Team Z

Online Computer Store
Phase II: Design Report

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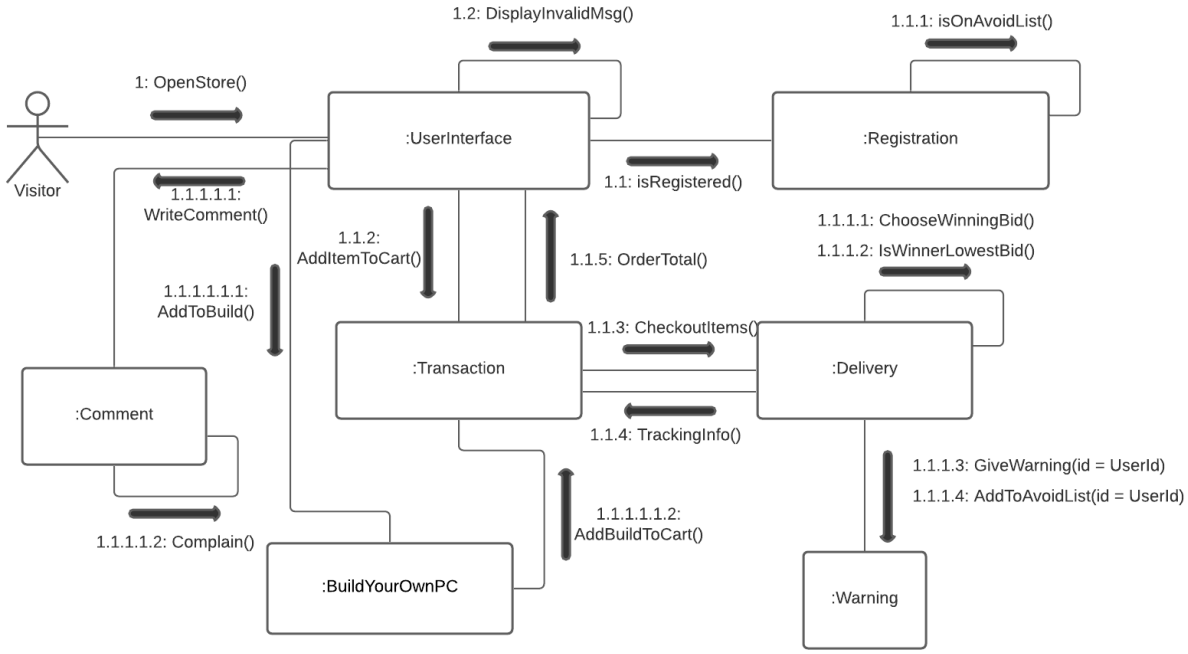
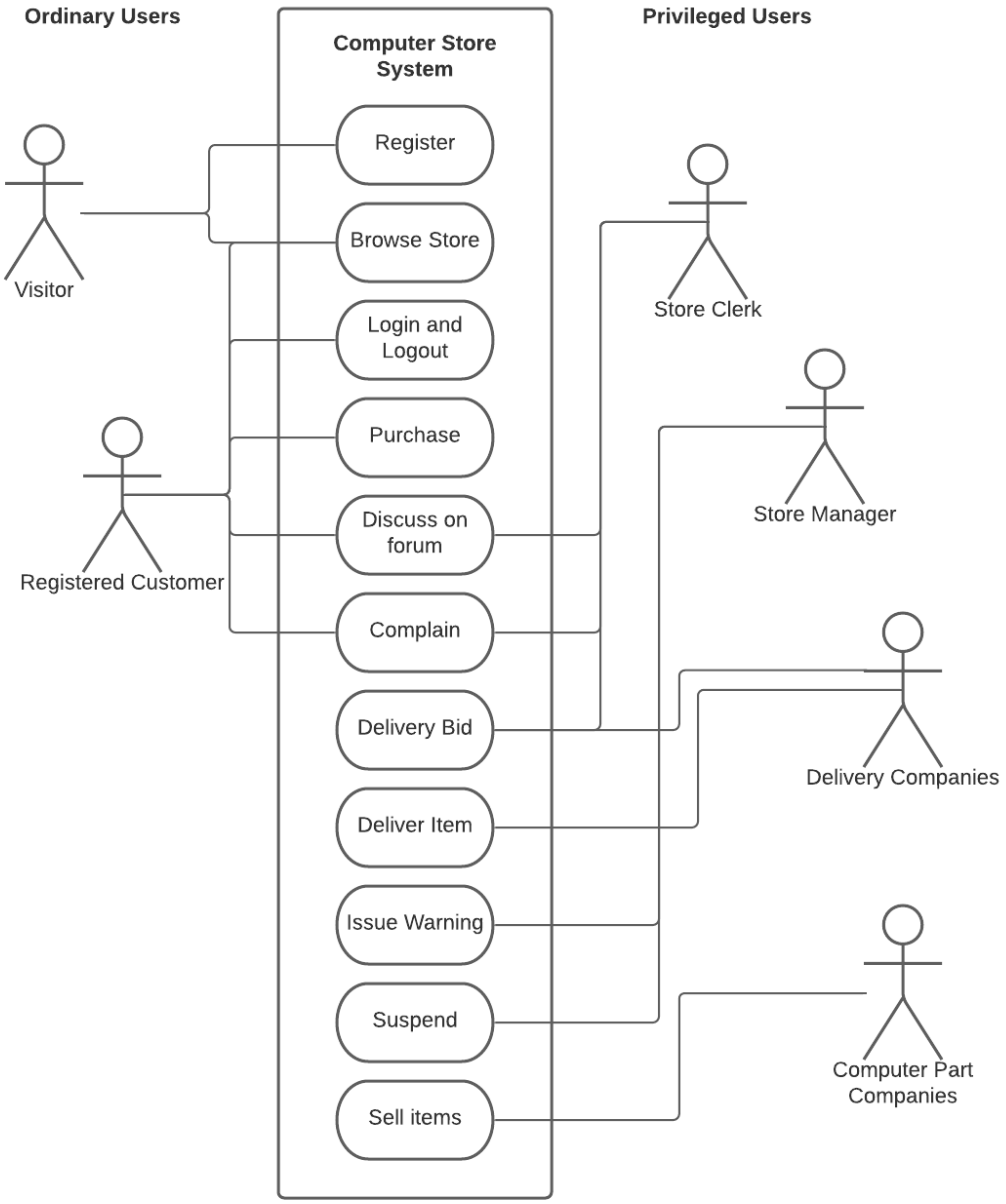
1. Introduction - Collaboration Class Diagram



2. All Use Cases

In this section, we will go over the user case designs and go in depth of how each scenario will proceed as well as exceptional cases. For each, we will draw a collaboration/sequence/petri-net diagram showing the interaction between the entities and actors and delve into detailed information. We will see how they will interact and what process must we take in able to complete the user cases.

