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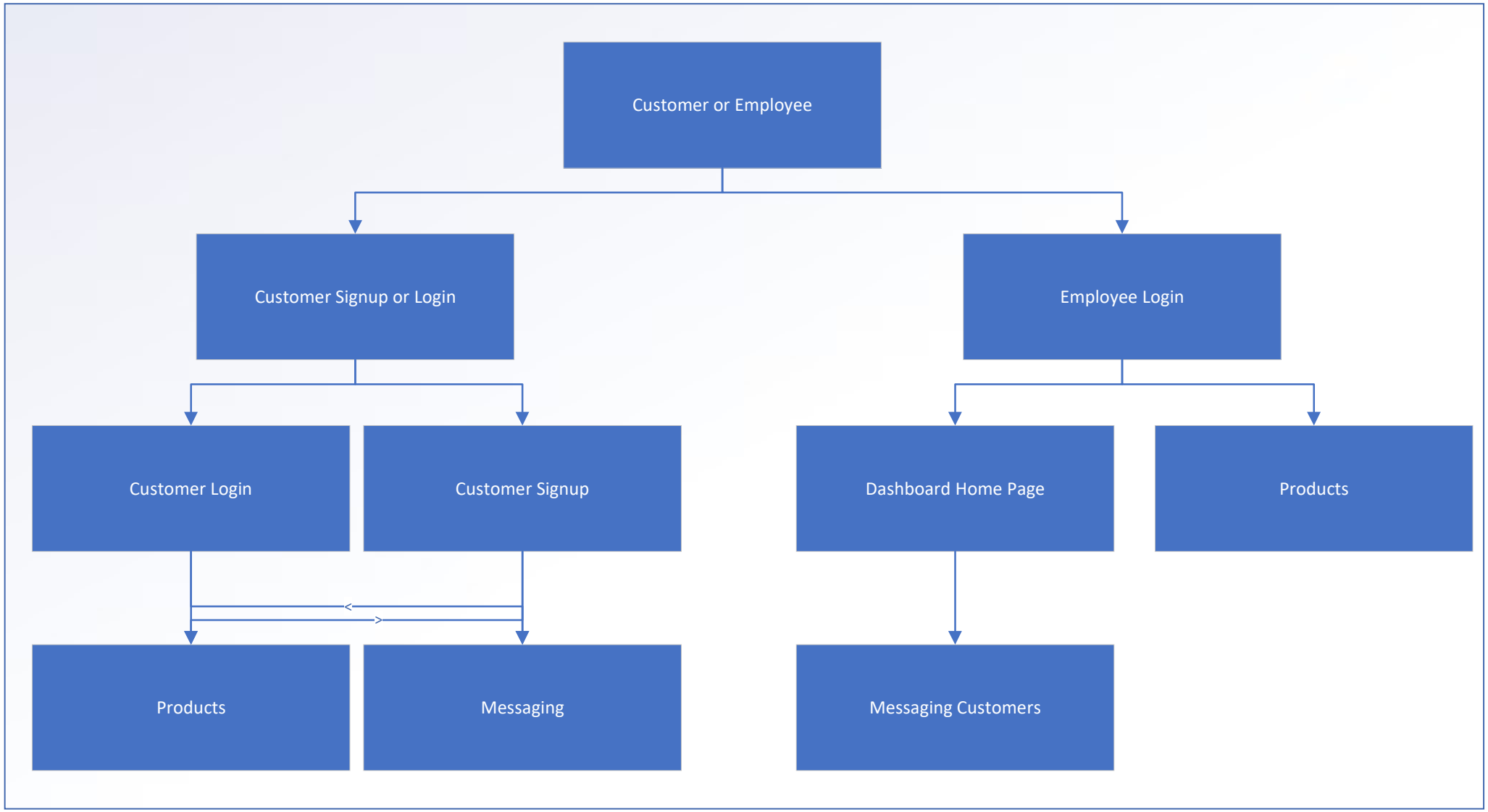
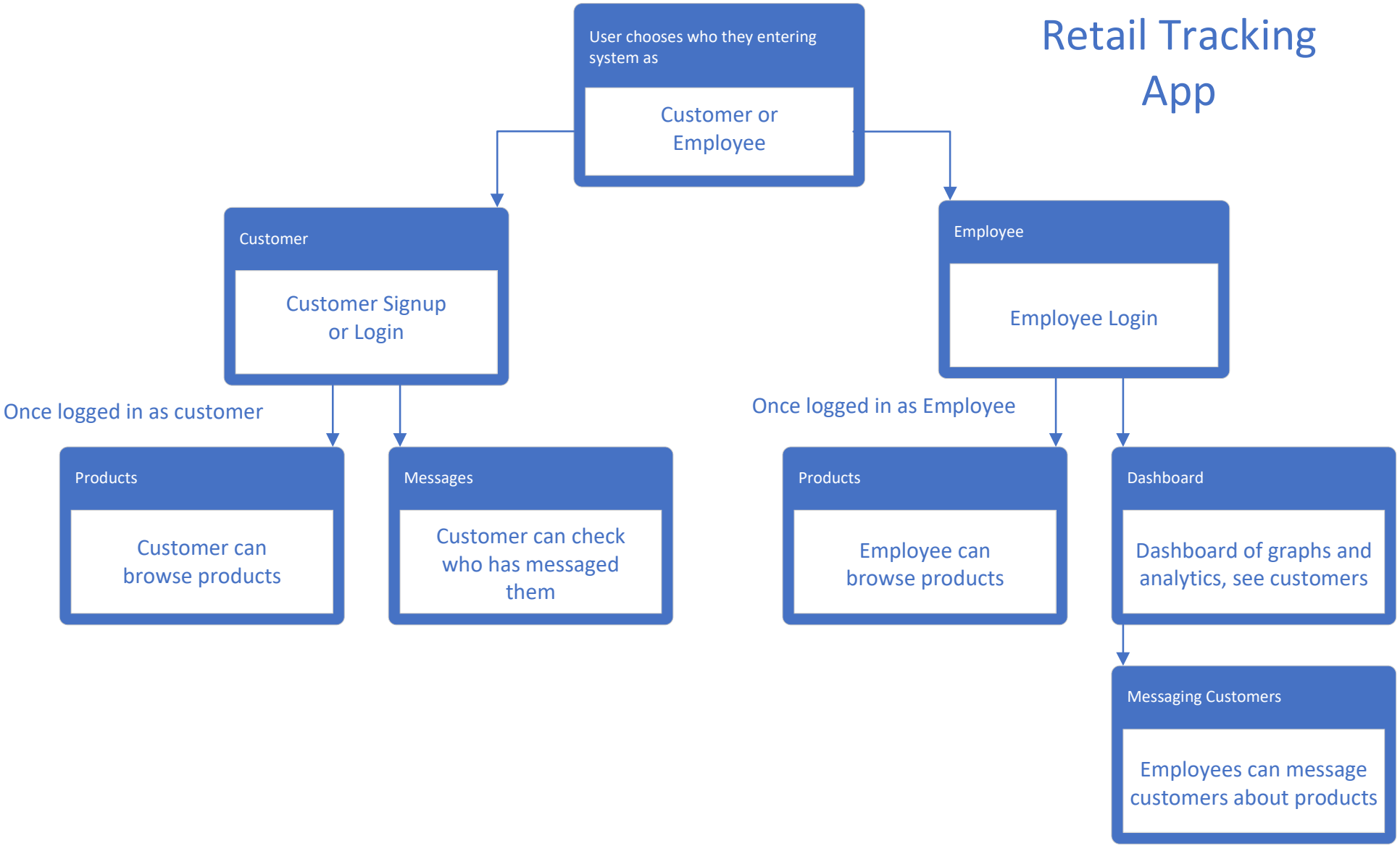
# Logo

