

California State University Fullerton

CPSC 254



Object Oriented Software Design

Use Case Model

for the

Tax Shopping Calculator

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Project Detail

A. Purpose:

The purpose of this application is to calculate the grand total of a transaction including tax. This would include the objects in a transaction and figuring which items does tax apply. To elaborate, grocery items do not have tax applied to them but General Merchandise does. Furthermore, the percent of tax will depend on the location or city since different cities have different tax rates.

B. Background

This Idea was created based on the experience of being a cashier at a retail store. A common scenario that is seen is people asking why the total comes out to a different amount than listed on the tag and forget that tax is also included. For those who know, they often question the sales tax if its correct. Oftentimes these calculations are done by hand to demonstrate that the amount is correct and accurate. Another dilemma is that customers often underestimate the total thinking that they have enough but afterwards they realize they don't. This causes some time to be wasted since they often have to go through all they items and choose what to leave. This causes some headache especially since there are other customers waiting. Some have less patience than others. With this idea, it would save time on the register due to seeing if they have sufficient funds or not before reaching the cashier. They won't be in a rush and under pressure to choose what to leave, they can budget correctly and save them from a headache.

C. Case Tools

a. Draw.io

- i. We are using Draw.io because it is simple, easy to use and accessible for everyone. It has a wide selection of figures and diagrams to be able to do our design.

D. GUI

a. Qt

- i. We decide to use Qt because of its simplicity to use
- ii. Open-source

E. High Level Language

a. C++

- i. C++ is a language we are all familiar with since it was a language that was used in the beginning of our college programming careers. Additionally, Qt is a C++ application so it makes sense to use it.

F. Communication with Group

a. Discord

- i. We are using discord because it is the application that we all have and are familiar with. Its functions include messaging, sharing files and even having virtual meetings where we can share our screen and have group discussions.

G. Contribution to the Code Base

a. Github

- i. All our code is going to be stored in Github. It will keep track our progress, who contributed, keep version controls.

H. Documentation

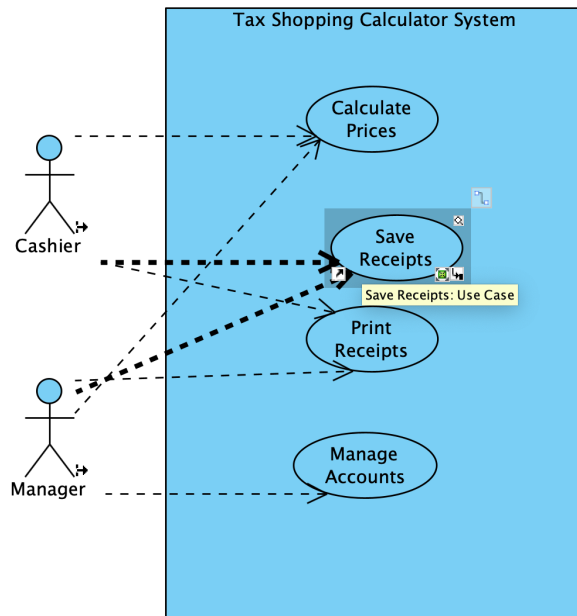
a. Outline

- i. This document will contain all the project information such as details, features, roles and other vital details about the project
- ii. Design
 1. The designs which are found in this document are done through Draw.io
 2. It shows all of our design and if there are any changes or improvements to it