2.1 User-Case Model



2.2 User Case Scenarios with Collaboration/Sequence Diagrams

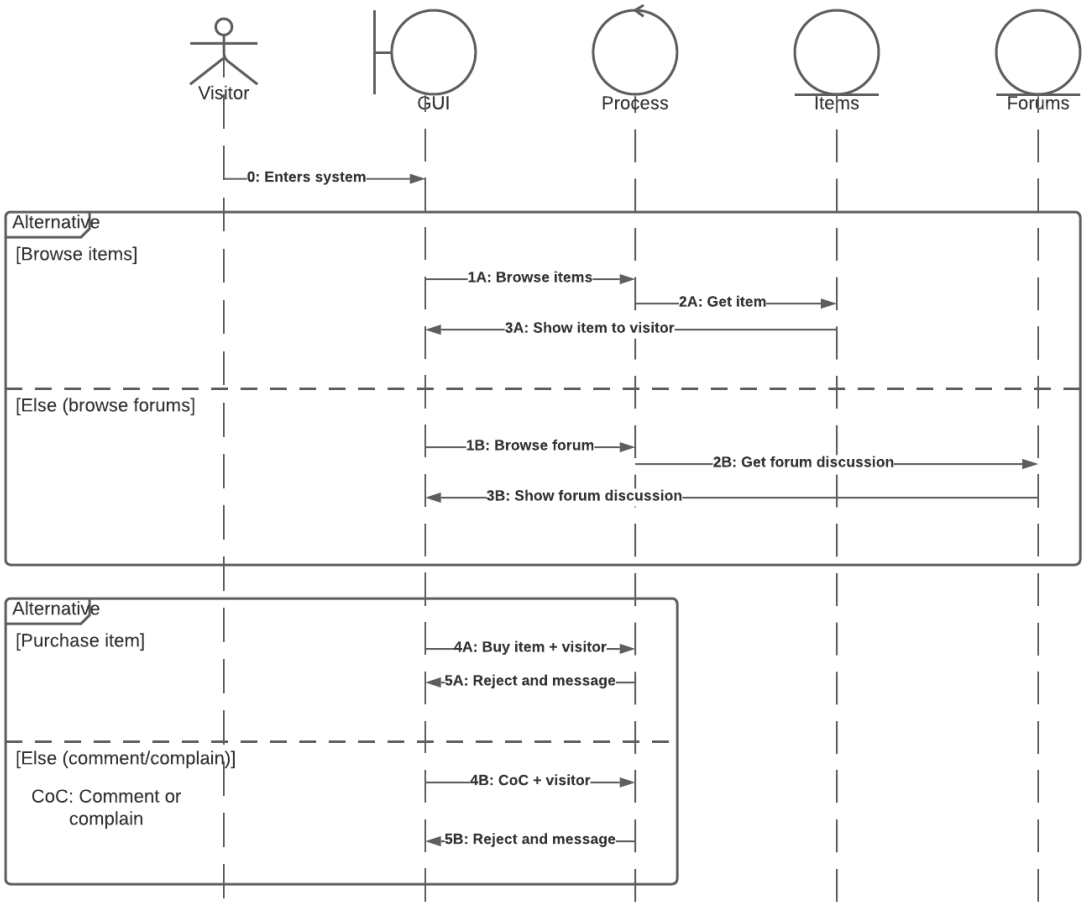
1. A visitor (ordinary user) can browse the system

Under Normal Scenarios:

A visitor is able to get into the system without logging in. They can browse computer parts in the system and are able to view the forums as well. They are able to see the top 3 suggested computers and top 3 popular computers

Under Exceptional Scenarios:

At any point if the visitor tried to purchase a product, comment on a forum, make a complaint, they shall be prompted to make an account and will be denied since they are not a registered user.



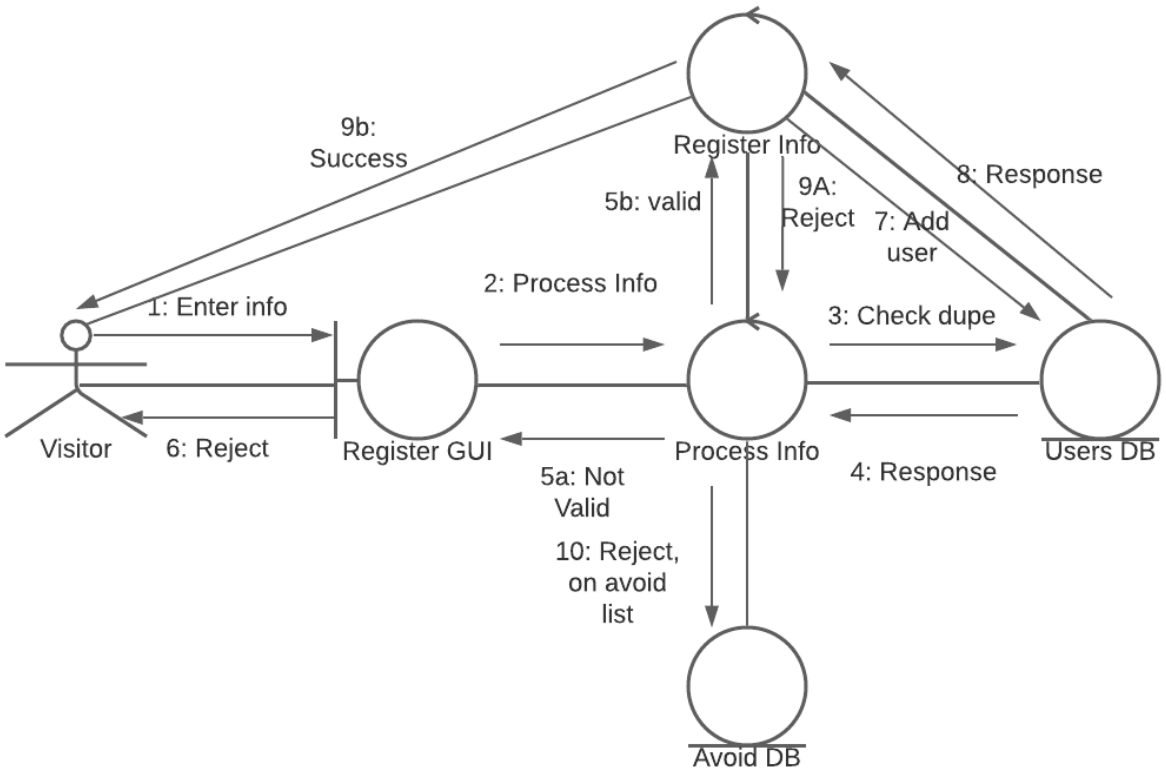
2. A visitor (ordinary user) can register to become a customer

Under Normal Scenarios:

A visitor, after browsing the store, decides to register in order to be able to purchase or comment on the forum. They are prompted by a window in which they must enter their credentials. Credentials include name, email, and a password. The password will go through double check to make sure it matches. They will be rejected if their email is on the "AVOID" list.