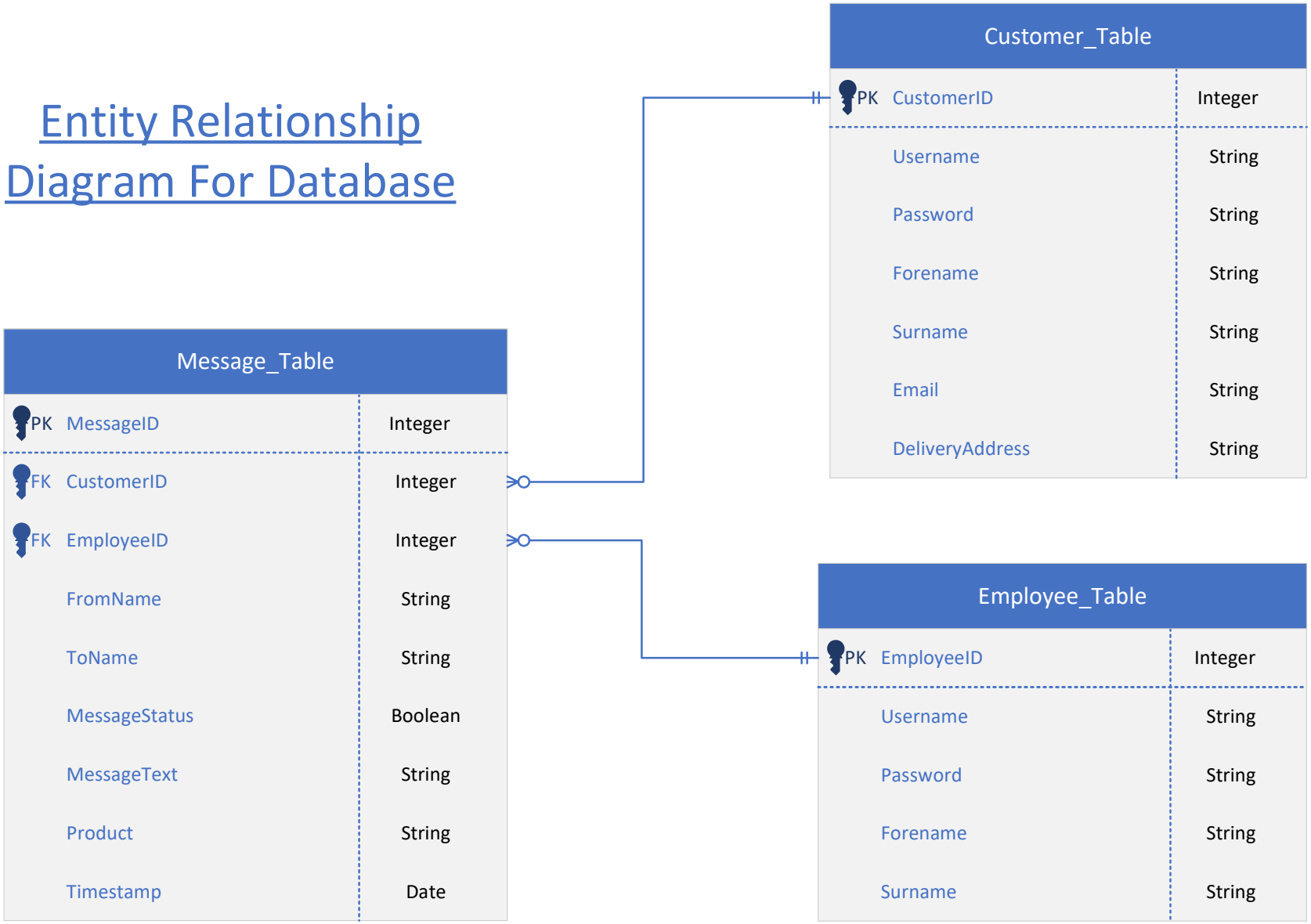
# Module Diagram of Hierarchy For Retail Tracking App



# Retail Tracking App



# Entity Relationship Diagram For Database



# Data Dictionary for Message Table

| Name | Description | Validation | Data Type | Sample Data |
|---|---|---|---|---|
| MessageID | Primary Key | Allocated DBMS | integer | 1 |
| CustomerID | Foreign Key | Presence check | integer | 2 |
| EmployeeID | Foreign Key | Presence check | integer | 3 |
| FromName | Message sender | Presence check | string | jack |
| ToName | Message receiver | Presence check | string | kevin |
| MessageStatus | Message unread or read | Presence check | boolean | read |
| MessageText | Message contents | Presence check | string | Hello, want ps4? |
| Product | Message selling point | Presence check | string | ps4 |
| TimeStamp | Timestamp when sent | Presence check<br>Format Check | Date | 11/01/2022<br>11:48am |

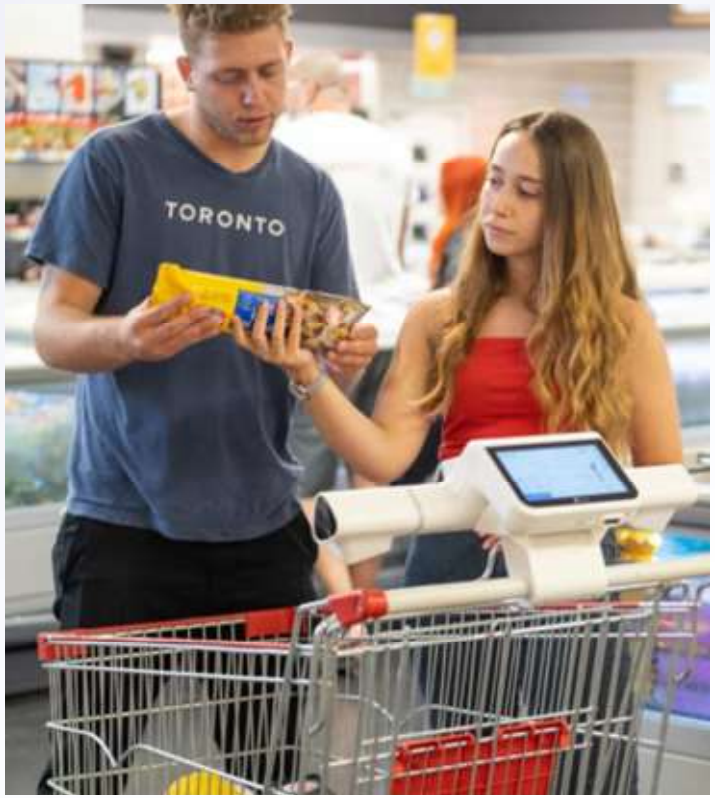
# Data Dictionary for Customer Table

| Name | Description | Validation | Data Type | Sample Data |
|---|---|---|---|---|
| CustomerID | Primary key for table | Allocated DBMS | integer | 1 |
| Username | Customer username | Presence check<br>Length check | string | jack4two |
| Password | Customer password | Presence check<br>Length check | string | pass |
| Forename | Customer first name | Presence check | string | jack |
| Surname | Customer second name | Presence check | string | mitchell |
| Email | Customers Email | Presence check<br>Length check<br>Between 2-20 char<br>Format check @ . | string | jack@.com |
| Delivery Address | Customer Delivery address | Presence check | string | 7 sultan road |