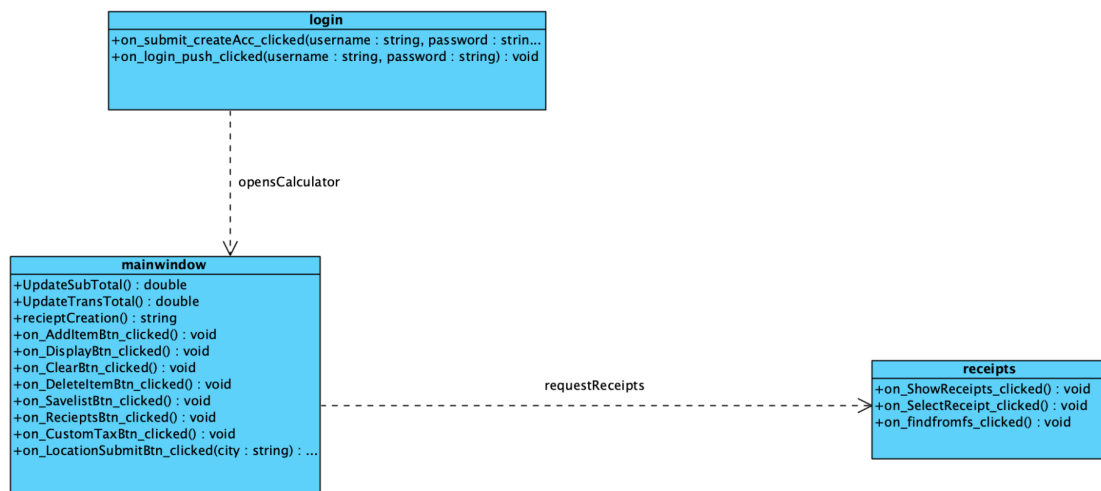
Feature List

| Feature Title | Feature Description | Responsible Engineer | Draft Due Date | Final Due Date |
|---------------------------|--|----------------------|-------------------|-------------------|
| Login/Create Account Page | The user logs into their account with existing credentials. If they don't have the account, the user can create an account | Kenneth Carbonell | November 15, 2022 | November 27, 2022 |
| Calculator Page | The user enters location to determine sales tax rate, and adds items to receive a total of how much their transaction is going to be. The user can delete items, clear their list and save their current transaction | Andy Vera | November 15, 2022 | November 27, 2022 |
| Receipts Page | The user selects a receipt from the saved ones and views it. The user selects the receipt locally or manually | Devin Tran | November 15, 2022 | November 27, 2022 |

