Project Case	
ISYS6197 | ISYS6197003 | ISYS6749052 Business Application Development	BINUS **UNIVERSITY** Software Laboratory Center
Computer Science	**O252-ISYS6197-LC11504-00**
Valid on *Odd Semester Year 2024/2025*	**Revision 00**

1. Kelompok tidak diperkenankan untuk:

   Members of the group are prohibited from:

   - Melihat sebagian atau seluruh jawaban kelompok lain,

     Seeing a part or the whole answer from other groups,

   - Menyadur sebagian atau seluruh jawaban dari buku, catatan, video, dan jenis referensi lainnya,

     Retell a part or the whole answer from books, notes, videos, and other references,

   - Menyadur sebagian atau seluruh jawaban dari internet,

     Retell a part or the whole answer from the internet,

   - Mengumpulkan jawaban yang tidak sesuai dengan tema soal,

     Submitting an answer with a different theme from the given case,

   - Melakukan tindakan yang menyebabkan jawaban dicontek oleh orang lain atau kelompok lain, baik disengaja maupun tidak disengaja,

     Doing action that could result the answer being copied by someone or other groups, intentionally or unintentionally,

   - Melakukan tindakan kecurangan lainnya.

     Committing other dishonest actions.

2. Jika kelompok terbukti melakukan tindakan seperti yang dicantumkan pada butir ke-1, maka nilai mahasiswa dan/atau kelompok yang melakukan kecurangan, baik menyontek atau dicontek, akan dinolkan sesuai dengan peraturan yang berlaku.

   If it has been proven that a group has committed dishonest actions outlined in point 1 above, the whole groups related to the incident, regardless of which one copies or has their answer copied, will be issued a score of zero according to the regulation.

3. Jawaban yang dapat diterima dan dinilai adalah jawaban yang dikumpulkan sebelum batas waktu yang telah ditentukan.

   The answer must be submitted before the designated deadline to be accepted and graded,

4. Jawaban akan dinilai berdasarkan teknik atau metode yang diajarkan pada kelas praktikum dengan menggunakan software yang sudah ditentukan.

   The scoring will be based on the materials taught during the practicum classes using the designated software. Using different software than requested may result in your answer not being graded.

5. Jika Anda tidak membaca peraturan ini, maka Anda dianggap sudah membaca dan menyetujuinya.

   By taking this exam, you agree to these regulations, regardless of whether you have read it or not.

6. Persentase penilaian untuk matakuliah ini adalah sebagai berikut:

   The score will be distributed as follows:

Tugas Mandiri *Assignment*	Proyek *Project*	UAP *Final Exam*
40%	60%	-

7. Perangkat lunak yang digunakan pada matakuliah ini adalah sebagai berikut:

   This course uses the following software:

Software *Software*
Eclipse 2020.6 R Java 11.0.18 JavaFX 17.0.7 MySQL Java Connection Library 8.0.24 XAMPP 8.0.7

8. Ekstensi file yang harus dikumpulkan untuk matakuliah ini adalah sebagai berikut:

   Your answers must be in the following file extensions:

Tugas Mandiri *Assignment*	Proyek *Project*	UAP *Final Exam*
JAVA. CLASS	JAVA. CLASS, SQL	-

9. File yang harus dikumpulkan adalah keseluruhan jawaban beserta dengan aset yang digunakan (gambar, audio, video, dll) dan dokumentasi proyek yang berisikan link referensi aset dan penjelasan mengenai aplikasi yang dibuat (terlampir bersama dengan soal).

   *Include other files that can support your project, such as: all files in your project, other files (image, audio, video, etc.) used in your project, *.doc file (documentation of your project) that contains all pages in your project, reference links of additional files (image, audio, video, etc.) used in your project, the description about how to use your application, etc.*

Soal
Case

FloraArtistry

FloraArtistry is a shop that sells various types of flowers. **FloraArtistry** aims to enhance customer satisfaction by offering a wide variety of high-quality flowers from different species. To efficiently run this shop, the owner has requested the development of a program to manage transactions and products within the store. The program should be made using **Java Programming Language,** with **MySQL Database Engine. Ensure that you didn't use regex, Java FXML, JavaFX Scene Builder, or any library used outside the class materials in your project, or it will affect your score**.

There are some requirements to build this application:
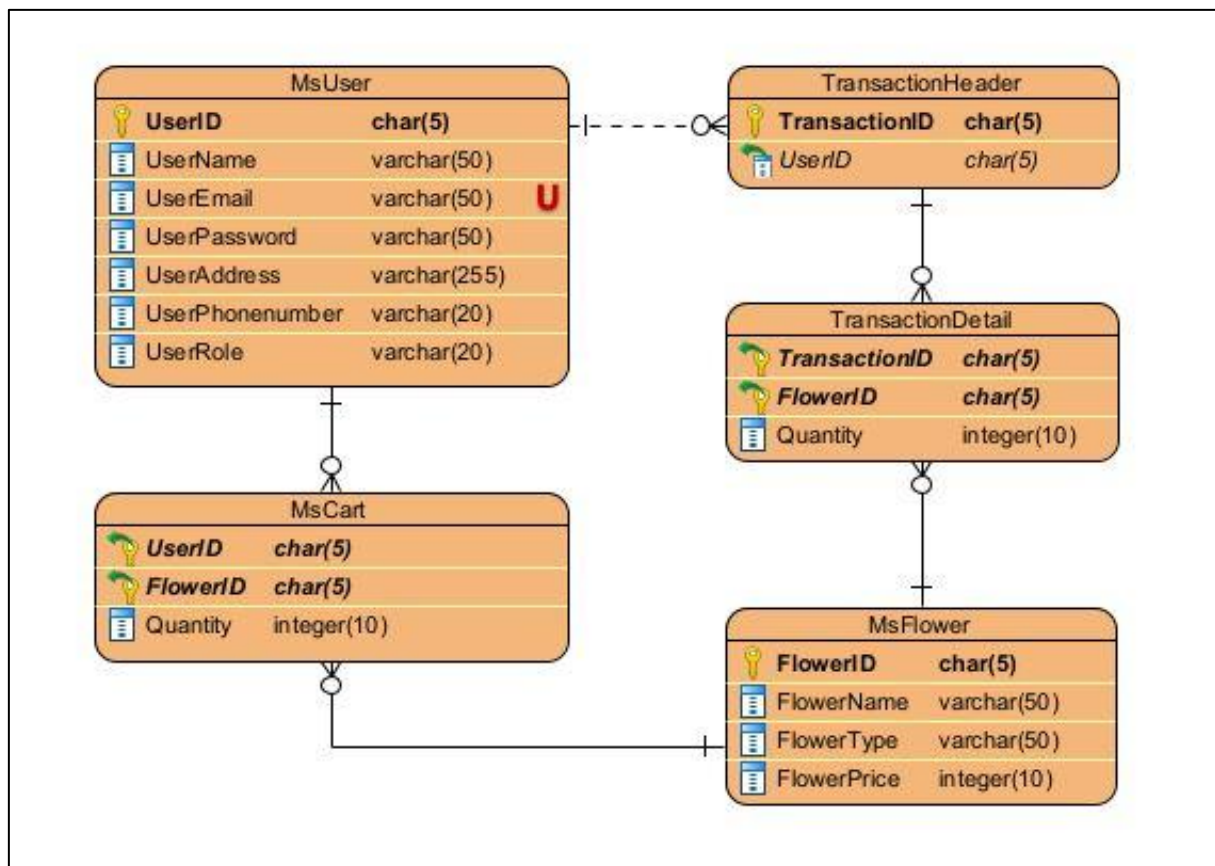
Figure 1. ERD