# Data Dictionary for Employee Table

| Name | Description | Validation | Data Type | Sample Data |
|---|---|---|---|---|
| EmployeeID | Primary key for table | Allocated DBMS | integer | 1 |
| Username | Employee Username | Presence check<br>Length check | string | employee1 |
| Password | Employee Password | Presence check<br>Length check | string | pass |
| Forename | Employee Firstname | Presence check | string | kevin |
| Surname | Employee Second Name | Presence check | string | spacey |

Customer / Employee Page



Customer

Employee

Customer Login / Signup

Please login, if you don’t have a account you can create one

Login

Sign-up

Back

Customer Login Page

# Enter your Login details:

Username:

Password:

Login

Back

Customer Sign-up Page

Username:

First Name:

Surname:

Email Address:

Password:

Confirm pass:

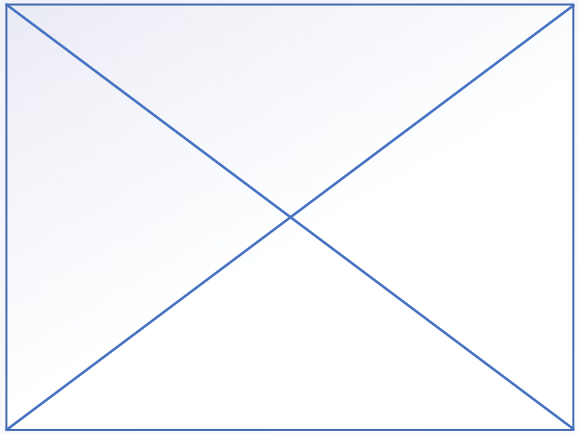
Accept Terms & Conditions, Privacy policy and Cookies policy

Create Account

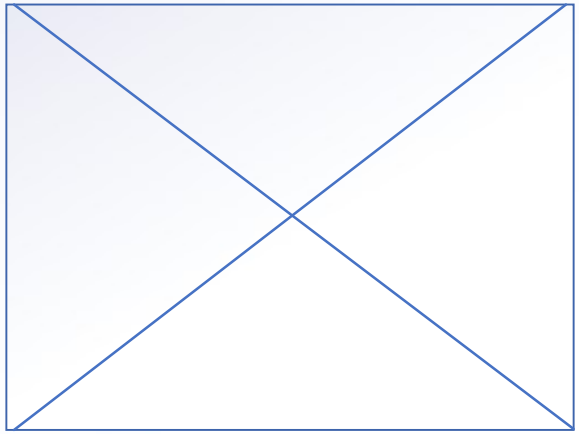
Back

GameStarz

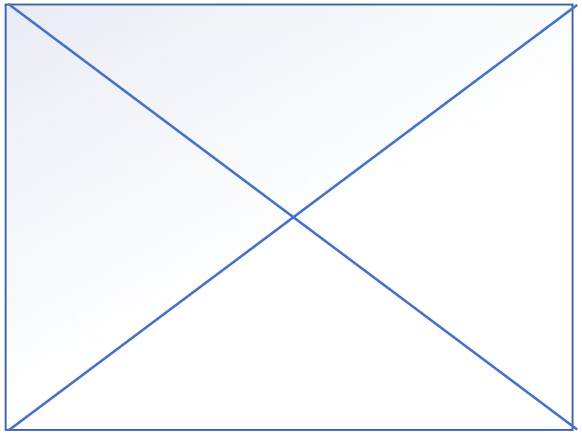
| Products | Messages | Dark Mode | Light Mode |
| --- | --- | --- | --- |



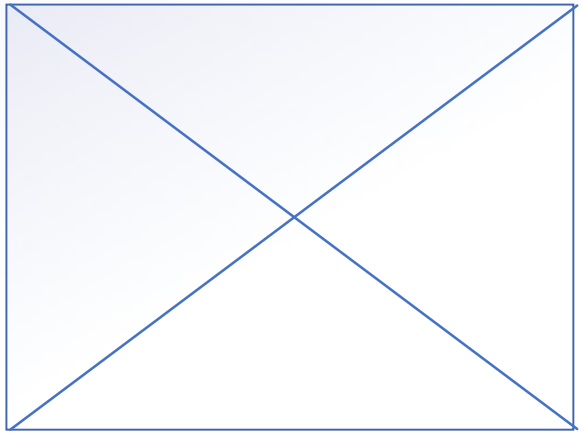
Product 1

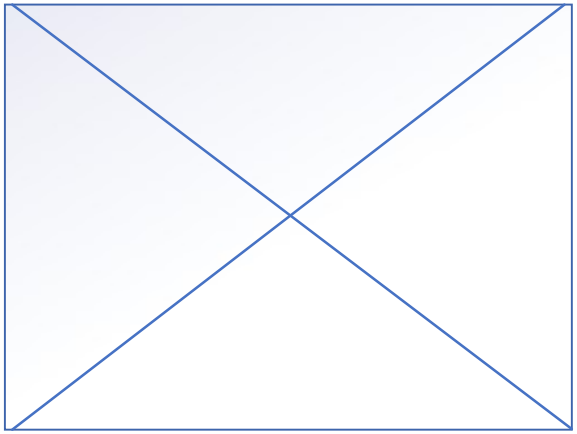


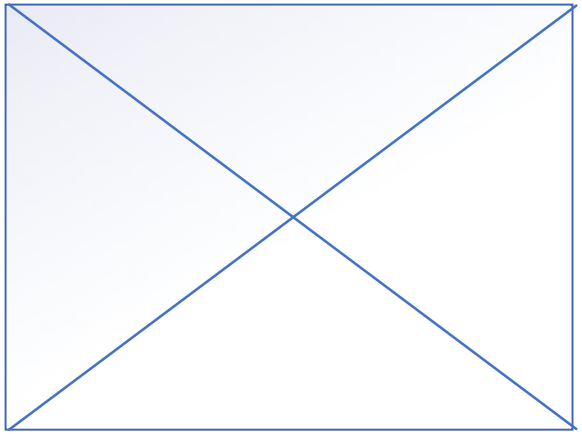
Product 2



Product 3







GameStarz

| Products | Messages | Dark Mode | Light Mode |
|---|---|---|---|

Employees Message

Message Read

Customers Reply

This is where the customer will reply to the employee

Send

Customer Login / Signup

# Enter your Employee Login Details:

Username:

Password:

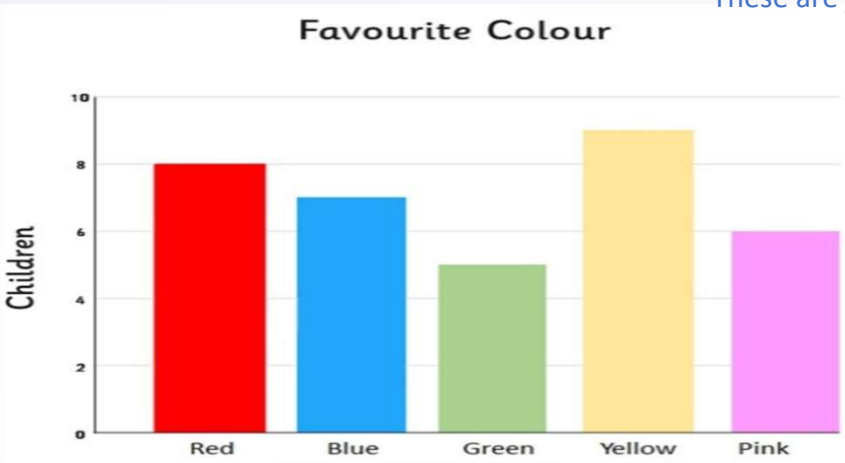
Login

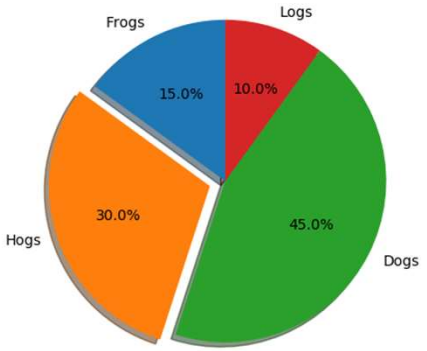
Back

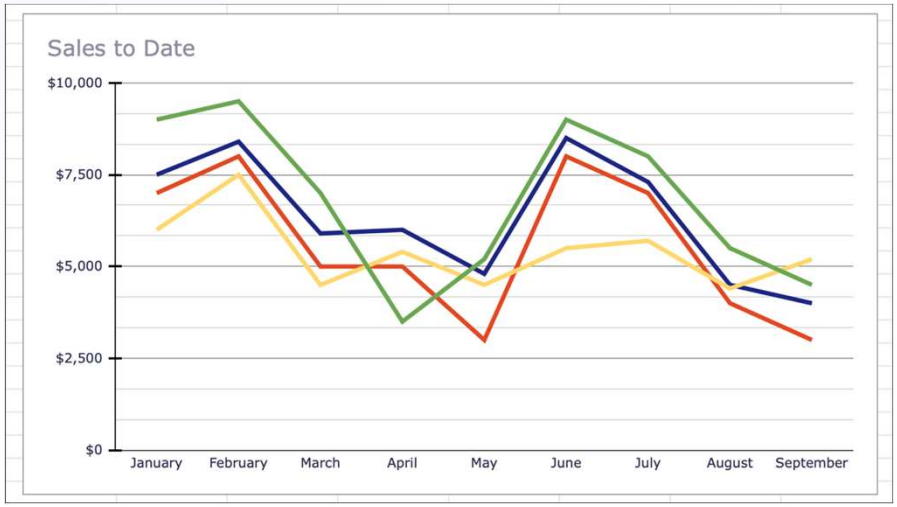
# GameStarz

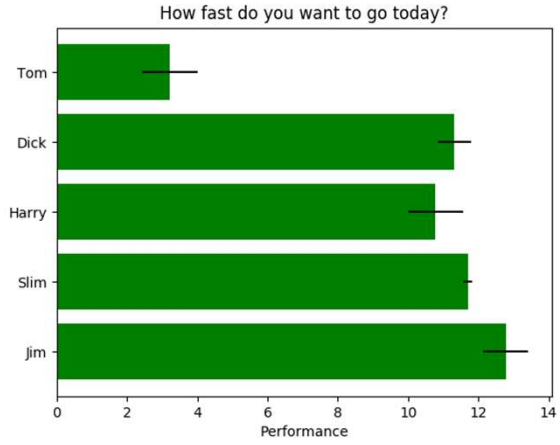
| Dashboard | Message Customers | Products | Dark Mode | Light Mode |
|---|---|---|---|---|

These are just examples of graphs I want



GameStarz

| Dashboard | Message Customers | Products | Dark Mode | Light Mode |
|---|---|---|---|---|

Your Customers

- Customer 1
- Customer 2
- Customer 3
- Customer 4
- Customer 5

Message

GameStarz

| Dashboard | Message Customers | Products | Dark Mode | Light Mode |
|---|---|---|---|---|

Employees Message

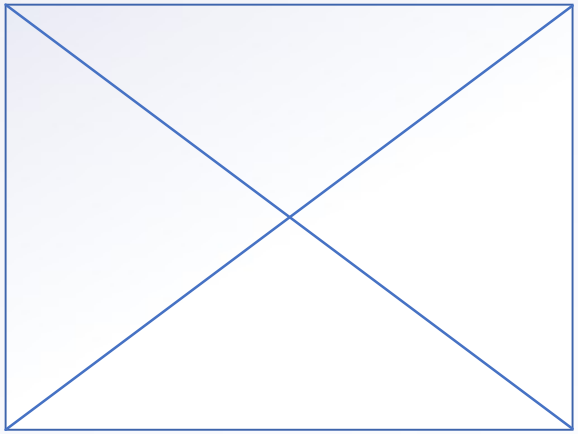
Customers Reply message

☑ Message Read

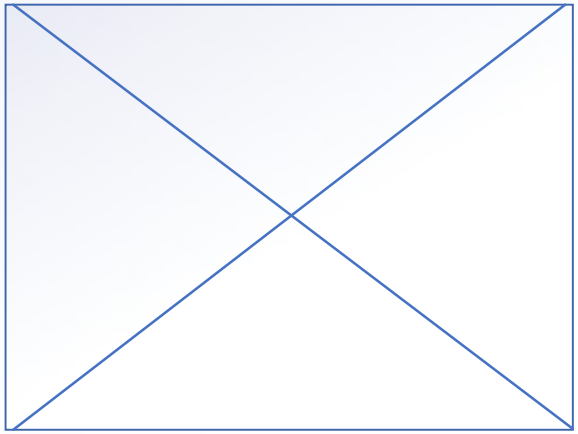
| The employee will then message here. | Send |
|---|---|

GameStarz

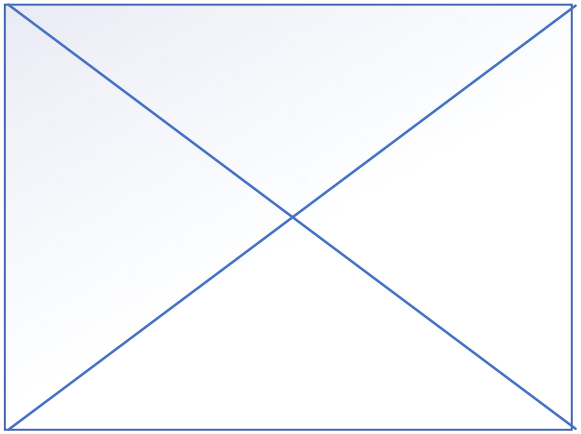
| Dashboard | Message Customers | Products | Dark Mode | Light Mode |
|---|---|---|---|---|