Use Case Diagram

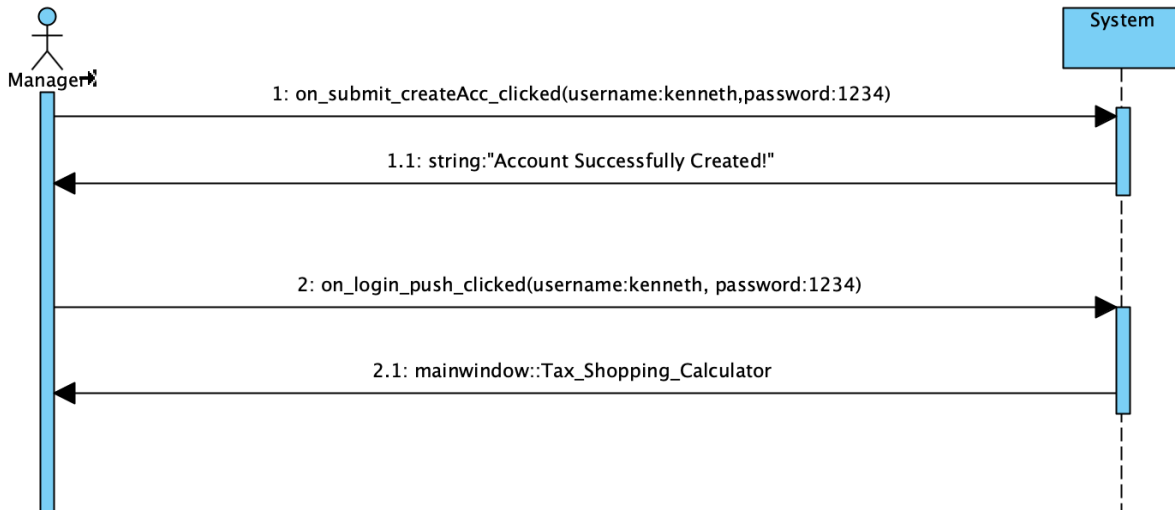


Class Design Model



System Sequence Diagram

Login



Shopping Calculator

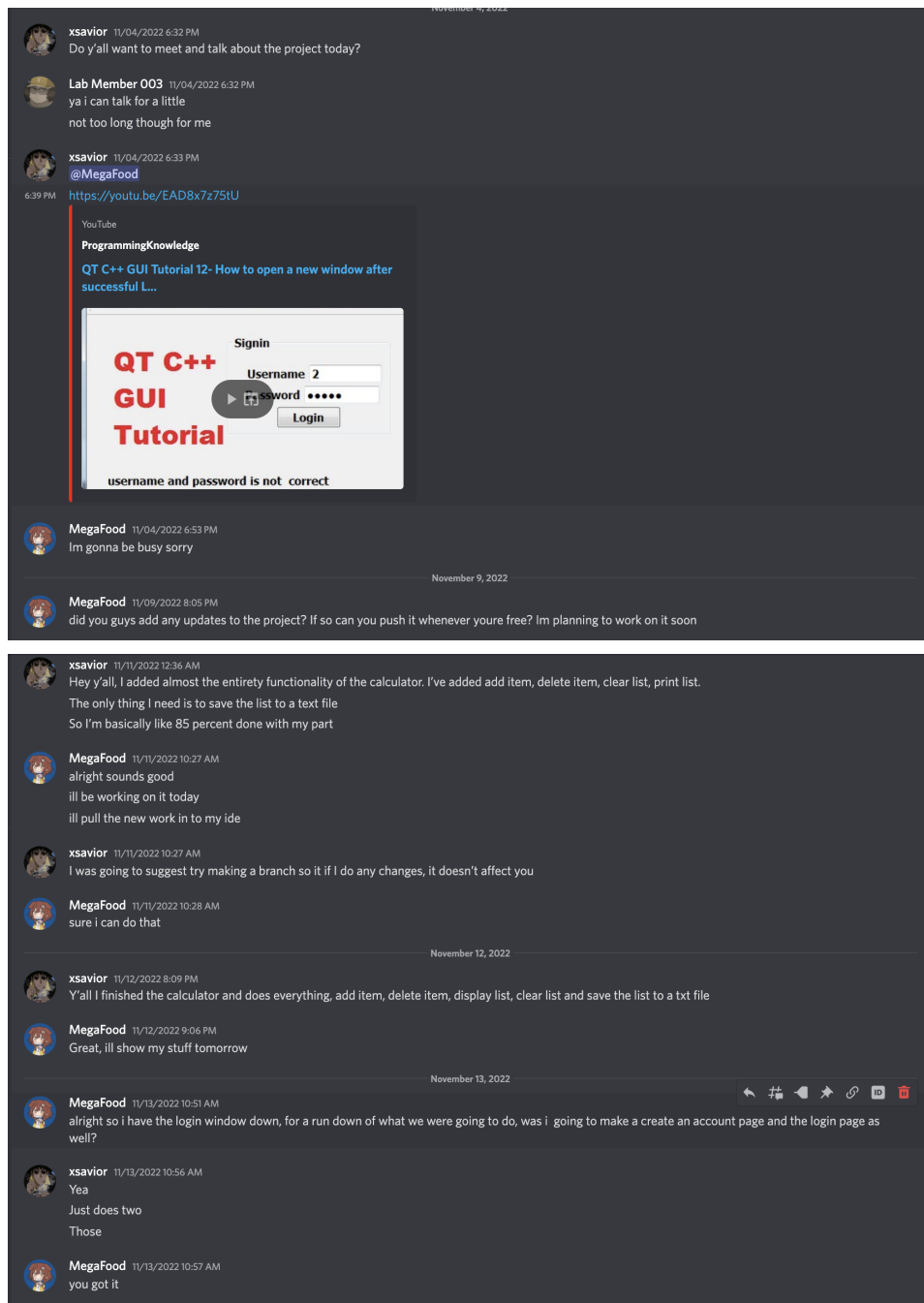



Receipt





Effective Communication Logs


The following are screenshots of our group's communication throughout the lifetime of this project. For context and clarification, we used Discord as our way to communicate with each other. Thus, aliases were used instead of our real names in which “xsavior” is Andy Vera, “Megafood” is Kenneth Carbonell and “Lab Member 003” is Devin Tran. Not only was Discord used for sending messages to each other but as well to live chat.





 **Lab Member 003** 11/23/2022 12:54 PM
if u guys are free today ima be in the discord to work on the project
might need some help if you guys are available


 **xsavior** 11/23/2022 1:14 PM
I'll be on around 5 if you need any help


 **Lab Member 003** 11/23/2022 1:14 PM
k


 **xsavior** 11/23/2022 4:43 PM
How's it going?


 **Lab Member 003** 11/23/2022 4:43 PM
going kinda good
i figured out how to bring up a menu to load files
within the receipt class


 **xsavior** 11/23/2022 4:44 PM
Nice
So you're able to select a file?


 **Lab Member 003** 11/23/2022 4:44 PM
ya but i need to figure out how to display it


 **xsavior** 11/23/2022 4:46 PM
It's similar to my display function (edited)
To read from a file is similar to the Save function from calculator