Execute the provided create and insert query file on "**FloraArtistry**" database! ("**create+insert.sql**").

1. **Login and Register Navigation Bar**

   This navigation bar is **only available on Login Scene and Register Scene**. It is **used to navigate between Login Scene and Register Scene**.
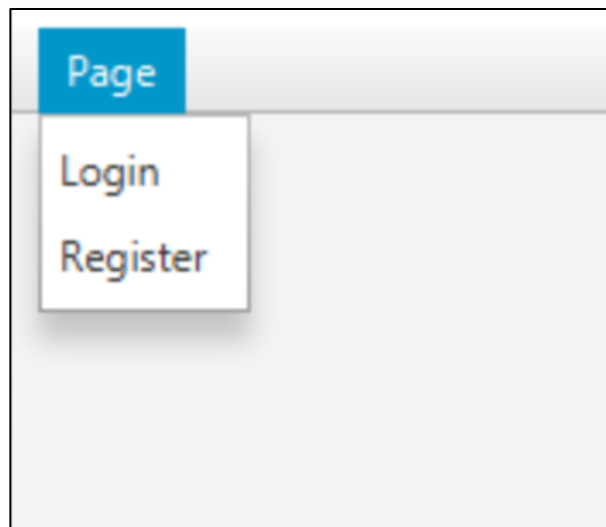
   Figure 2. Navigation Bar (Login and Register Scene)

Components:

- **MenuBar, Menu** for navigation bar
- **MenuItem** for navigation to Login Scene or Register Scene.

Description:

- **In the Login Scene,** selecting the Register Page will redirect the user to the Register Scene.
- **In the Login Scene,** selecting the Login Page will not lead the user anywhere.
- **In the Register Scene,** selecting the Register Page will not lead the user anywhere.
- **In the Register Scene,** selecting the Login Page will redirect the user to the Login Scene.

2. Login Scene

The **first form** that will appear when the program is started is the **Login Form**. Users will use the Login Form to **log in, to access the Buy Product Scene** (if logged in as 'Customer') **or the Manage Product Scene** (if logged in as 'Admin').
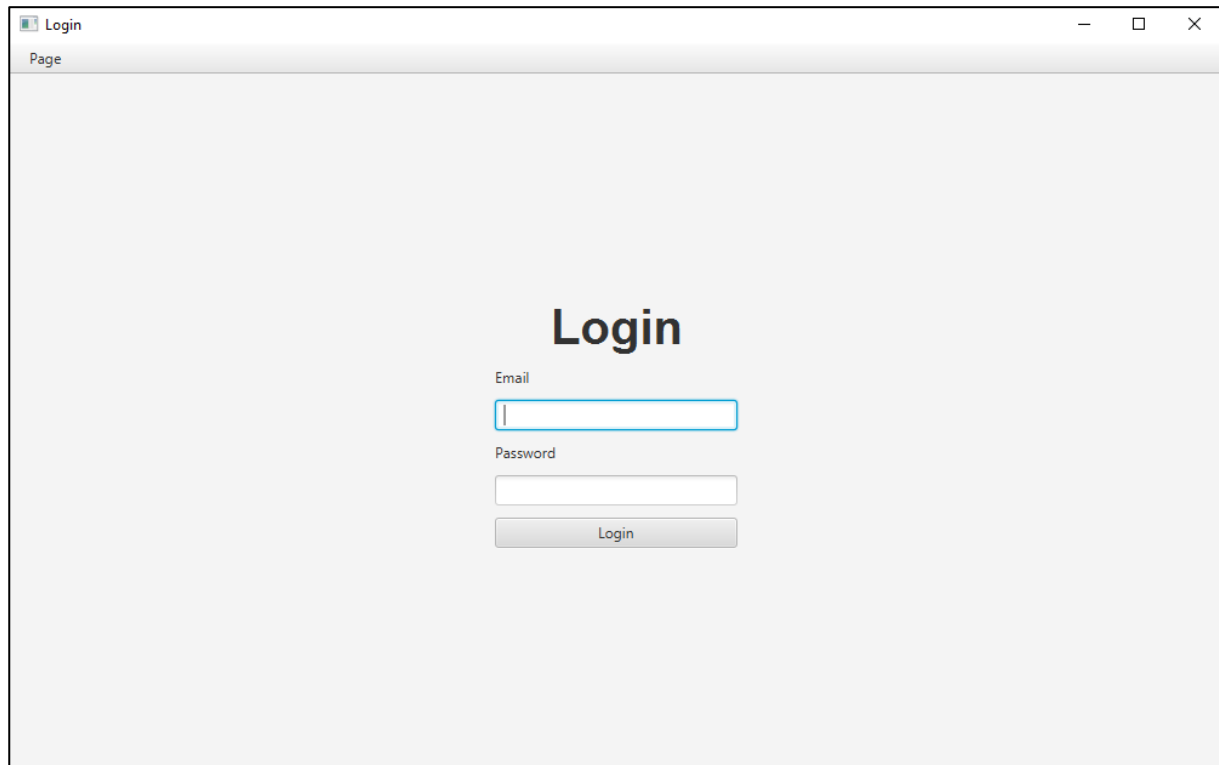
Figure 3. Login Scene

Components:

- **Label** for Email and Password.

- **TextField** for Email input.

- **PasswordField** for Password input.

- **Button** for Login button.

- **MenuBar, Menu** for navigation bar

- **MenuItem** for navigation to Login Scene or Register Scene.