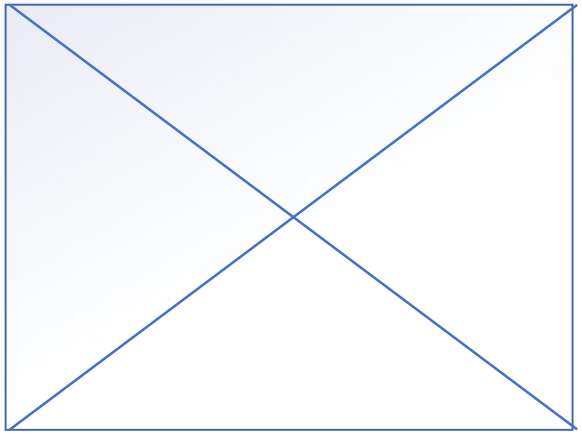
Product 1

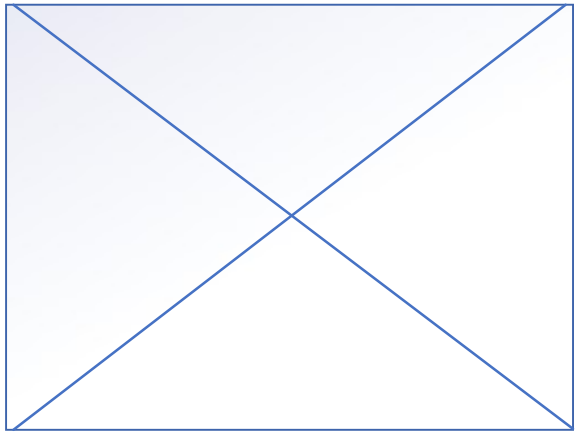


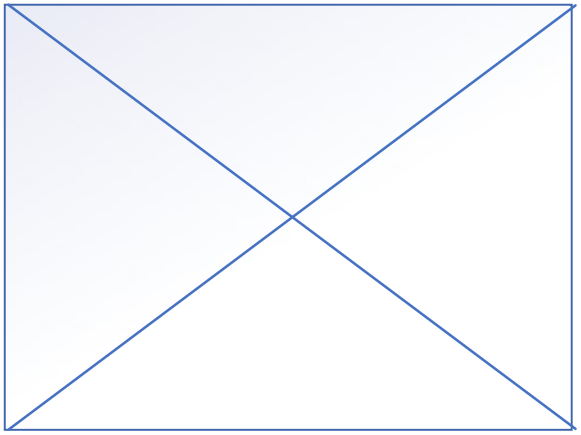
Product 2

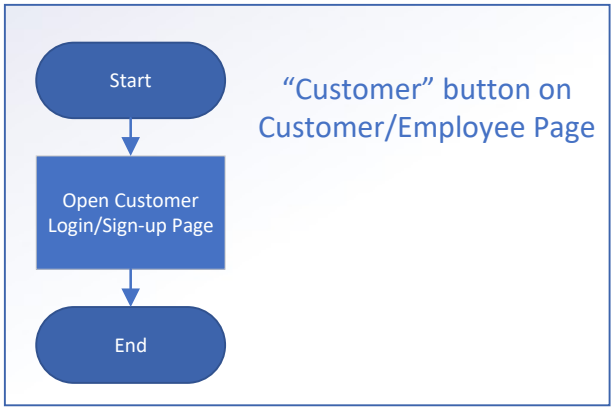


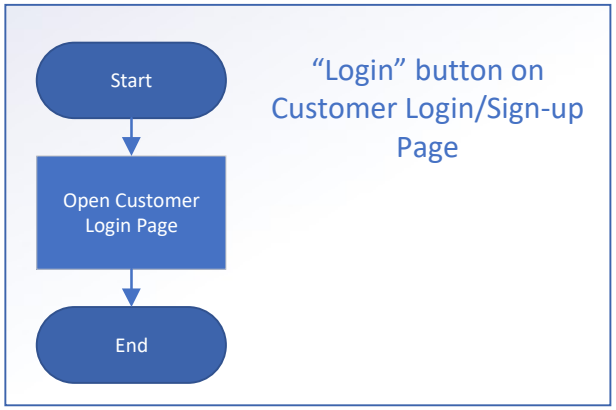
Product 3

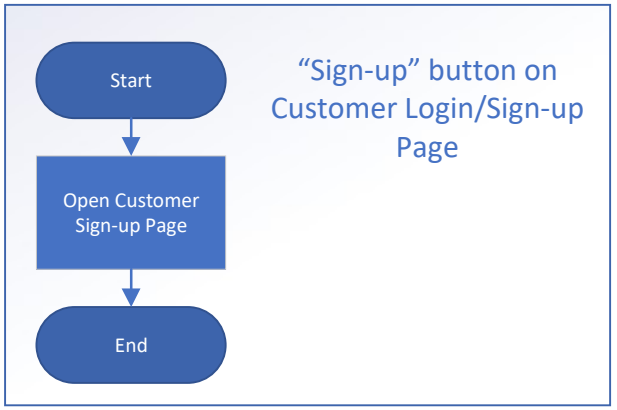


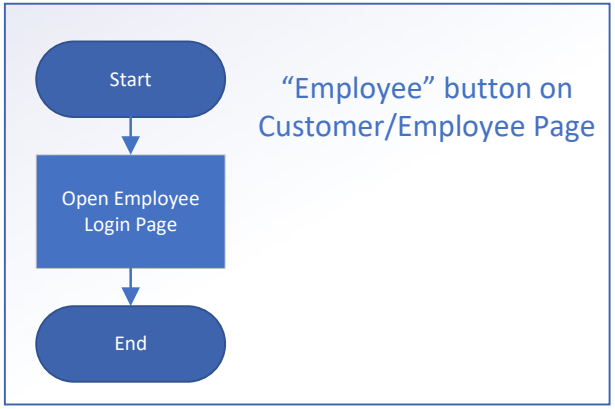


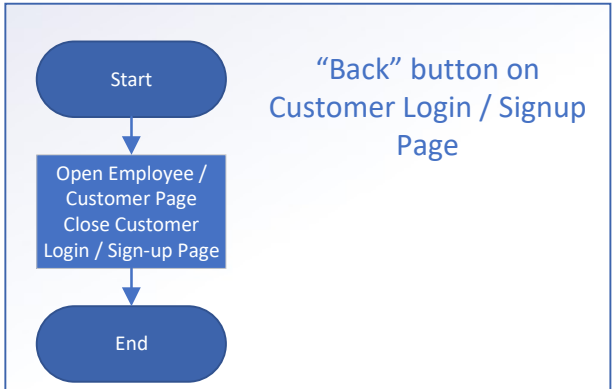


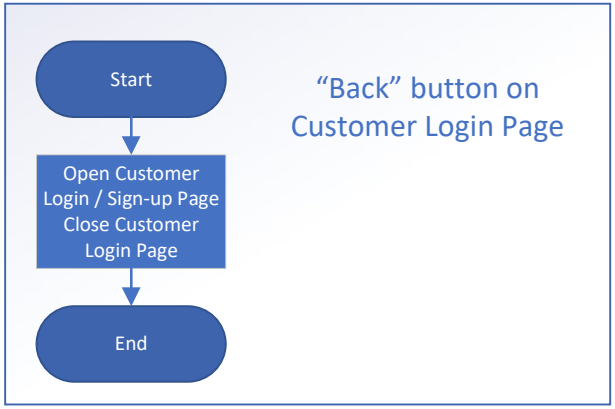


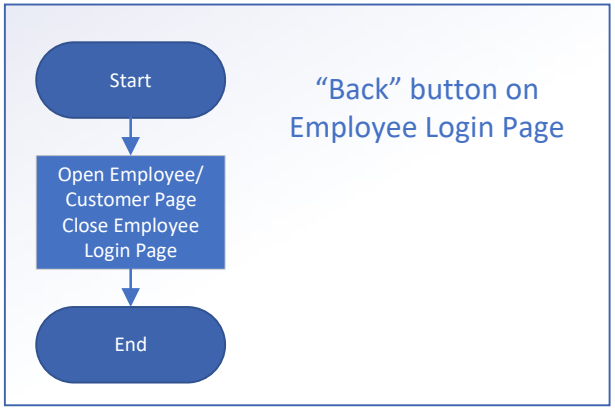



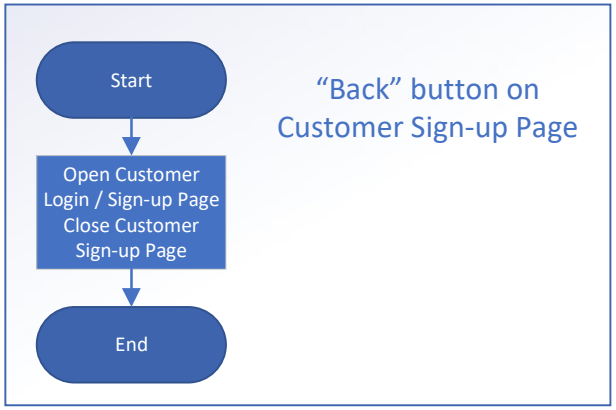



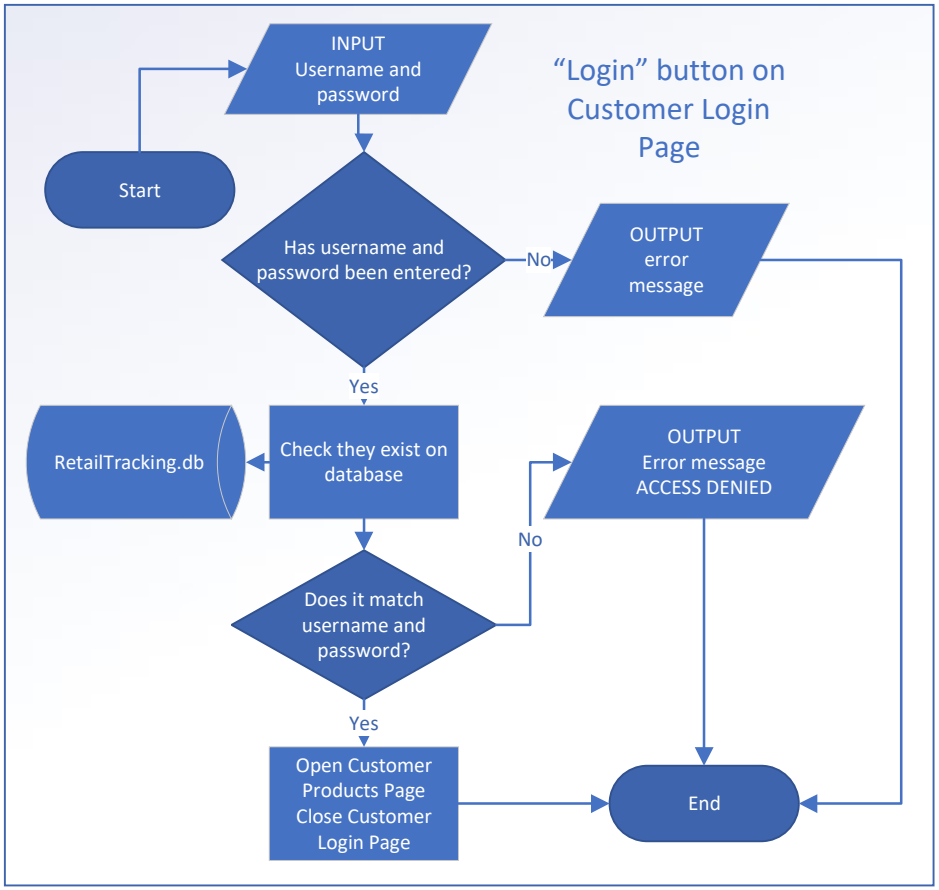



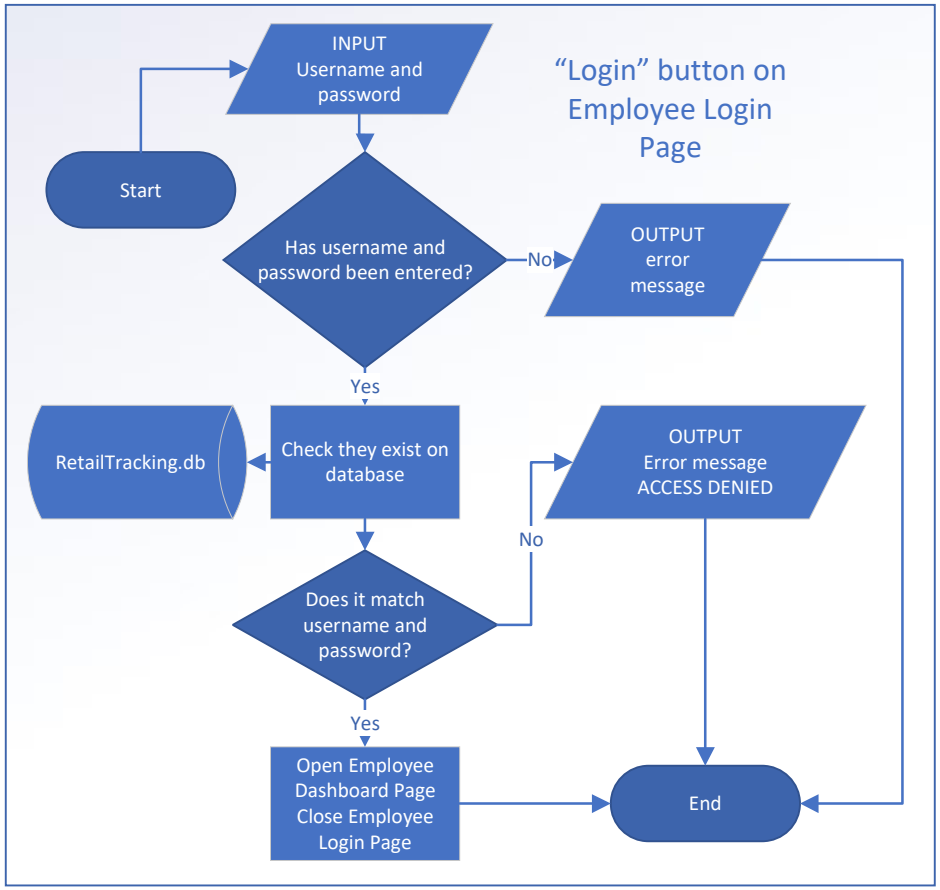



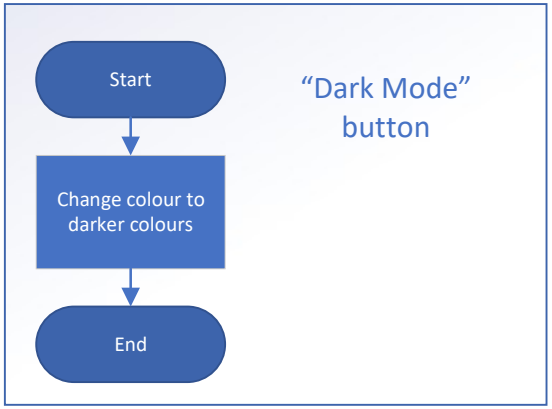



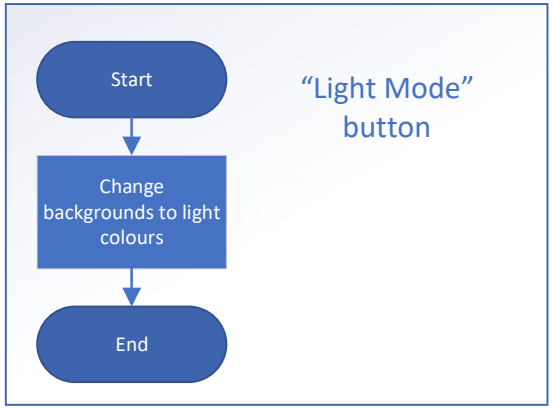



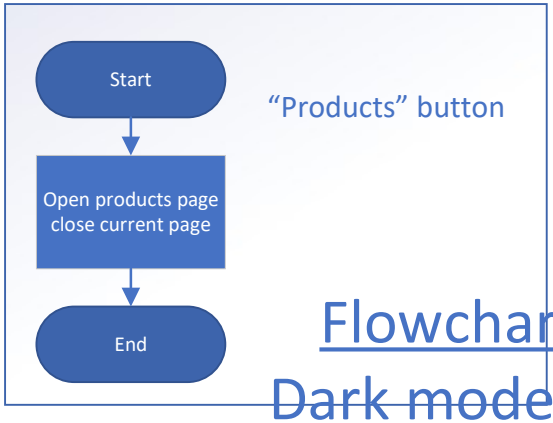

# Flowchart of buttons 1 Navigation



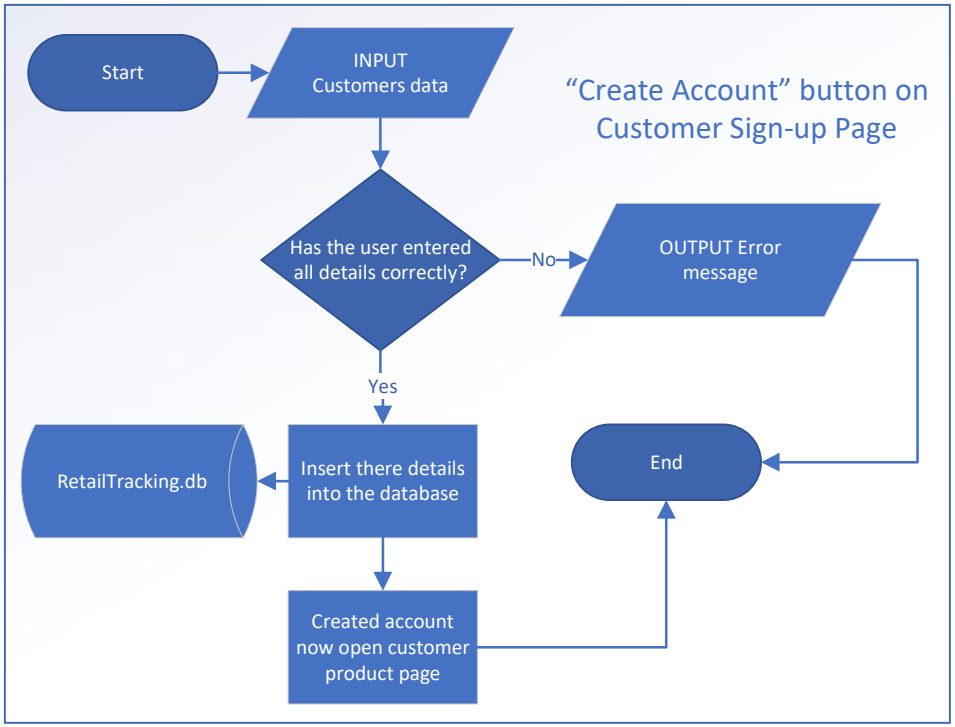



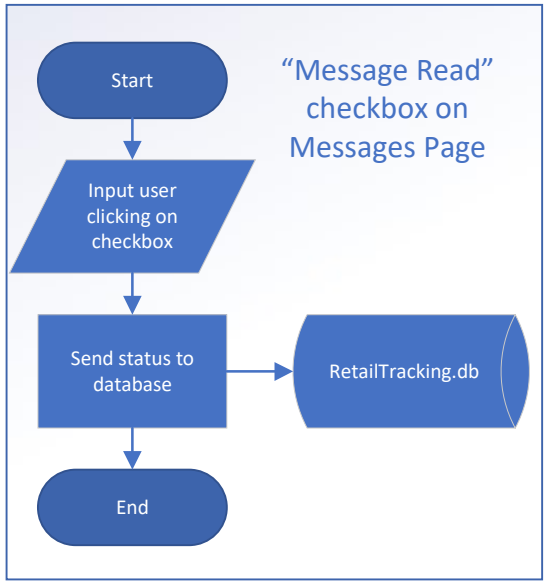



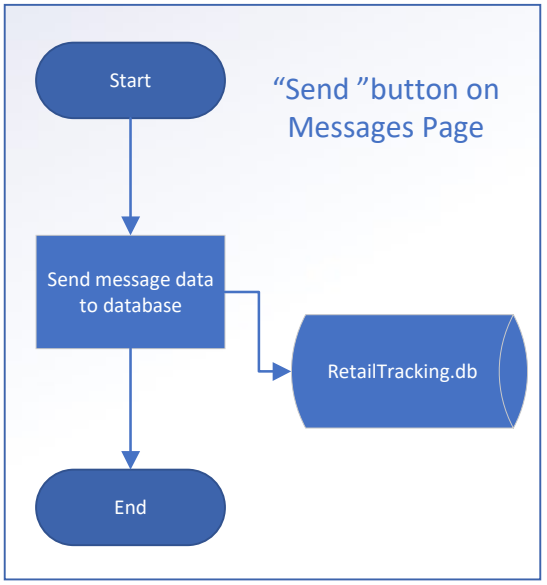



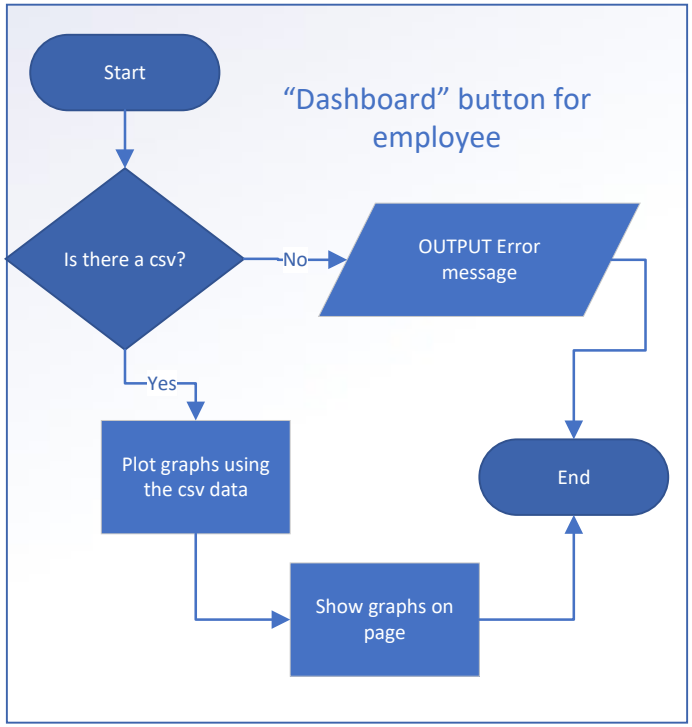

# Flowchart of buttons 2 Dark mode light mode and logins

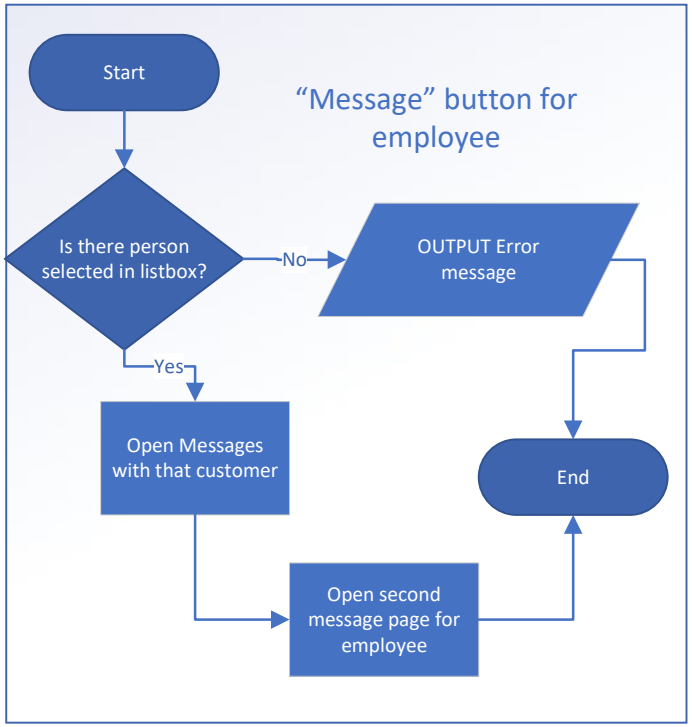
# Flowchart of buttons 3 Action buttons



# Colour Themes

4,394 Image Link 2 years

Like this palette?

## Dark mode

| #525252 | #414141 | #313131 | #CA3E47 |
|---|---|---|---|
| rgb(82, 82, 82) | rgb(65, 65, 65) | rgb(49, 49, 49) | rgb(202, 62, 71) |

4,497 Image Link 1 year