Under Exceptional Scenarios:

The visitor tried to register for an account while leaving some or all text field blanks so they are unable to register. The visitor failed to match the passwords twice so they must fix their mistake. Lastly, the email they used is already in use and cannot be added to the database.



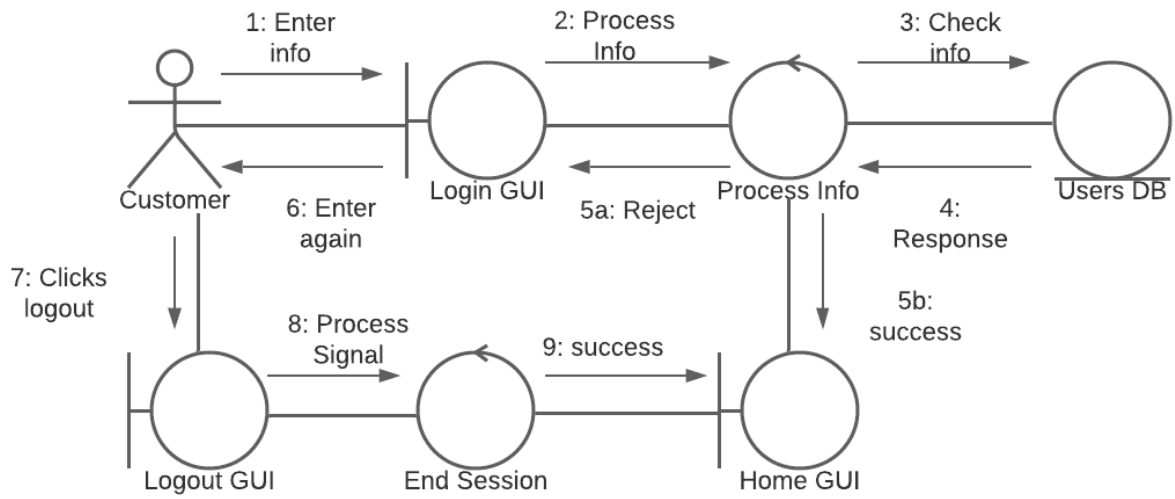
3. A registered customer (ordinary user) logs in or logs out

Under Normal Scenarios:

A registered customer can login using their credentials they used to register an account. While logged in the user can also log out to end their session.

Under Exceptional Scenarios:

The registered customer inputted the wrong password and must try again in order to log in.



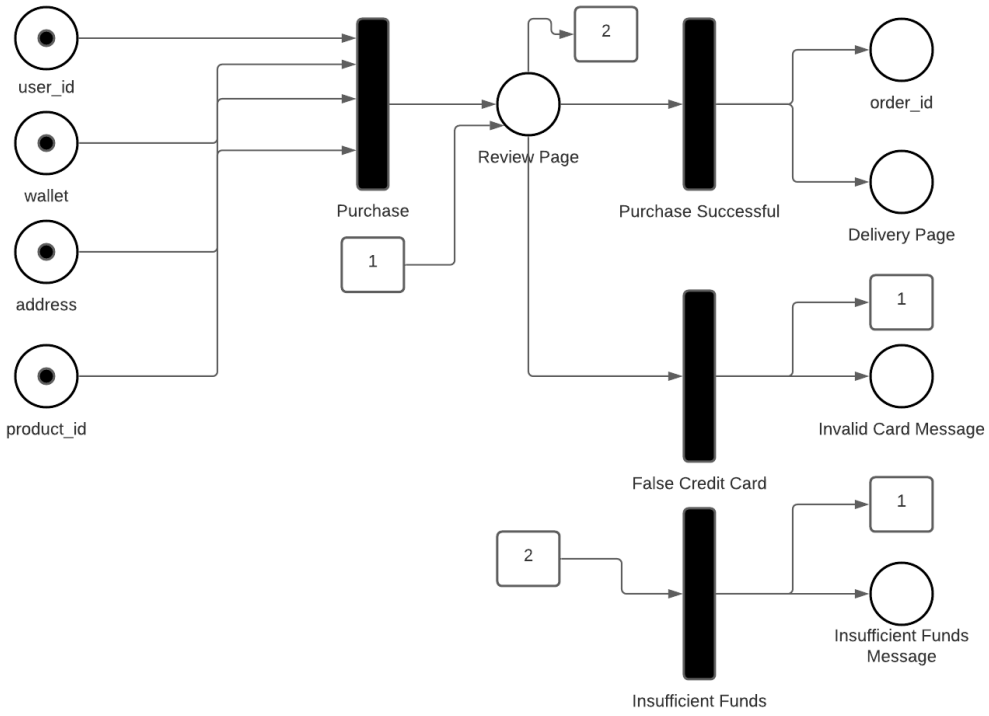
4. A registered customer (ordinary user) can purchase an item

Under Normal Scenarios:

The registered customer can purchase one whole computer, just a part, or several parts. The user then enters their working credit card or deposits money for a future purchase. At confirmation of purchase, the system checks for their bank account or credit, on success they will be charged and the purchase gets moved onto the delivery system.

Under Exceptional Scenarios:

The registered customer has put false credit information and will be denied with a prompt saying the card is invalid or no credit information was provided. The registered customer's credit information notifies our system that they don't have enough money so the transaction is stopped and a prompt will come up describing that there are insufficient funds.