Description:

- If user clicks **Login** button, then validate:
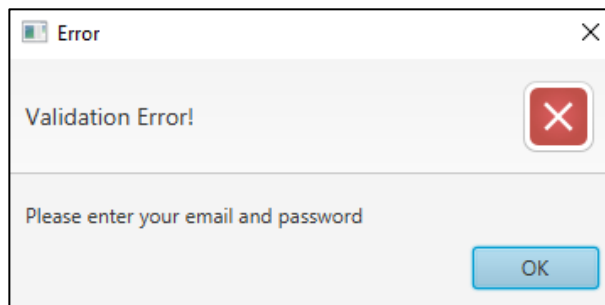 - o **Email** and **Password** must be **filled.**

Figure 4. If any field is empty

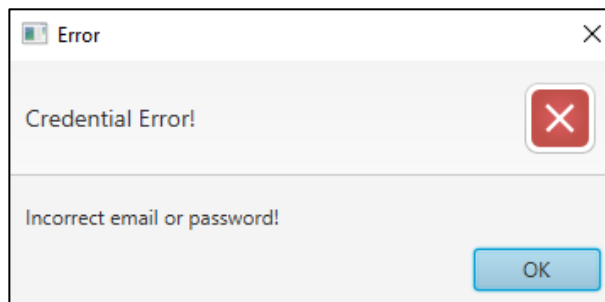- Email and Password must exist and matched in database.

Figure 5. If account doesn't exist or incorrect credential

- If credential is correct, the program will save the current logged in user and direct the user to Home Scene.
- If the logged in user class is Admin redirect to Manage Product (Admin).
- If the logged in user class is Customer redirect to Buy Product (Customer).
- If user failed to log in, display an Error Alert

3. Register Scene

The Register Form is **used by users to Register.**

Figure 6. Register Scene

Component:

- **Label** for Register, Email, Username, Password, Confirm Password, Address, Phone Number.
- **TextField** for Email, Username, Phone Number input.
- **PasswordField** for Password, Confirm Password input.
- **TextArea** for Address input.
- **CheckBox** to make sure use agree to create an account.
- **Button** for Register button.
- **MenuBar, Menu** for navigation bar
- **MenuItem** for navigation to Login Scene or Register Scene.

Description:

- **If user clicks Register button**, then validate:
  - o **User ID** is generated with **format:**

> **USXXX**
> Where **X**: Digit (0-9) according to user index (add previous User ID by one on insert)
> Example: US001, US002, US003

- o   **All fields** must be **filled.**
- o   **Username** must be **between 4 – 20 characters (inclusive).**
- o   **Email** must be **unique.**
- o   **Password** must be **8 or more characters.**
- o   **Confirm Password** must be **the same as Password.**
- o   **Phone Number** must be **numeric.**
- o   **Phone Number** must be **8 – 20 numbers (inclusive).**

- • **Every error message must be shown as an Error Alert.**
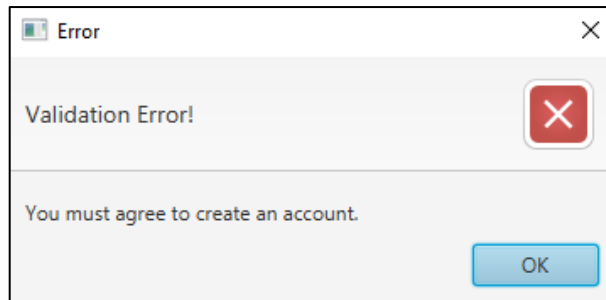
Figure 7. If the checkbox hasn't been checked

- • **If user successfully registers**, insert a new user to the database with **"Customer" role** and the generated User ID. **Then give a**n **information alert that shows that he has registered a new account.**
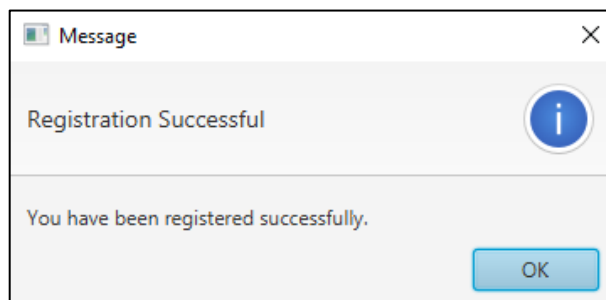

Figure 8. Account successfully registered

4. **Customer Navigation Bar**

This navigation bar is **only available on Buy Product and Cart**. It is **used to navigate between Buy Product, Cart and Log Out (Redirect back to Login Scene)**.
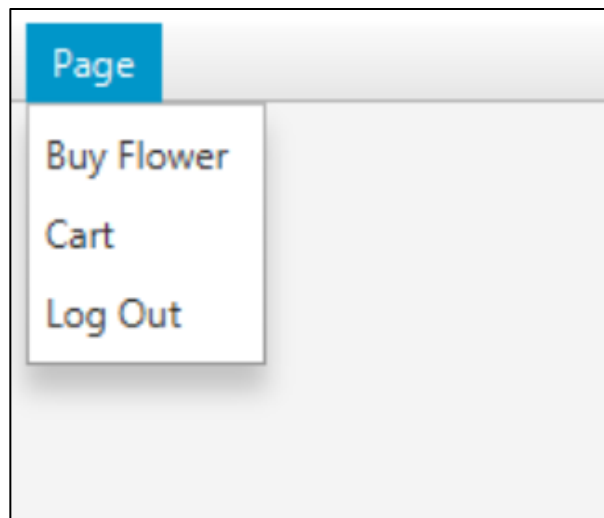

Figure 9. Customer Navigation Bar (Buy Product and Cart scene)

Components:

- **MenuBar, Menu** for navigation bar
- **MenuItem** for navigation to Buy Product, Cart, and Log Out (Redirect user back to Login Scene).

Description:

- **Buy Flower** is used to navigate customers to Buy Flower Scene.
- **Cart** is used to navigate customers to Cart Scene.
- **Log Out** is used to navigate user back to the Login Scene.

