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Research Article #1.

https://www.softwareadvice.com/resources/what-is-a-point-of-sale-sy[illegible]/ (1)
The article explains what a Point-of-Sale system and lists its components out such as having a monitor/tablet, cash register, EFTPOS, and barcode scanner. If I want to develop a functioning POS system these components will need to be taken into consideration. The article lists down important feature sets that are needed by Point-of-Sale systems such as being able to do inventory management, process payments and customer management. It also points out the physical components of a POS system that I should I accommodate for my system such as a monitor/computer, barcode scanner, cash register, credit card reader/EFTPOS Machine, receipt printer and cash drawer.

Research Article #2.

https://usabilitygeek.com/user-experience-barriers-pos-systems/
This article provides important information for designing my user interface and experience of my POS system. According to the author of this article, the key aspect I should focus on when designing my software is reducing the average time of a transaction, as providing fast and good customer service should be the main priority, as ultimately the transaction is between the cashier and customer itself. A new piece of information I will need to take into consideration during the design process of my software is that the focus should be cutting down the time of each transaction

Research Article #3.

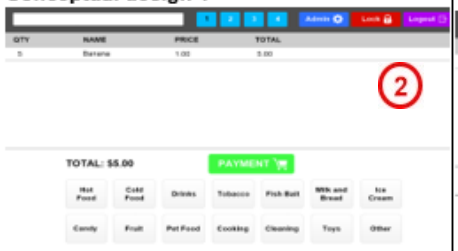
https://medium.com/uxjournal/the-design-principles-in-the-pos-system-pos-design-guide-part-2-57d1bcb30ac0
The article provides important information for designing the user experience of a POS system. According to this article, an important aspect to consider when designing the interface is the trade-off between an aesthetically pleasing and an ergonomic and functional design. Also, that updates to the user interface/experience when it has been used for a decent amount of time may provide a challenge to the user, as they must overcome their muscle memory of the aspects of the previous design.

Further Analysis of Research

After talking to my client and reading the articles I had these specifications

- complete a transaction securely, quickly, and efficiently.
- inventory management, process payments and give receipts.
- process and record transactions from EFTPOS machines.
- generate sales reports and refund transactions.
- switch between orders through the interface
- be easy to read with no unnecessary buttons.

Conceptual design 1



This is the first iteration of the main layout for the POS system. The main goal of this concept is to establish key aesthetic elements that will be shared with other layouts. I wanted to go with modern as the previous system had a more archaic design. The elements of layout such as button placement is still a work in progress. All conceptual designs must be socially feasible, in the sense that the designs must not contain any culturally insensitive or offensive materials such as symbols and phrases as the software could be used by people from varying cultural backgrounds. (2)

Conceptual design 2

After receiving feedback from my teacher, I have made some adjustments to the main layout in this design. There is now a line below the payment button and total which separates itself from the bottom and top half of the design as it was symmetrical before. The buttons on the bottom half are now centered and there are more of them to accommodate the amount of item categories. It seems easier to navigate now. (6) (2)

Feedback (10)

My client gave me feedback based on the conceptual designs. She said that she liked the aesthetic of the concept designs as they were "clean" compared to the current software in use. She requested that the design featured more similarities to the current system in use because it looks small when you look at the screen. She also wanted things such as a coloured payment buttons and a way to add items. For specifications, she said the software should have the ability to refund transactions and give recipts. (9)

Development 1 (4)

This is the first iteration of the main layout of the point-of-sale system. The main difference is the payment button along with a receipt and sales log button which are relegated to a pane on the right-hand side. A bright coloured numpad has been added to make manually inputting numbers easier on a touchscreen Windows device. The menu/pop up is added to show up when you click one of the item category buttons at the main layout. From here the user can add an item to the order by tapping/clicking on the buttons. These changes are the result of client feedback requesting that it look like the current POS system in use. The dimensions of the layouts are now 1024 x 768 which is the resolution of the current machines. (3) (6) (8)

Feedback (5) (10)

The client was pleased with the changes to the main layout, as it shares more similarities with the current system in use. She said that the bright buttons were easy to read but a little too bright. For specifications, the client said that she would like to have the ability to change the login passcode of the software or another form of account modification through the user interface.