Like this palette?

## Light mode

| #F4F4F4 | #F0A500 | #CF7500 | #1A1C20 |
|---|---|---|---|
| rgb(244, 244, 244) | rgb(240, 165, 0) | rgb(207, 117, 0) | rgb(26, 28, 32) |

# Architecture

## Front End

The front end of the system is the user interface, basically any part of the system that is what the user will be looking at. I will be using guizero to make my front end GUI using python to create the interface and any event driven widgets inside it like buttons etc,

## Back End

The back end of the system will be the parts of the system that the user does not see. This could be anything from the code to the database as both wont be seen  by an end user. The code will be written in python and using packages of guizero I will be able to add all the functionality to the system and any event driven programming will be coded in the back end.
I will be using a database to store all of my data and to store data for use in other things
I want to also implement matplotlib to create graphs with data from the back end database

The database will be made with sqlite3 and my packages are, datetime, matplotlib, pillow, guizero
I will create my database with DDL SQL and manipulate the data.

## Python Packages

The python packages I will be using are , matplotlib to create any graphs or visual data to show in the employees dashboard, another package I may use is PIL or Pillow to change the size of images and make GIFs animated, The main package though will be Guizero as this is how I am going to create the gui for the user to interact with. Other package that may be used are datetime for timestamps of messages and also pandas to manipulate the csv data to get the graphs.

# Test Strategy 1

The way I am going to test my solution by working down the hierarchy starting with the first things to test this is because when I have to test other things they might have dependencies like needing the login button to be functional in order to test it.

| Date of Test | Priority | Component being tested | Type of test to be carried out | Dependencies |
|---|---|---|---|---|
| 11/01/2022 | High | "Customer" Button | Functionality test | N/A |
| 11/01/2022 | High | "Employee" Button | Functionality test | N/A |
| 11/01/2022 | High | "Login" button for customer | Functionality Test | Depends on first test being done |
| 11/01/2022 | High | "Login" button for customer login page | Functionality Test | User inputs<br>Depend on previous test |
| 11/01/2022 | High | "Back" buttons everywhere | Functionality Test | Depend on previous buttons |
| 11/01/2022 | High | "Sign-up" button | Functionality Test | Depend on previous buttons |