5. **Buy Product Scene (Customer)**

Buy Product Scene is **only available for users with "Customer" Role**. In this scene, the user can **view all products from the database** on a TableView. The user can **click on one of the products that is listed** on the table and **show the product detail of selected product**.
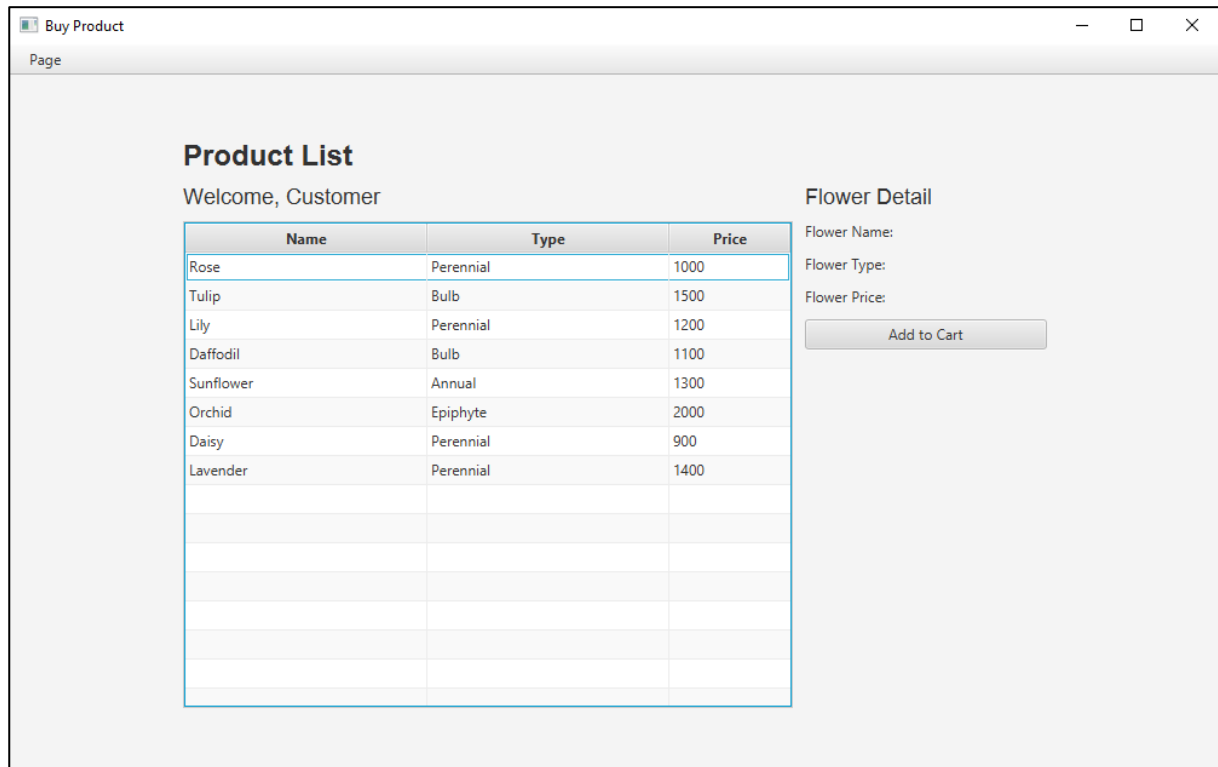

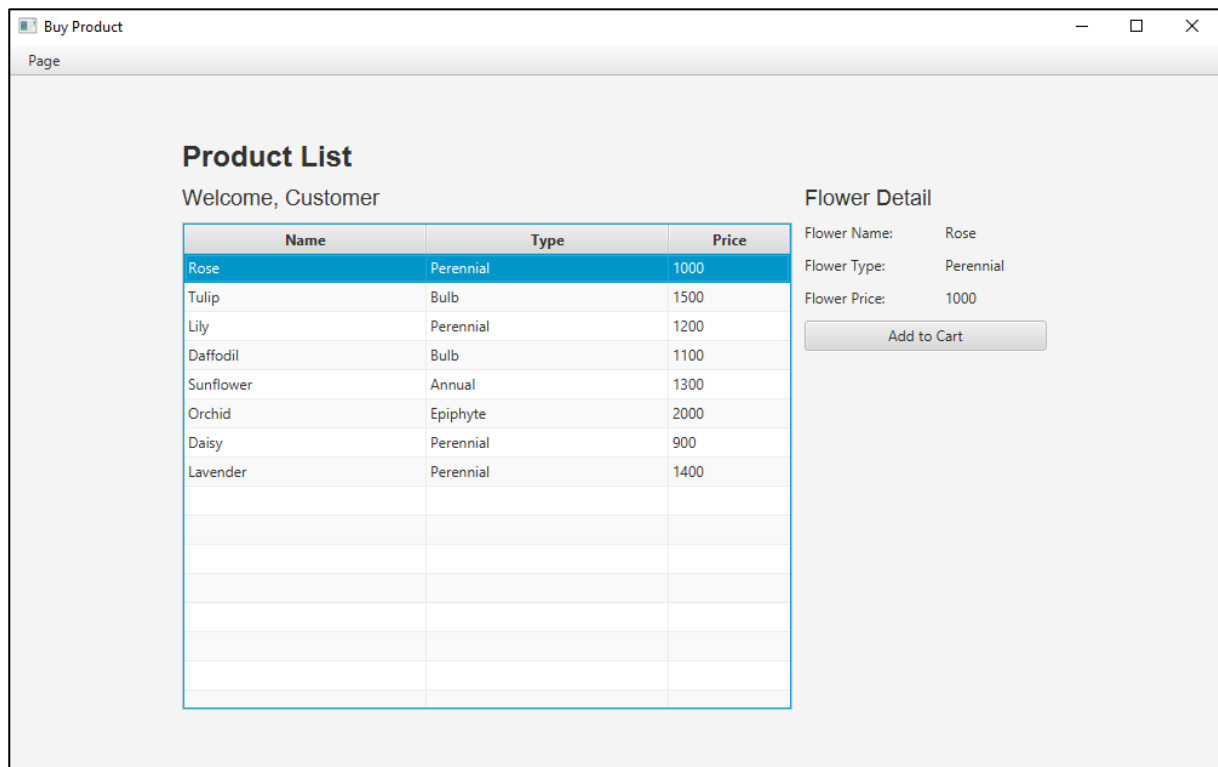
Figure 10. Buy Product Scene (No product selected)

Figure 11. Buy Product Scene (Product selected)

Component:

- **Label** for:
  - Product List
  - Greeting
  - Product Detail
    - Flower Name
    - Flower Type
    - Flower Price
- **TableView** for displaying all products.
- **Button** for Add to Cart button.
- **MenuBar, Menu** for navigation bar
- **MenuItem** for navigation to Buy Product, Cart, and Log Out (Redirect user back to Login Scene).

Description:

- **Greeting Title** will say **"Welcome, [Current user's username]".**

- **Display Flower Name, Flower Type, and Flower Price** value for each of the product in the **TableView**.

- If the **user clicks a produc**t from the product list, **update the Buy Product Scene to display details of the selected product.** The details consist of:
  - Flower Name
  - Flower Type
  - Flower Price

- If the **user did not select any of the products** from the product list and **click Add to Cart button** display Error Message.
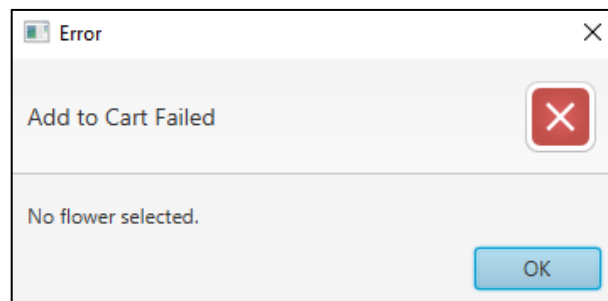
Figure 12. Adding to cart error, no product selected.