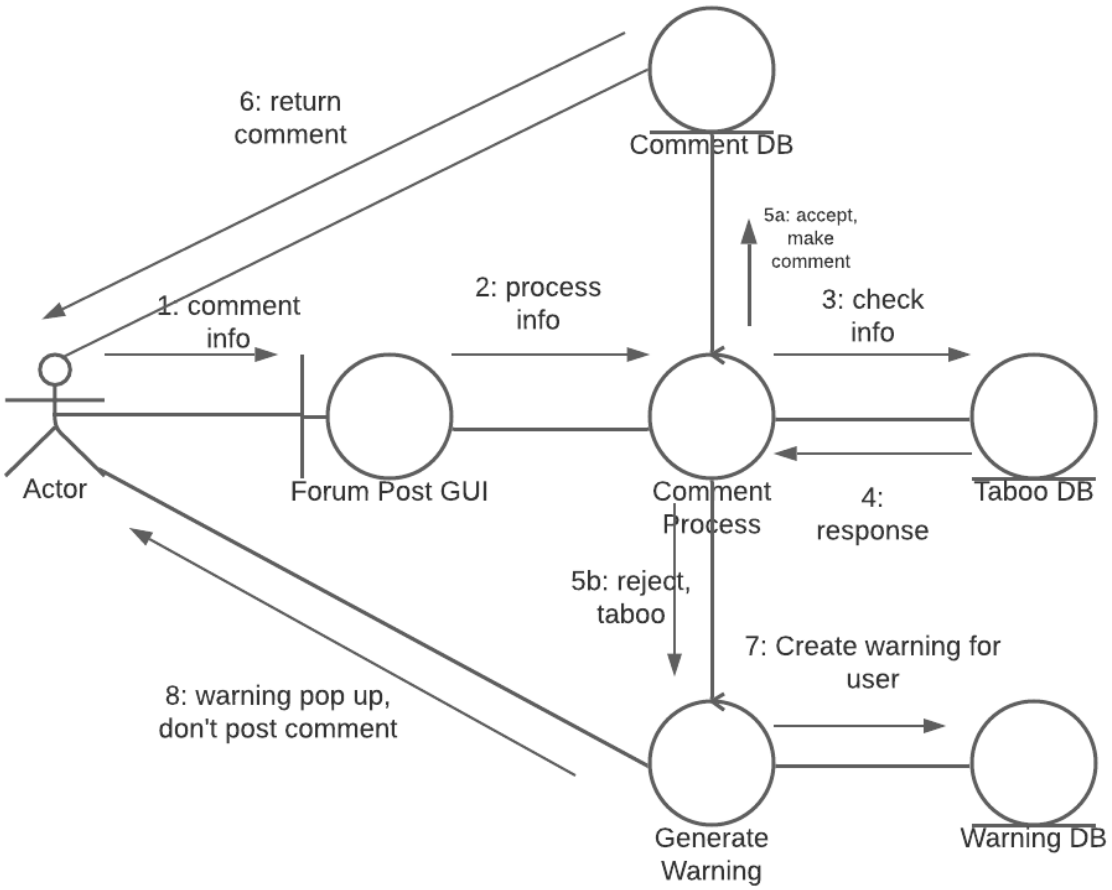
5. A registered customer (ordinary user) can discuss on the forum with other registered customers and store clerks.

Under Normal Scenarios:

A registered customer can search through the forums and upon landing on a specific forum post, they can add comments and discuss with other registered customers or store clerks.

Under Exceptional Scenarios:

The registered customer leaves a comment containing a "taboo" word which is on the list of blocked words therefore the system generates a warning and applies it to the account of that user.



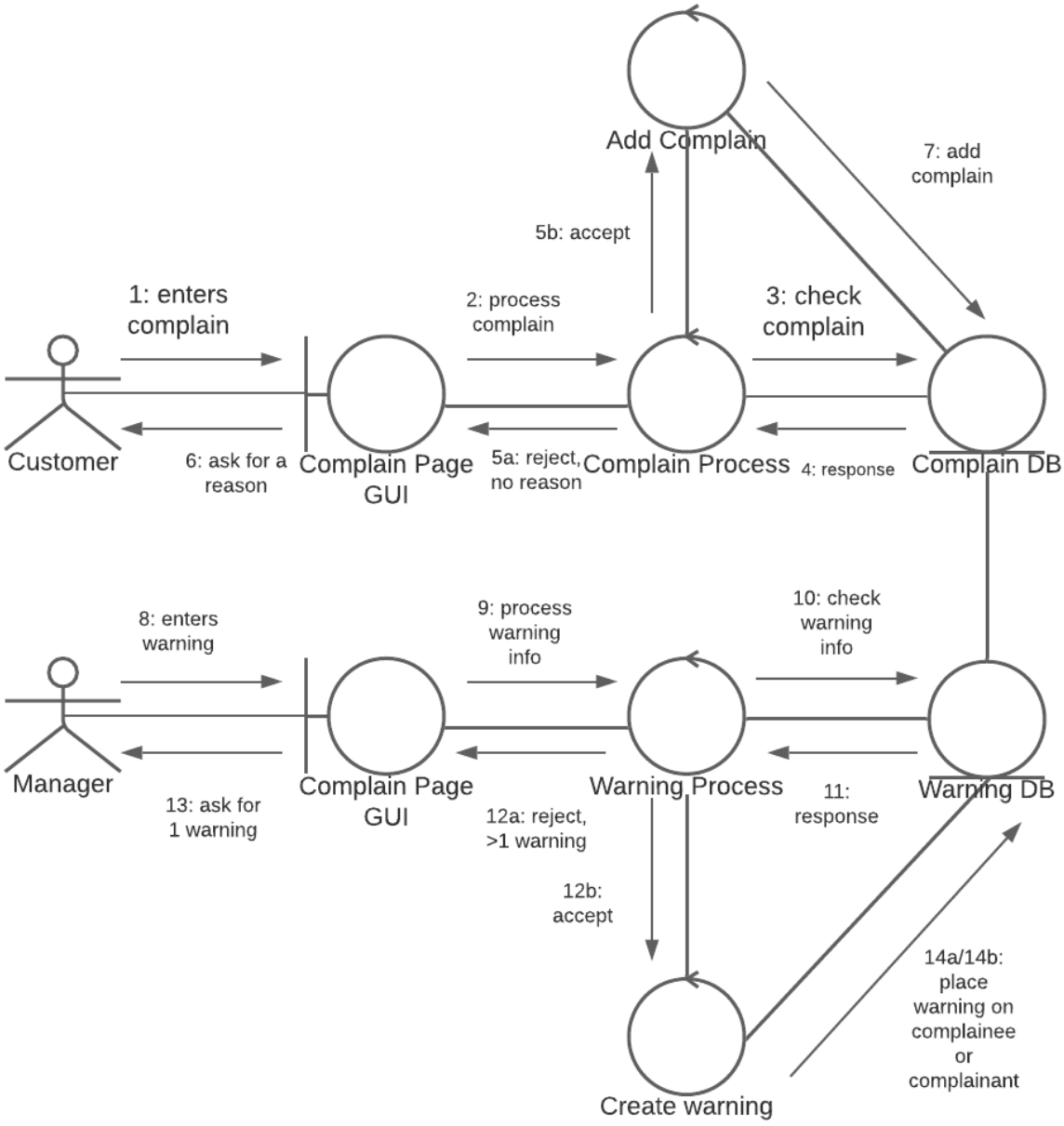
6. A registered customer (ordinary user) can file a complaint on another registered customer, purchased item, store clerk, or delivery company.

Under Normal Scenarios:

A registered customer going through a forum sees that they are violating the systems code of conduct and complains about them. Also, they may have some issues with their items and complain to the system. Furthermore, they can complain about a delivery company and even a store clerk. They give information on why they complain and it is placed in the complaint system where the store manager can see them. The other registered customer or delivery company can see if they were reported and dispute the complaint.

Under Exceptional Scenarios:

The registered customer puts a complaint on one of the entities stated as before: a registered customer, a store clerk, or a delivery company. The store manager views both sides of the complaint and if they believe the registered user who filed the complaint is wrong then they instead will receive a warning. If store managers tries to put no warning or give them both warnings, reject.


