEARCH

DATAGRIDVIEW

UPDATE

DELETE

EMPTY

### 3.2.3 SALES REPORT

The screenshot displays the Aqua Breeze Water Refilling Station Point-of-Sale System interface. The top header includes the Aqua Breeze logo and the system name. The left sidebar shows the user is logged in as 'ADMIN' with a 'LOG OUT' button and options to 'MANAGE USER' and 'MANAGE HISTORY'. The main content area has tabs for 'DASHBOARD', 'SALES', and 'SALES REPORT'. The 'SALES REPORT' tab is active, showing filters for 'Type' (set to 'All'), 'From' date (09/16/2023), and 'To' date (09/16/2023), along with 'FILTER', 'RESET', and 'SEARCH' buttons. Below the filters is a 'DATAGRIDVIEW' placeholder. At the bottom, a summary table provides key statistics.

Summary Statistics	
Total number of transactions (range):	Total number of transactions (month): 09/16/2023
150	100
Total amount of sales (range):	Total amount of sales within (month): 09/16/2023
35	100
Number of sales (range):	Number of sales within (month): 09/16/2023
35	35

Below are the specifications of the Form\_Main:

1. Admin can access POS, users' info and manage the sales history, where the admin can undo deleted/mistake transactions.
2. Owner user can only access the POS.
3. Generate report of overall total in dashboard.
4. Generate report of sales by type, date range, and/or month in sales report tab.



3.3. Form\_CRUD  
3.3.1. WALKIN


Name:

Contact #:


Delivery Address:

WALK-IN


DELIVERY



Refill



Bundle



Cap

Payment Status

PAID

Quantity

ADD

CANCEL

UPDATE

abel

### 3.3.2. DELIVERY


Name:

Contact #:


Delivery Address:

WALK-IN

DELIVERY



Refill



Bundle

Payment Status

Quantity

PAID

ADD

CANCEL

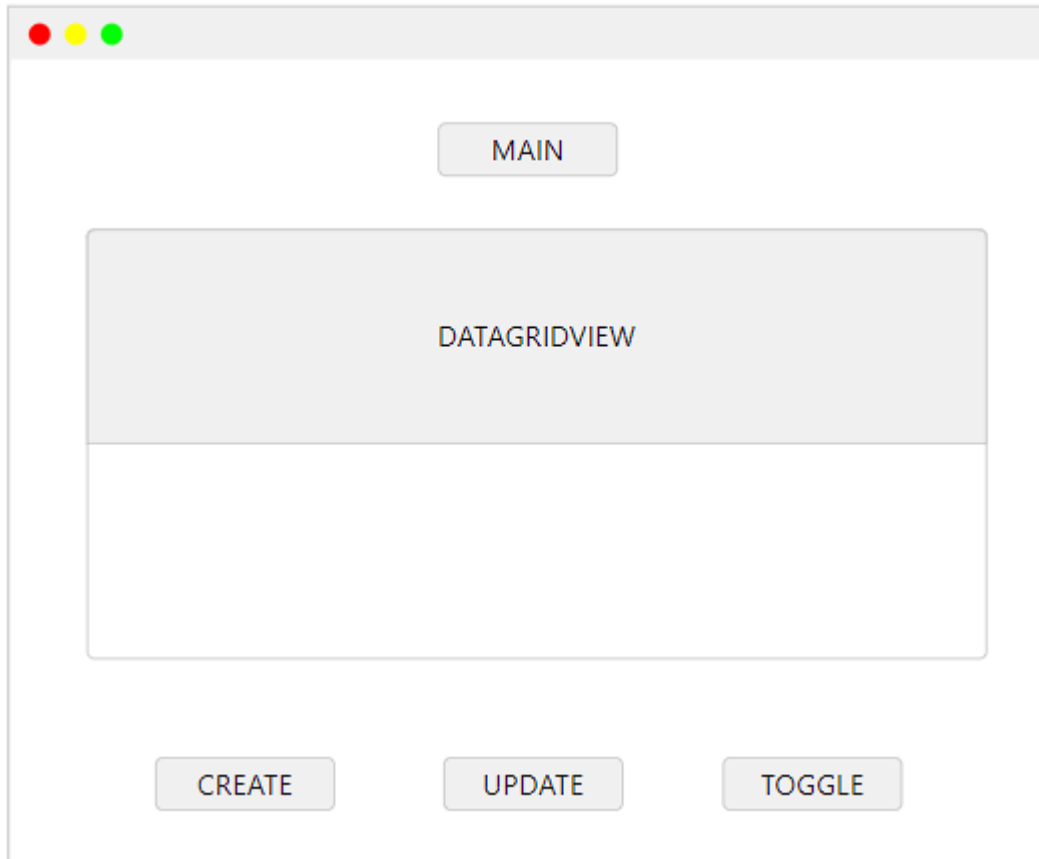
UPDATE

Below are the specifications of the Form\_CRUD:

1. Adds product manually. Only admin or owner user can perform this task.

2. Allows user to add product by clicking the picture and clicking the type of the service whether if it is walk-in or delivery.
3. Allows user to edit transactions.
4. Allows to delete product if there are no link transaction to it.
5. Allows user to change the payment status by updating.