- **Add to Cart** button:
  - **Open a new pop-up Add to Cart window.**

6. Add to Cart Scene (Customer)

Add to Cart Scene is a **pop-up window** that lets users **add new items to their cart**. This scene is a **new pop-up window that uses JFXtras Window** to create a separate window. In this scene, the user can **change the quantity of the item** to be added to the cart. The user can also choose to either **add the item to the cart or cancel** the action.
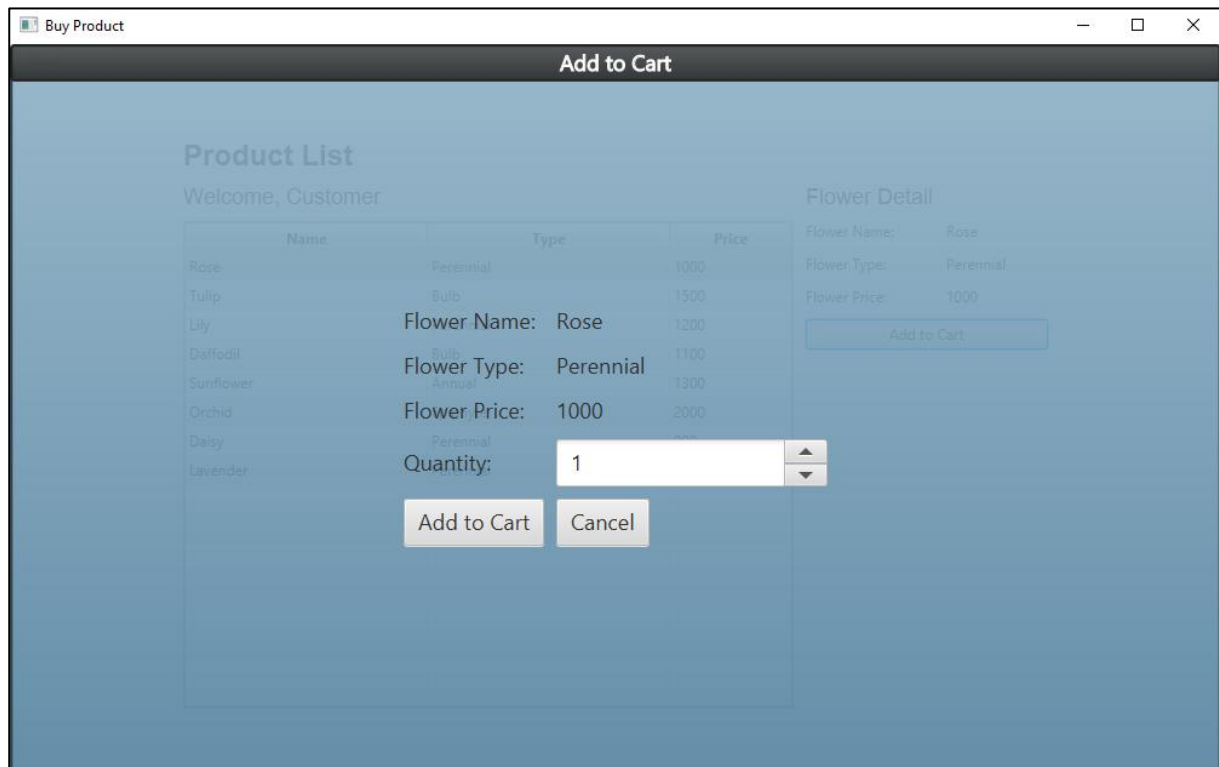

Figure 13. Add to Cart JFXtras Window

Components:

- **Window** for the "Add to Cart" pop-up window.
- **Label** for Flower Name, Flower Type, Flower Price, Quantity.
- **Spinner** for user to change the item quantity that will be added to the cart.
- **Button** Add to Cart, Cancel button.

Description:

- **Display** Flower Name, Flower Type, and Flower Price **based on the selected product** on the TableView.
- **If Flower is already in the user cart, set the quantity spinner** based on the **quantity of the product in cart.**
- **The Quantity Spinner** can only be in **the range of 1 to 100**.

- **Display an information alert** after successfully adding the product into the cart.
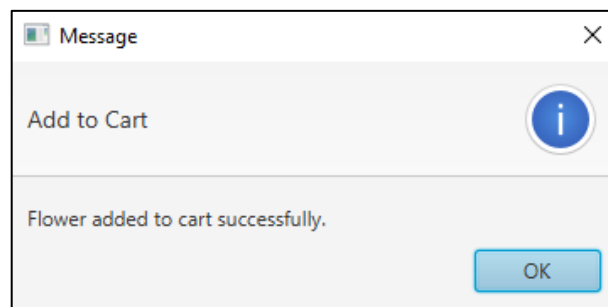

Figure 14. Successfully adding product to cart.

7. Cart Scene (Customer)

The Cart scene **allows users to view all products that have been added to their cart.** In this scene, users can also **check out all the products in their cart.**
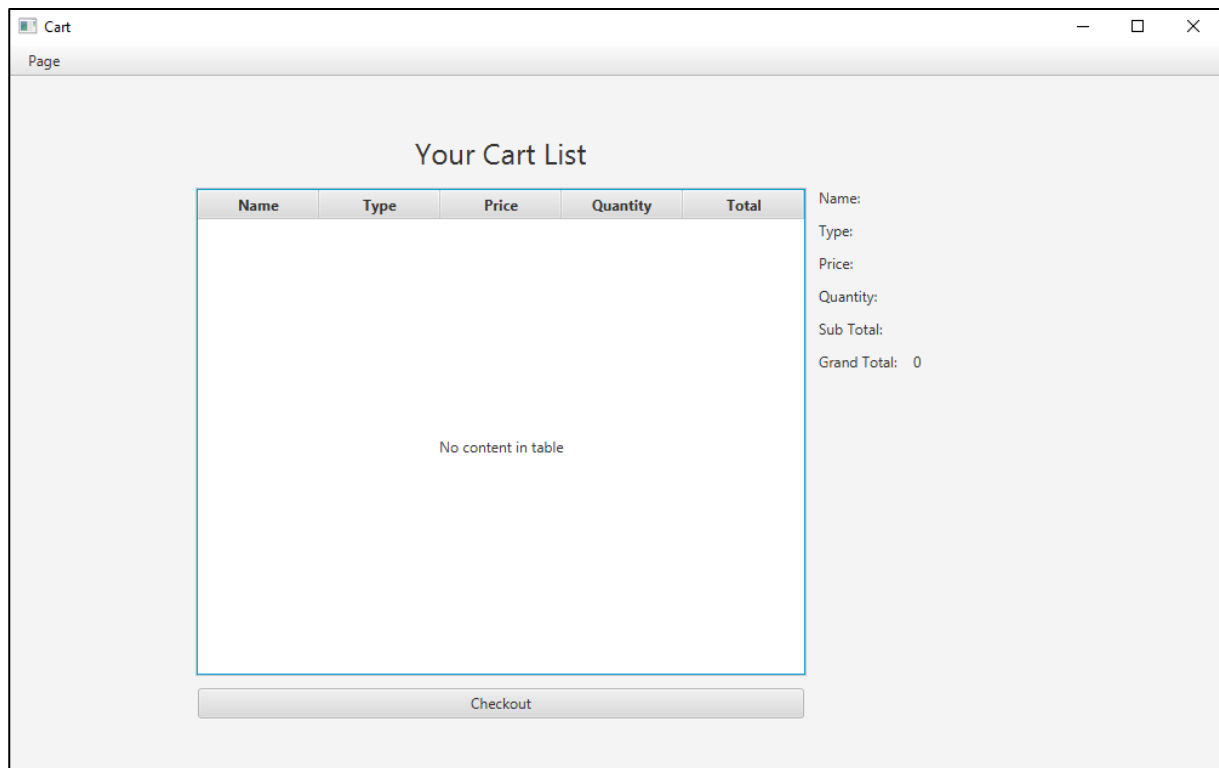