Add Complain
7: add complain
5b: accept
1: enters complain
2: process complain
3: check complain
Customer
6: ask for a reason
Complain Page GUI
5a: reject, no reason
Complain Process
4: response
Complain DB
8: enters warning
9: process warning info
10: check warning info
Manager
13: ask for 1 warning
Complain Page GUI
12a: reject, >1 warning
Warning Process
11: response
Warning DB
12b: accept
14a/14b: place warning on complainee or complainant
Create warning

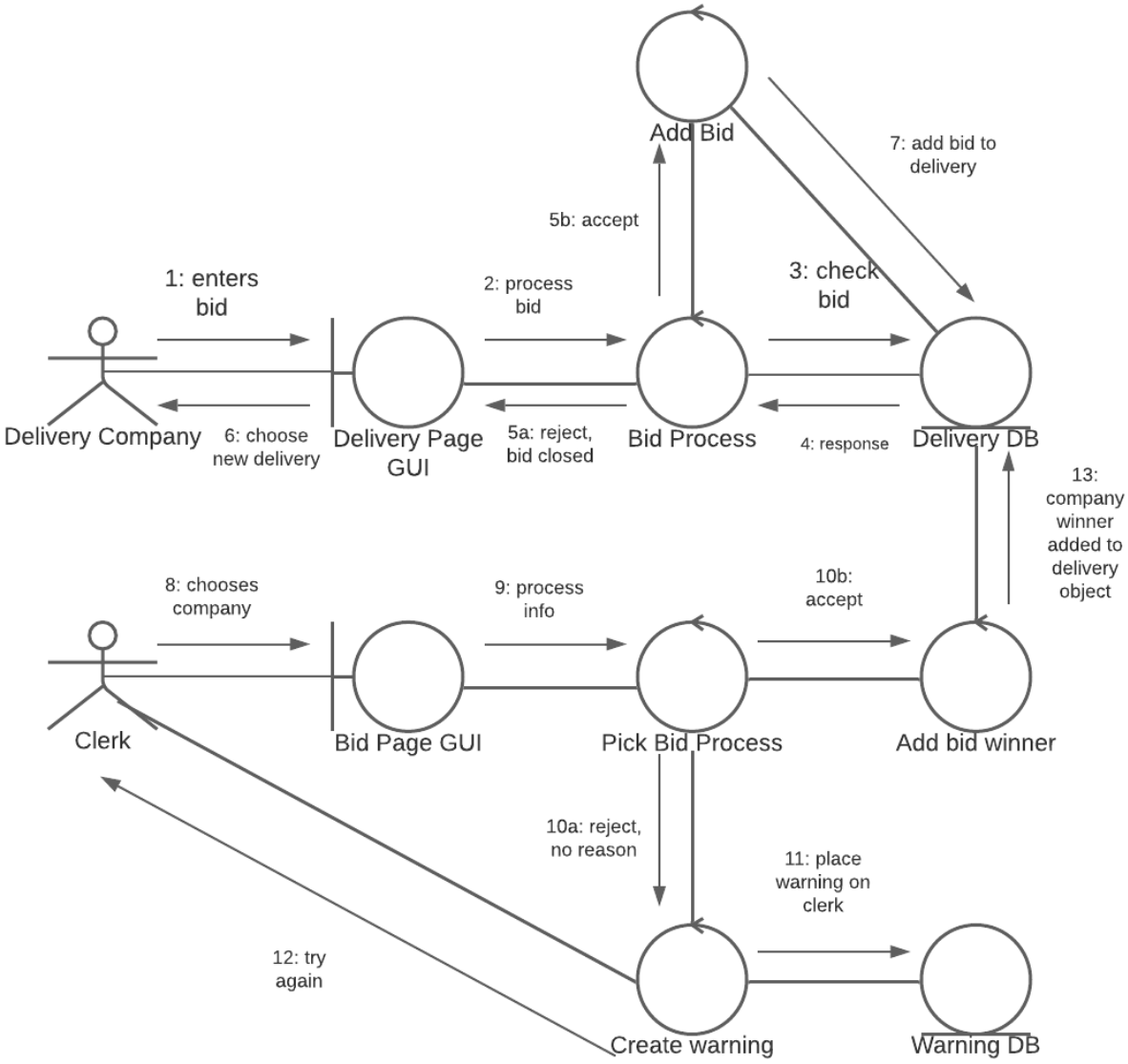
7. Delivery companies (privileged user) can bid on a delivery and store clerk decides the winner

Under Normal Scenarios:

A delivery company can view deliveries in the delivery system. They chose a delivery and bid on it. Then another delivery company bids on the same delivery. Once there are two bids, the store clerk choses the lowest bidding price. The company with the lowest bid gets to deliver that order. If the store clerk choses another bid which is not the lowest, they provide a good reason as to why they did so.

Under Exceptional Scenarios:

A delivery company tries to bid a delivery which has been closed, hopefully once a bid has completed they don't see it, however, if not they will be prompted with a message saying the bid is closed. If a store clerk does not provide sufficient reason as to why they did not choose the lowest bid, they are given a warning by the system and shown to the manager.


Add Bid
7: add bid to delivery
5b: accept
1: enters bid
2: process bid
3: check bid
Delivery Company
6: choose new delivery
Delivery Page GUI
5a: reject, bid closed
Bid Process
4: response
Delivery DB
13: company winner added to delivery object
8: chooses company
9: process info
10b: accept
Clerk
Bid Page GUI
Pick Bid Process
Add bid winner
10a: reject, no reason
11: place warning on clerk
12: try again
Create warning
Warning DB

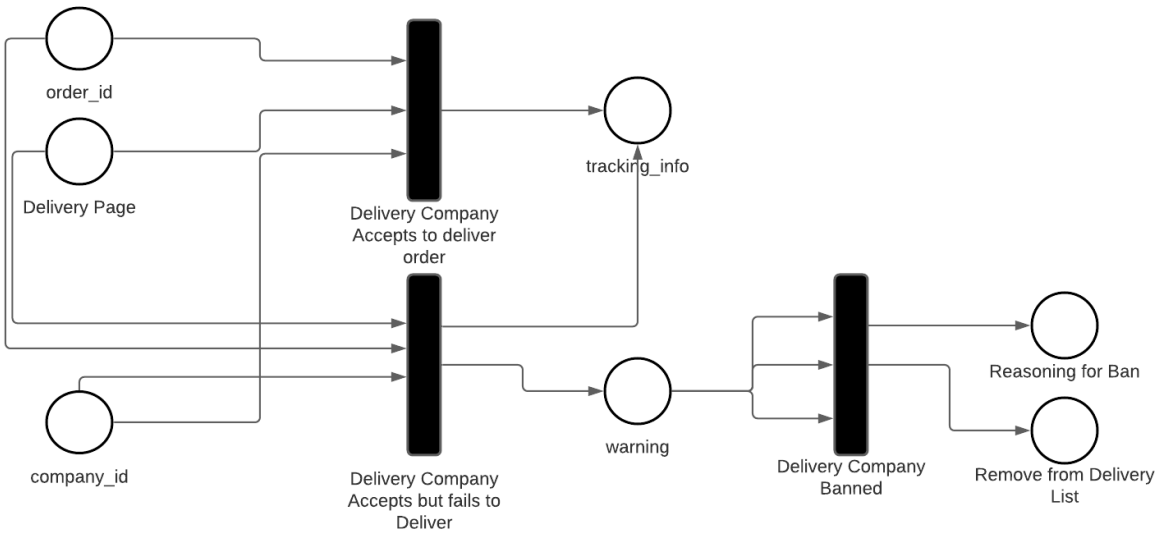
8. A delivery company delivers the purchased item to the registered customer

Under Normal Scenarios:

A delivery company provides the user with a tracking link so that they know when their order will be delivered.