Exemplar for internal assessment resource Technology for Achievement Standard 91610

Student 2: High Merit
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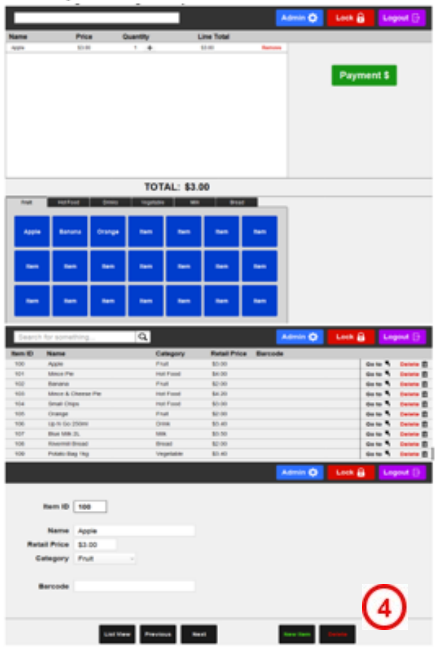
Development 2

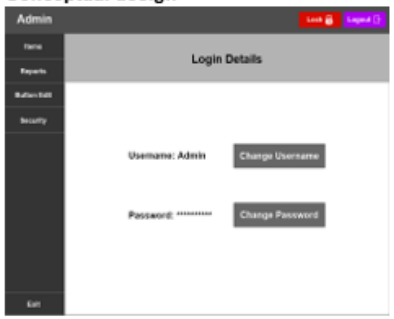


The final iteration of the program allows the user to easily process transactions from the main layout, this design has also revamped the category buttons to be not such bright colours. Instead of using pop-over buttons tabs are now used for selecting a category of items in the main layout, this change was made as during modelling it was determined that the pop over style buttons were not adequate. The ability to search and delete items from the inventory has been added. Users will now be able to navigate through all layouts with buttons.

Feedback

The client was happy with the blue colours and wanted further security. A way to validate transactions, the ability to split payments into cash or EFTPOS, display change given.

Conceptual design



This is a conceptual design for the layout for changing the security details. It only allows the user to change their username and password which are used to login into the software.

Feedback

My teacher suggested it should be a two-step process to change the login details as it makes it more secure.

Refined design

The final iteration of the program adds a lock screen accessible from any layout, the ability to change the login username and password and the ability log out/exit from any layout, without having to close the application externally.

Testing and Feedback

To evaluate if the program is fit for purpose, it was tested by allowing the client and other users of the current point of sale system. The tests involved the users' completing objectives in the program such as navigating through menus and layouts, adding items to orders, processing orders, and adding new items to the inventory. The purpose of these tests was to gather feedback from users to determine if the program is fit for purpose and criticism to improve it. All testers will not be named in this document and will remain anonymous for privacy reasons.

Task	Client	User 1	User 2
Login	✅	✅	✅
Add items to invoice	✅	✅	✅
Change the quantity of an item	✅	✅	✅
Remove items from an invoice	✅	✅	✅
Process an invoice	✅	✅	✅
Spilt payment between EFTPOS and Cash	✅	✅	✅
Add item to inventory	✅	✅	✅
Delete item in inventory	✅	✅	✅
Exit the application	✅	✅	✅

Feedback	Proposed Change	Notes
The purpose of some layouts in the concept is not clear enough	Adding text to the layouts that signify their purpose (e.g., sales log layout has "Sales Log" text)	This will be added in a future iteration of the program, as it does help users identify what the purpose of layouts are without being confused.
There is no easy way to return to the main invoice layout when on the sales log button	Adding a button that goes to the main invoice layout in the sales log layout	This will be added in the future in a future iteration program, as it solves the navigation issue of going to the sales log without having a convenient way to return to the menu.
The admin portal layout has too much empty space	Adding miscellaneous things such as the current time and date or a welcome message.	This proposed change is added but may not necessarily be implemented in future version of the program as it is a miscellaneous change despite my agreement that the portal has too white space as well.

From the feedback and test results I received from the testers including the client themselves, I have made some changes already to some of the layouts of the design, examples being a button that allows a user to return to the main invoice layout front the sales log layout. Text has also been added to all layouts which signify their purpose to make it less confusing for new users.

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