 **Lab Member 003** 11/23/2022 4:48 PM
hmm ok ill take a look at that
ty

 **xsavior** 11/23/2022 4:52 PM
What did you use to select a file?
Combo box?

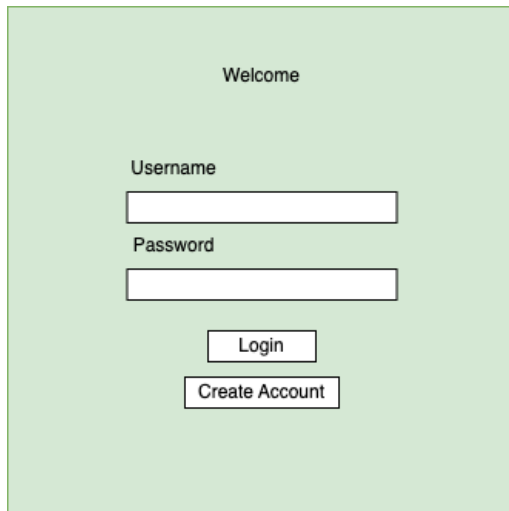
 **xsavior** 11/23/2022 5:04 PM
are you able to hop on a call?

 **Lab Member 003** 11/23/2022 5:04 PM
ya soonish
in like 10 min

 **xsavior** 11/23/2022 5:04 PM
kk

GUI Designs

Login Page



>Welcome

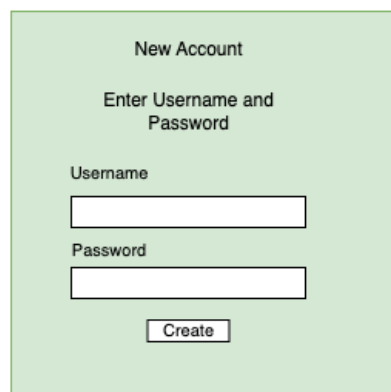
Username

Password

Login

Create Account

This is a login page design. It features a light green background. At the top, the word "Welcome" is centered. Below it, the label "Username" is followed by a white text input field. Underneath, the label "Password" is followed by a white password input field. At the bottom, there are two buttons: "Login" and "Create Account".



New Account

Enter Username and Password

Username

Password

Create

This is a "New Account" page design. It features a light green background. At the top, the text "New Account" is centered. Below it, the instruction "Enter Username and Password" is centered. Underneath, the label "Username" is followed by a white text input field. Below that, the label "Password" is followed by a white password input field. At the bottom, there is a single button labeled "Create".

Calculator Page

Tax Shopping
Calculator

Enter Location To Set Tax Rate

Submit

Tax Rate is:

Item Name

Type of Item

Price

Add Item

Delete Item

Display List

Clear List

Receipt Page


Previous
Receipts

No Receipts


Refresh



Select

Proof of Code Contribution


 prototype



Commits on Dec 4, 2022

Added a Presentation Powerpoint about our Project
 AndyVera committed 2 days ago


 a66a293 



Commits on Nov 30, 2022


Fixed Diagrams in Documentation
 AndyVera committed 6 days ago



 eb36767 

Commits on Nov 29, 2022


Fixing Documentation
 AndyVera committed 7 days ago



 44b7212 


Added all the necessary documentation
 AndyVera committed 7 days ago



 466e226 


Commits on Nov 27, 2022



added find functionality in receipts
 trandevin1 committed 9 days ago


 602fe91 



Added 10 different cities to choose from and fixed an issue where it ...
 AndyVera committed 9 days ago


 0e02c5f 



Fixed the naming of the receipts to the Date and Time of saved
 AndyVera committed 9 days ago

 b0eddd5 


Added the functionality where a custome tax rate can be used
 AndyVera committed 9 days ago



 31b8908 


Fixed recipet layout, calculation issues and other
 AndyVera committed 9 days ago



 1a6e482 

Commits on Nov 23, 2022

Fixed Login Error
 AndyVera committed 13 days ago

 74dc1f5 

Prototype reciepts page
 AndyVera committed 13 days ago

 2999858 

Commits on Nov 21, 2022

Made little changes to calculator ui
 AndyVera committed 15 days ago

 4a51744 

Added a third ui which is inteded for the receipts page
 AndyVera committed 15 days ago

 618d447 

Added needed header file
 AndyVera committed 15 days ago

 e7e4622 

Commits on Nov 13, 2022

test
 kennethcarbonell committed 23 days ago

 faefe1b 

Commits on Nov 12, 2022

Testing Features Out
 AndyVera committed 25 days ago

 71d5514 

Made little adjustments
 AndyVera committed 25 days ago

 c9ae988 

Commits on Nov 11, 2022

Added the Save Transaction feature which saves current transaction as...
 AndyVera committed 25 days ago

 7aba874 

Removed unused variables
 AndyVera committed 26 days ago

 b3b3db2 

Added the Delete Item feature which looks for a given item in list an...
 AndyVera committed 26 days ago

 9b98cc8 