Under Exceptional Scenarios:

A delivery company does not provide a tracking link then the company will be given a warning.



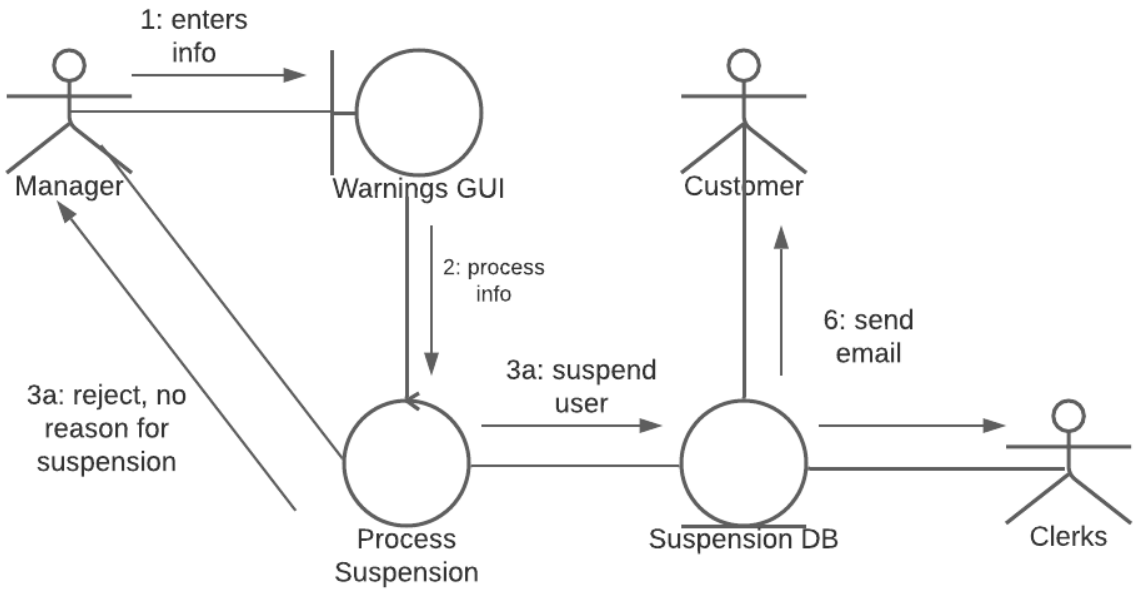
9. A store manager can suspend registered customers or store clerks under justification

Under Normal Scenarios:

A store manager sees that either a registered customer or store clerk has less than 3 warnings on their account. The store managers sees enough justification to suspend them. After being suspended, the user will be warned via email and they must clean up their account as it will be their last chance.

Under Exceptional Scenarios:

A store manager tries to suspend a registered customer or store clerk with 0 warnings. Upon trying to suspend, the system sees that they have 0 warnings and the store manager will be prompted to choose another user to suspend since they have no warnings. If the store manager sees they have less than 3 warnings and suspends them without justification, they will be blocked and prompted to input a valid reason.



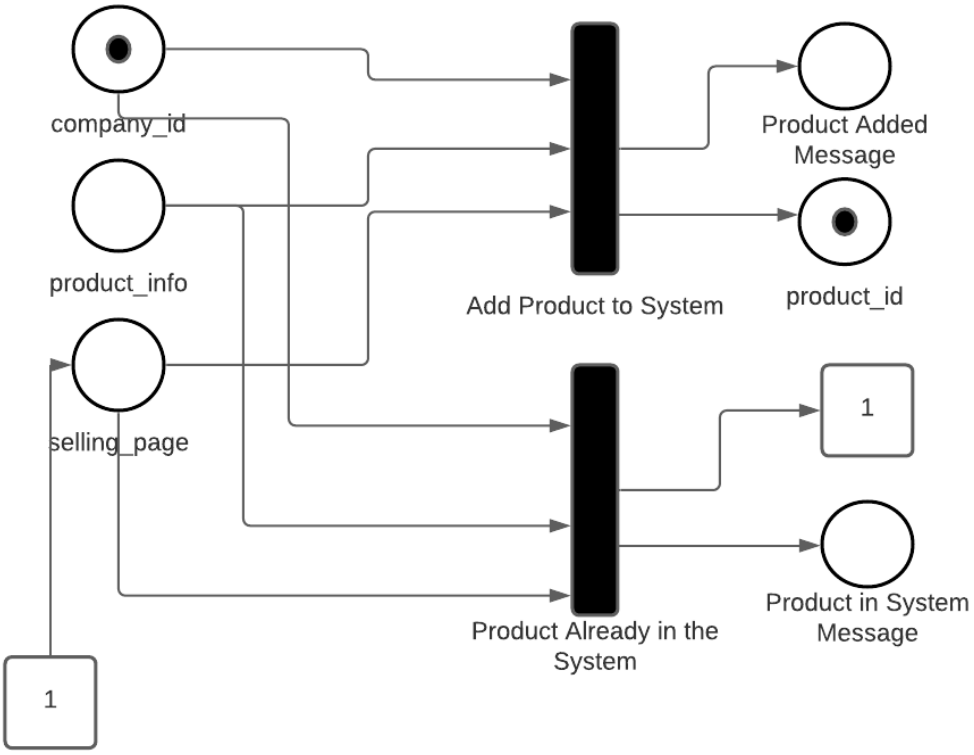
10. A computer part company can sell items on the store

Under Normal Scenarios:

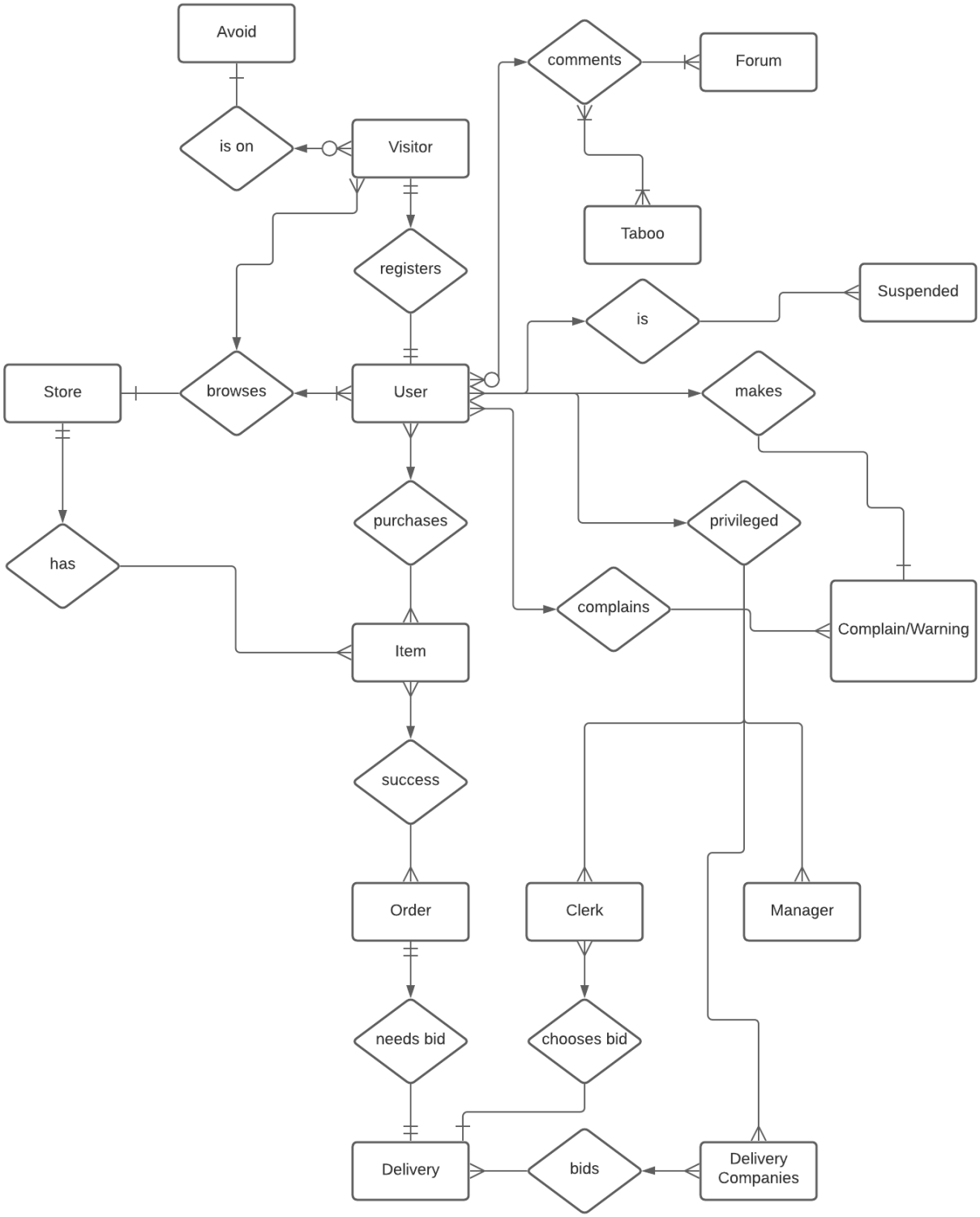
A computer part company can contact the system and put their own products in the database to be sold.

Under Exceptional Scenarios:

If the product they are trying to put in the system is already there, they will be blocked.


company_id
product_info
selling_page
1
Add Product to System
Product Added Message
product_id
Product Already in the System
1
Product in System Message

3. E-R Diagram of System



4. Detailed Design - Input/Output & Main Functionalities

Register Function:

Input: email, password, name, address
System checks to see if email in the database
If the email is already in database
    Output: System will tell user the email is already in use
    Output: Notify the user of the email that someone attempted to register an account
Else
    Output: Information will be added to the database
    Output: The user will be promoted to the Login Screen (Login Function)

Login Function:

Input: email and password
System checks to see if email is in database (Also checks to see if the user is a part company or a delivery company)
If the email and the entered password match what's in the database
    Output: The User is logged into the system having access to all the users data
Else
    Output: The system will tell the user the email or password is incorrect

Buying Function:

Input: user_id, product_id
System first checks if the product is in stock
If in stock
    Adds to cart
Else
    Tells user it is out of stock
System proceeds to checkout where it will confirm the address, shipping method, and form of payment with the user
System will then place the order
Output: User will receive a receipt and shipping info and their wallet will be updated if it was used as the form of payment
Output: the count on the number of stock items will also be updated.

Selling Function: (Only available to Part Companies)

Input: Part Companies will choose what type of part they are selling and depending on what they select they will be asked additional questions about the product
The product will then be posted on the system
If someone purchases the item
    Output: The company will be notified about what they the person ordered, how much they ordered, and the total amount of money they spent
    Output: The funds will be added to the companies wallet

Delivery Functions (Only available to Delivery Companies):

BidOnDelivery:
Input: order_id
For each delivery company in delivery subsystem:
    Enter their bid for delivering the items
Bids will be sent to the store clerk
Store clerk chooses winning bid
    If the chosen bid is not the lowest value, the store clerk must justify
    Else generate warning, lowest bid chosen
Output: id of winning delivery company

GetTrackingInfo:
Input: OrderId
Print estimated delivery date, origin of delivery, current location of delivery
Output: None

Complaining Function:
Input: user_id, order_id (to complain about an item) or user_id (to complain about another user)
Add entered complaint to list of complaints
Output: complaint_id

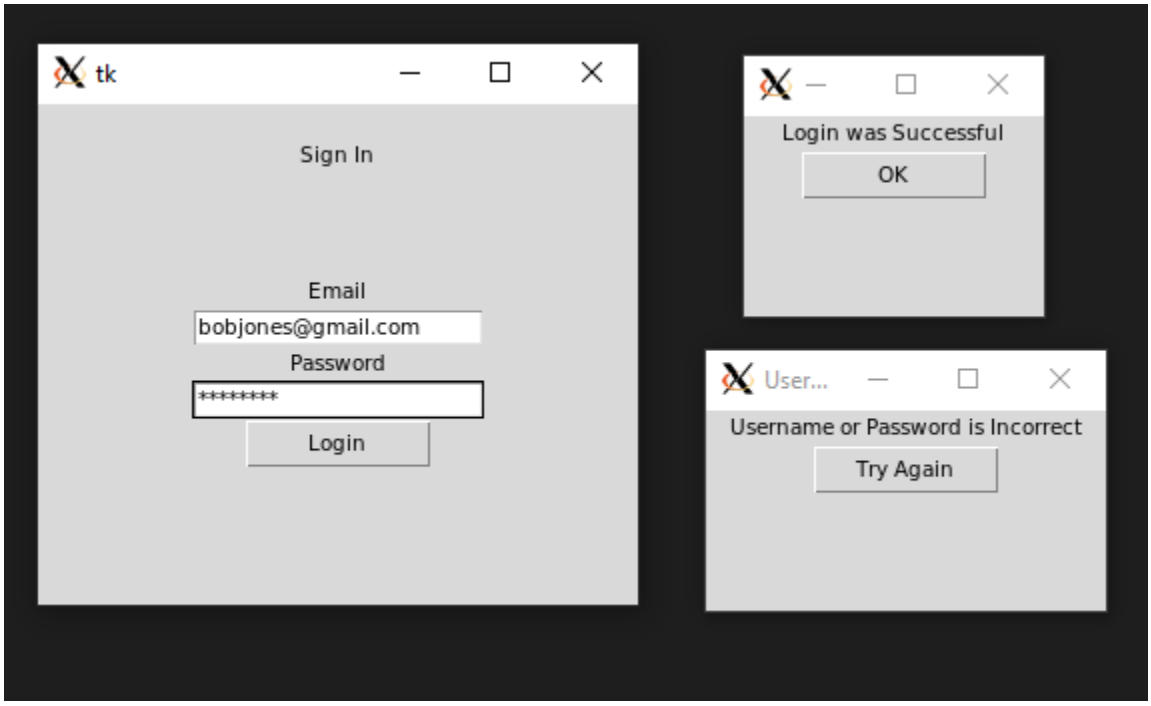
Comment Function:
Input: user_id
Display entered comment to the interface in comments section
Output: comment_id