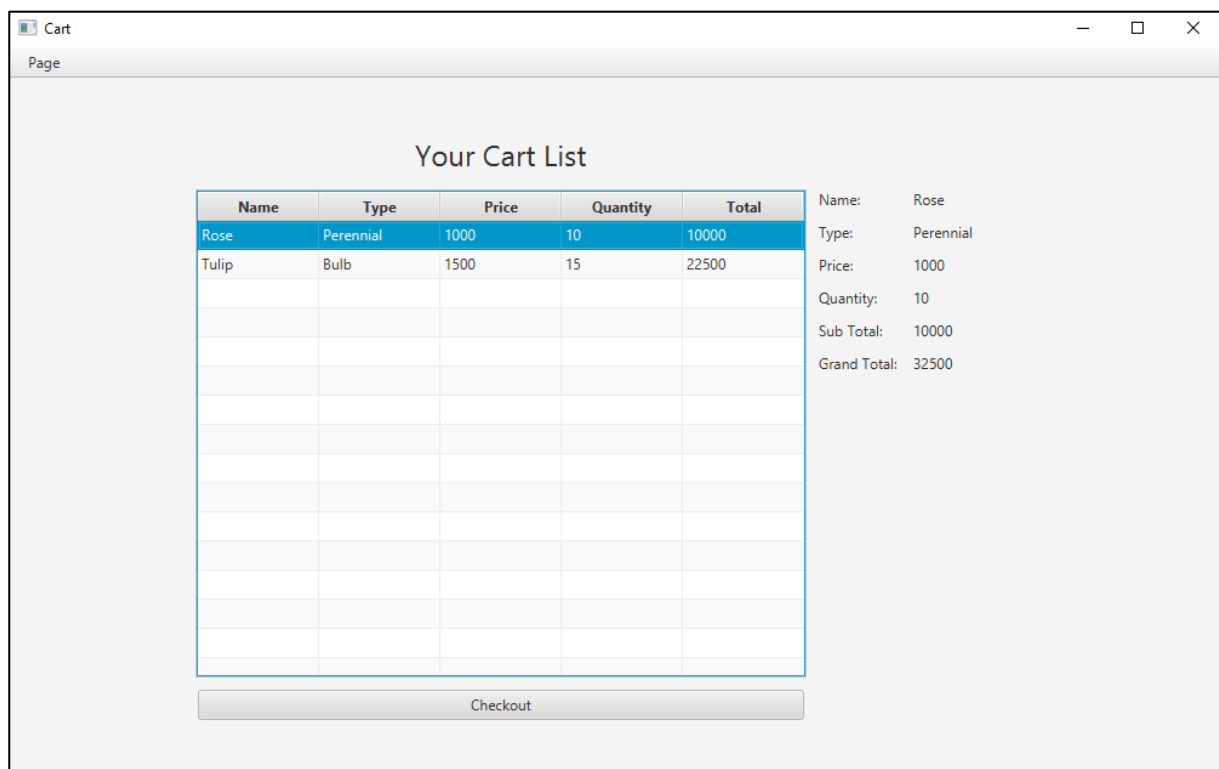*Figure 15. Cart Scene (No Product in Cart)*

Figure 16. Cart Scene (Product Selected)

Component:

- **Label** for:
  - Your Cart List
  - Product Detail:
    - Name
    - Type
    - Price
    - Quantity
    - Sub Total
    - Grand Total
- **TableView** for displaying all the products in the cart.
- **Button** for Checkout button.
- **MenuBar, Menu** for navigation bar
- **MenuItem** for navigation to Buy Product, Cart, and Log Out (Redirect user back to Login Scene).

Description:

- **Total** in the TableView is calculated from **Quantity * Price.**
- **Grand Total** is calculated by **summing all the Total values in the TableView**.
- **Check Out Button:**
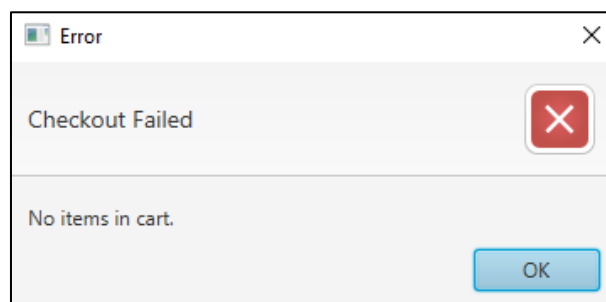 - **If the cart is empty** displays an Error Alert.

Figure 17. Cart is empty error alert.

  - **If cart is not empty, Generate** new **TransactionID** with **Format:**

TRXXX
Where **X**: Digit (0-9) according to user index (add previous Transaction ID by one on insert)

o   **Add** new transaction to **Transaction Header and Transaction Detail.**

o   **Remove** all flowers from **customer from cart.**

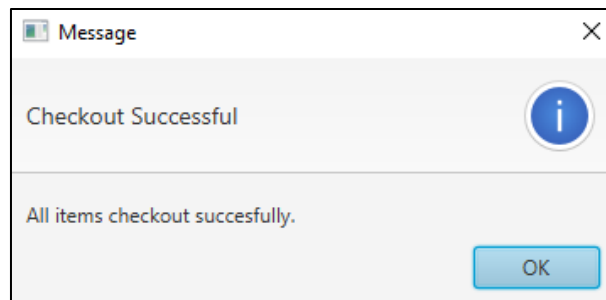o   **Show** information alert that the transaction is successful.