| 11/01/2022 | High | "Create Account" button | Functionality Test | User inputs |
| 11/01/2022 | High | "Create Account" button | Validation Tests | User inputs<br>Depend on previous buttons |
| 11/01/2022 | High | Terms and conditions | Validation | User input |
| 11/01/2022 | Medium | "Products" button customer | Functionality | Depend on user login |
| 11/01/2022 | Medium | "Messages" button for customer | Functionality | Depend on user login |
| 11/01/2022 | High | "Login" button for employee | Functionality | N/A |
| 11/01/2022 | Medium | "Dashboard" button for employee | Functionality | Depend on user login |
| 11/01/2022 | Medium | "Message customers" button for employee | Functionality | Depend on user login |

# Test Strategy 2

| | | | | |
|---|---|---|---|---|
| 11/01/2022 | High | Check all error messages work | Functionality | Depends on inputting wrong data |
| 11/01/2022 | Medium | "Products" page works for employee | Functionality | N/A |
| 11/01/2022 | Low | "Dark mode" works | Functionality | N/A |
| 11/01/2022 | Low | "Light mode" works | Functionality | N/A |
| 11/01/2022 | Medium | Employees can message customers | Functionality | N/A |
| 11/01/2022 | Medium | Customers can message employees | Functionality | N/A |
| 11/01/2022 | Low | Run pylint | Performance test | N/A |