Suspend User/Delivery Company Function: (Only available to the store manager)
Input: user_id or delivery_company_id
Sends email to user or delivery company informing that they have been suspended
Add user or delivery company to the avoid list
Output: none

Generate Warning Function:
Input: Id of user to give warning
Increment the # of warnings the user currently has
If number of warnings >= 3, add user to the avoid list
Output: none

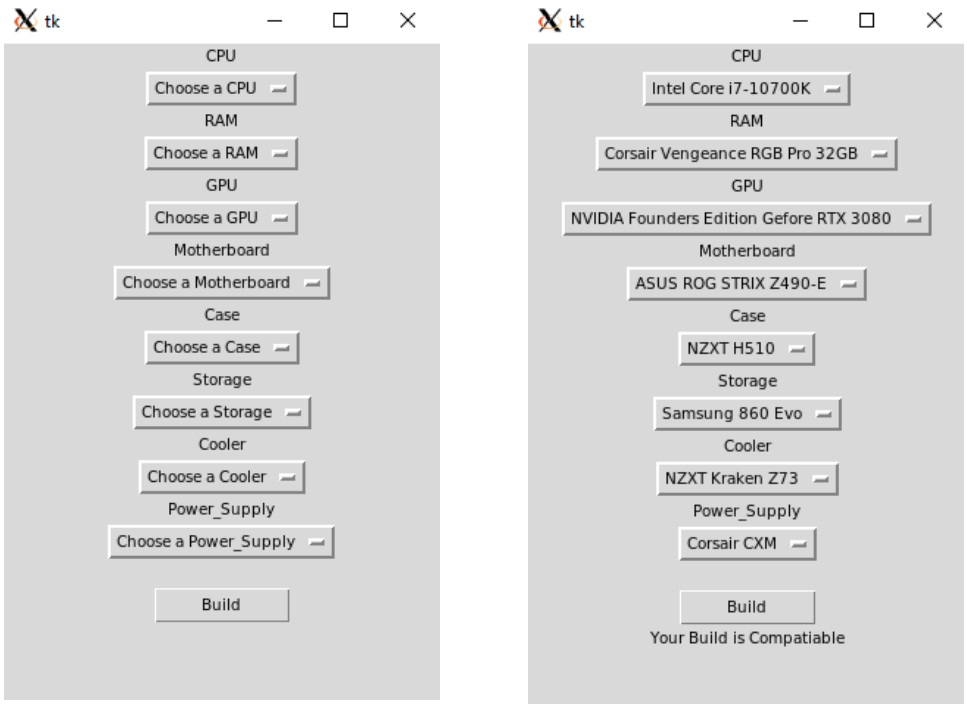
5. System Screens

Login Screen Screenshots

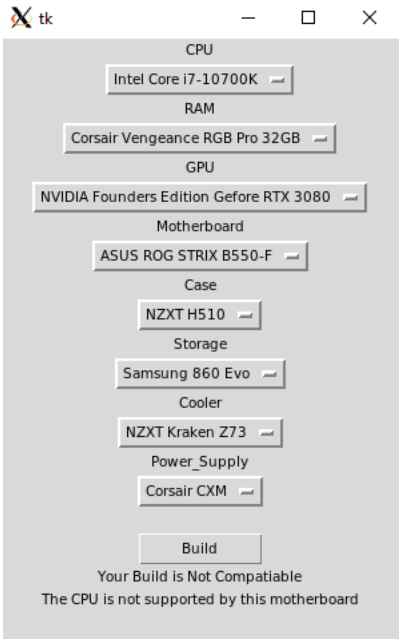


The Login Screen is what all users will first see when launching the application. It is the most important page due to the fact that it is doing more than just seeing if you are a registered customer in the database. The page will ask for email and password, if the email and password entered matches the ones in the database the user will be greeted with a screen that says login was successful. If the email and password don't match then the user will be greeted with a message that says Username or Password is Incorrect and you can try again by clicking the button. With that being done the system also has obtained key information that will be used within the program. First it grabs a unique id assigned to each user when creating an account. This id will help locate information such as what the user has bought, where and when the user complained about a certain product or service, how much account balance the user has in their account, etc.

5.1 Build Your Own PC Feature Prototype



One of our special features is the Build Your Own function which will allow users to create their own pc build. The main problem when building a PC is knowing if a certain part will be compatible with the rest of the build. This function does the work for the user. It checks and sees if every component will be compatible with the rest. For example in the screenshot above it shows that the parts that I have selected all work together however let's say we were to change the motherboard to something that only supports AM4 sockets. The message below will show up in this situation.



This function is only a prototype. This function will be able to give more details on the specification of each part and will be able to show suggested components for the build as well.

6. Minutes of Group Meetings & Concerns

Meeting Dates and Discussions	
March 13, 2021	● Discussion of each group member's roles in the project ● Assignment of features to implement
March 27, 2021	● Worked on Phase Report 1 ● Developed use-case diagram for the system ● Discussed tools to be used to implement the system ● Went over requirements of the system
April 10, 2021	● Finished the LogIn and Registration process for all the different types of users ● Discussed what we wanted each home page for each specific user to look like
April 17, 2021	● Built a prototype of the Build Your Own PC feature of the computer store ● Implemented working method to purchase items and sell items ● Discussed how to implement the complaint system
April 27, 2021	● Worked on Phase Report 2 ● Finalized all use cases of the system ● Defined all main functionalities of the system ● Worked on the developing the graphic user interface of the store

7. Address of GitHub Repository

- https://github.com/SakibAmin/CSC_322_Project