Figure 18. Checkout successful

8. **Admin Navigation Bar**

This navigation bar is **only available on Manage Product Scene**. It is **used by the admin to Log Out** (Redirect to login page).
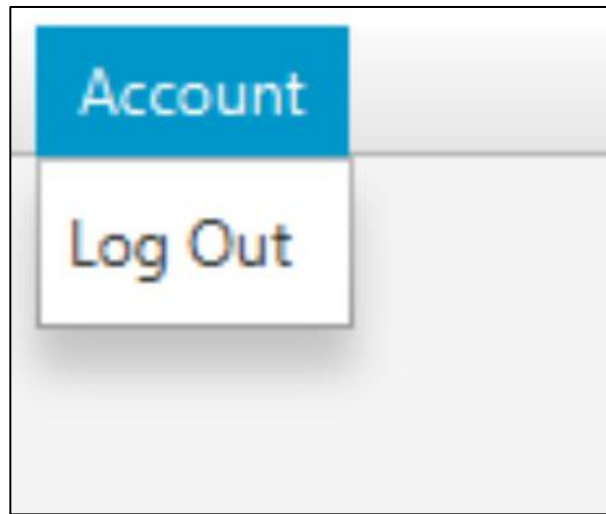

Figure 19. Admin Navigation Bar (Manage Product Scene)

Components:

- **MenuBar, Menu** for navigation bar

- **MenuItem** for navigation to Log Out (Redirect user back to Login Scene).

Description:

- **Log Out** is used to navigate user back to the Login Scene.

9. Manage Product Scene (Admin)

The Manage Product scene is **accessible only to users with the "Admin" role**. In this scene, the Admin can **view all flowers available in the database within a TableView**. By **clicking on a flower** from the list, the Admin can **display the details of the selected flower**. The Admin can then **update or delete** the selected flower or **add a new flower** to the list.
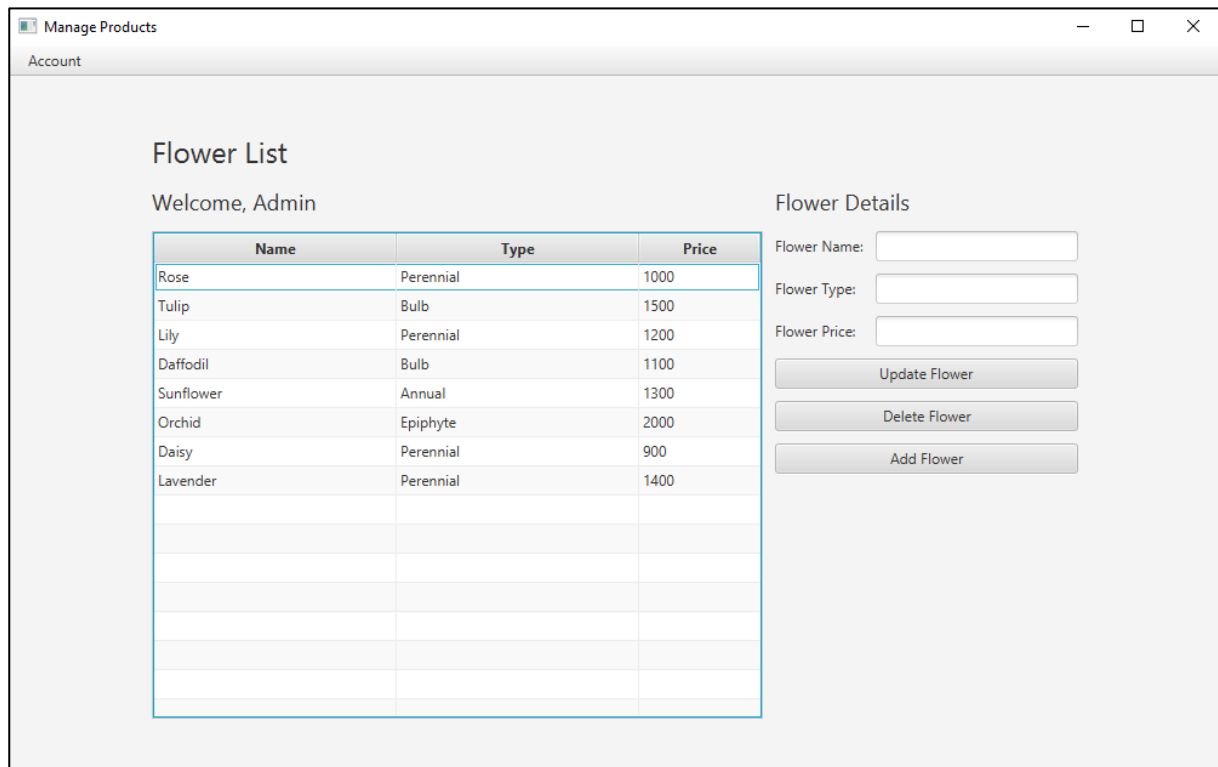

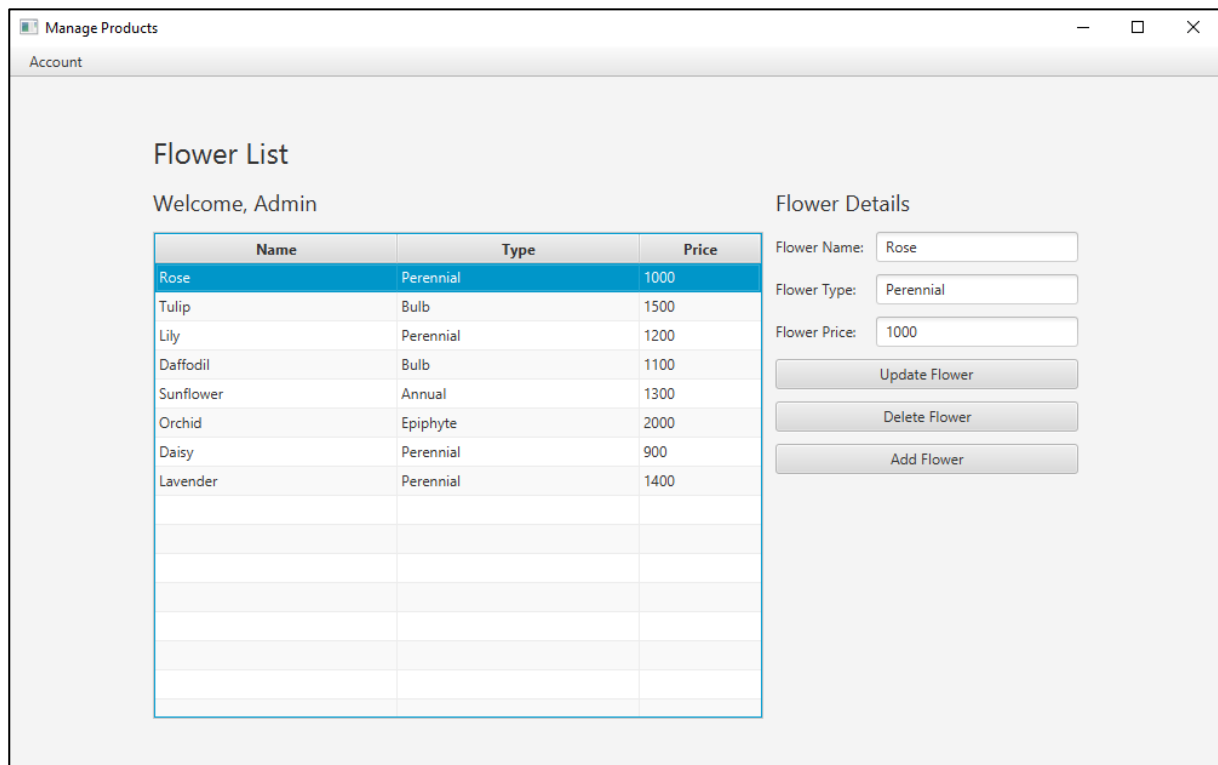*Figure 20. Manage Product Scene (No Product Selected)*