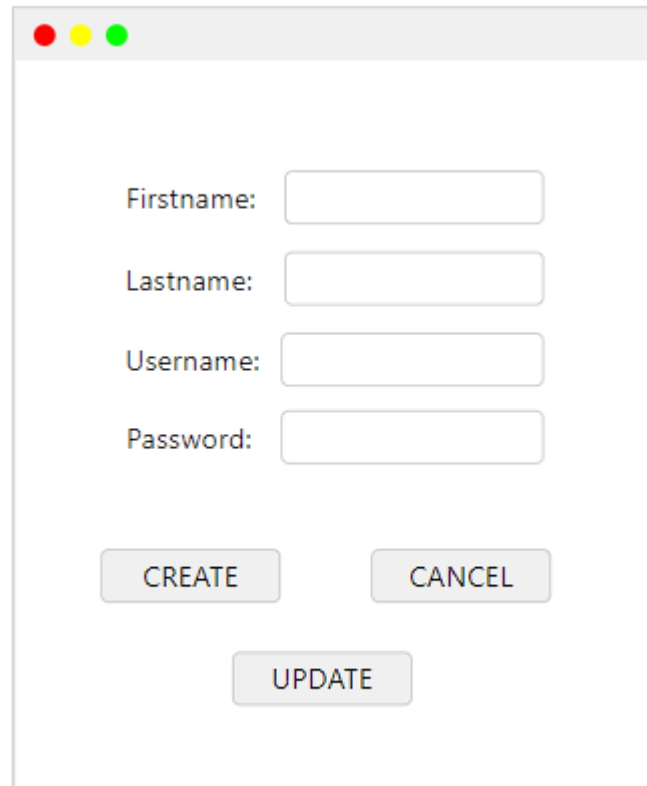
#### 3.4. Form\_Manage\_User



Below are the specifications of Form\_Manage\_User:

1. Admin can make changes to created accounts by making them active and inactive by clicking the toggle button.

### 3.5. Form\_CRUD\_User



Firstname:

Lastname:

Username:

Password:

Below are the specifications of Form\_CRUD\_User:

1. Admin can create users and update users' info.

### 3.6. Form\_Sales\_History

The screenshot shows a software window titled 'Form\_Sales\_History'. The window has a standard macOS-style title bar with red, yellow, and green buttons. Inside the window, there is a 'Type' dropdown menu and a 'SEARCH' text input field. Below these, there is a large rectangular area labeled 'datagridview'. At the bottom of the window, there are two buttons: 'UNDO' and 'BACK'.

Below are the specifications of Form\_Sales\_History:

1. Admin can only have this function.
2. Admin can undo the user's mistakes, like if the user accidentally clicked the empty button in sales, which only clears the entire data in the datagridview, not deletes it.
3. Admin can not only undo mistakes but can also undo deleted records.
4. Admin can search specific data by type (All, WalkIn, and Delivery).

### 3.7. Mod\_DBConnection

### 3.8. Mod\_Login

### 3.9. Mod\_Dashboard

### 3.10. Mod\_Sales

### 3.11. Mod\_Report

### 3.12. Mod\_User

### 3.13. Mod\_History

#### 4. DATABASE DESIGN

This section presents the data dictionary (table structure) design of the water refilling station point-of-sale system.

Table name: **user\_tbl**

Fieldname	Data Type	Is Unique?	Is Auto Inc?	Is PK?	Is FK?	Ref Table	Comments
user_id	Integer		Yes	Yes			
firstname	Text						
lastname	Text						
username	Text	Yes					Username cannot be changed. Username is unique.
password	Text						Password is encrypted using *.
status	Integer						1 = active and 0 = inactive.
usertype_id	Integer				Yes		1 = Admin and 2 = Owner.

Table name: **usertype\_tbl**

Fieldname	Data Type	Is Unique?	Is Auto Inc?	Is PK?	Is FK?	Ref Table	Comments
usertype_id	Integer		Yes	Yes			

usertype	Text						Admin and Owner
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Table name: **customer\_tbl**

Fieldname	Data Type	Is Unique?	Is Auto Inc?	Is PK?	Is FK?	Ref Table	Comments
customer_id	Integer		Yes	Yes			
Name	Text						
contact_number	Numeric						
customer_address	Text						
user_id	Integer				Yes	user_tbl	

Table name: **product\_tbl**

Fieldname	Data Type	Is Unique?	Is Auto Inc?	Is PK?	Is FK?	Ref Table	Comments
product_id	Integer		Yes	Yes			
Product_name	Text						
price	Numeric						
quantity	Text						
amount	Integer				Yes	user_tbl	

date	Text						Sql date() format.
visibility							1 = sales, 2 = report, and 0 = remove.
customer_id	Integer				Yes	Customer_tbl	
ProductType_id	Integer				Yes	productType_tbl	1 = WalkIn and 2 = Delivery
productStatus_id	Integer				Yes	productStatus_tbl	1 = Paid and 2 = Unpaid

Table name: **ProductType\_tbl**

Fieldname	Data Type	Is Unique?	Is Auto Inc?	Is PK?	Is FK?	Ref Table	Comments
productType_id	Integer		Yes	Yes			
type	Text						WALKIN OR DELIVERY

Table name: **ProductStatus\_tbl**

Fieldname	Data Type	Is Unique?	Is Auto Inc?	Is PK?	Is FK?	Ref Table	Comments
productStatus_id	Integer		Yes	Yes			
status	Text						PAID OR UNPAID



## 5. ERD

This section presents the overall ERD design of the water refilling station point-of-sale system.