Figure 21. Manage Product Scene (Product Selected)

Components:

- **Label** for:
  - Flower List
  - Greeting
  - Flower Detail
    - Flower Name
    - Flower Type
    - Flower Price
- **TableView** for displaying all the products.
- **TextField** for Flower Name, Flower Type, Flower Price.
- **Button** for Update Flower, Delete Flower, Add Flower.
- **MenuBar, Menu** for navigation bar
- **MenuItem** for navigation to Log Out (Redirect user back to Login Scene).

Description:

- **Greeting Title** will say **"Welcome, [Current user's username]"**.
- **Display Flower Name, Flower Type, and Flower Price** value for each of the product in the **TableView**.

- If the **user clicks a produc**t from the product list, **update the Manage Product Scene to display details of the selected product.** The details consist of:
  - o Flower Name
  - o Flower Type
  - o Flower Price
- **If user click Update Flower Button:**
  - o If the **user did not select any of the products** from the product list, show an **error alert**.
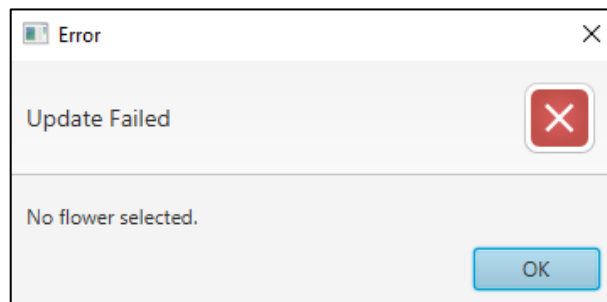

Figure 22. Update Product Alert (No product selected)

  - o **All fields** must be **filled.**
  - o **Flower price** must be **more than 0.**
  - o **Flower price** must be **a number.**
  - o If Flower successfully updated, show an **information alert** and **refresh the Manage Product Scene** to show the updated product in the table.
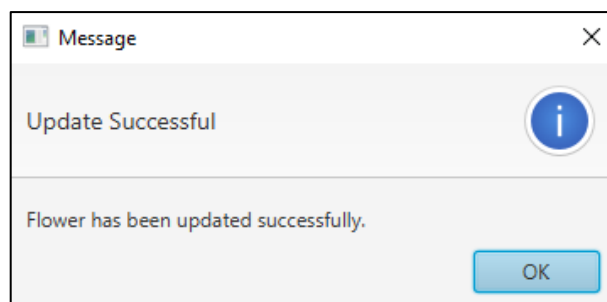

Figure 23. Update Product Successful Alert.

- **If user click Delete Flower Button:**
  - If the **user did not select any of the products** from the product list, show an **error alert**.
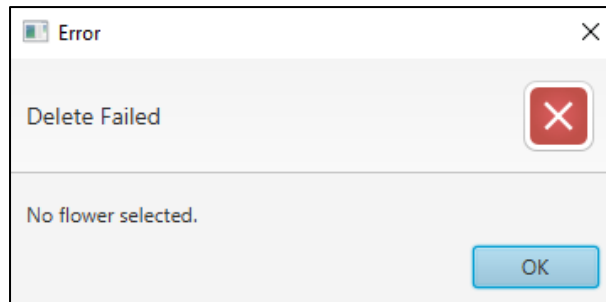

Figure 24. Delete Product Alert (No product selected)

  - If Flower successfully deleted, show an **information alert** and **refresh the Manage Product Scene** to show the new updated table.
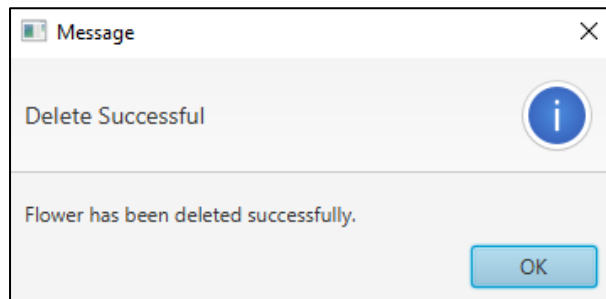

Figure 25. Delete Product successful Alert.

- **If user click Add Flower Button:**
  - **Generate** new **Flower ID** with **format:**

> **FLXXX**
> Where **X**: Digit (0-9) according to user index (add previous Flower ID by one on insert)
> Example: FL001, FL002, FL003

  - **All fields** must be **filled.**
  - **Flower price** must be **more than 0.**
  - **Flower price** must be **a number.**
  - If Flower successfully added, show an **information alert** and **refresh the Manage Product Scene** to show the new product in the table.
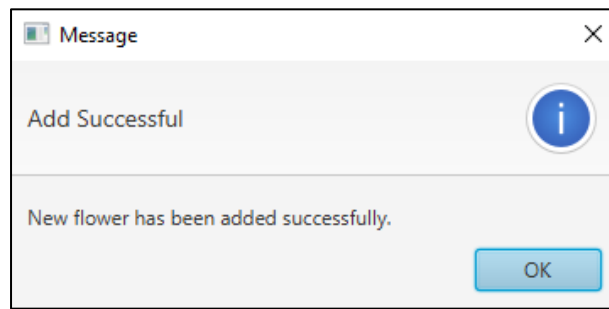
Figure 26. Add Product successful Alert

Additional notes:

1. Here are the credentials that you can use for this case:

   a. Admin Role

      Email: admin@gmail.com

      Password: admin123

   b. Customer Role

      Email: customer@gmail.com

      Password: customer123