InstaShop

System Design Document

COMP 195 | Senior Project
University of the Pacific
Professor Canniff

https://github.com/Fazil-Jahangir/InstaShop
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Summary of Changes

To be completed at the end of the project…

Customer Statement of Requirements

Customer's Statement: Interested in a simple application that should allow shoppers to use their mobile device to checkout items instead of wasting too much time at the cash register. For example: Customer is tired of waiting in long lines at stores so he/she will just pull out his/her phone, scan all the items, check if there's any mistakes, edit if there's any mistakes, checkout via preferred payment option, receive receipt, and finally walk out of the store with paid items.

- Application that contains a scanner
- Different options available such as edit, remove, or add items
- Multiple payment options (paypal, visa, or etc)
- Contains a location where you can check past receipts and etc
- Minimalistic themed (light background with matching colors)

Glossary of Terms

Will update at the end….

Functional Requirements Specification

a. Stakeholder

- Since this is a mobile application, we have two stakeholders - users, and businesses (aka stores)
- Users will use this app to benefit their daily lifestyle.
- Businesses will use this app to provide a convenient and a better shopping experience for their customers.
- For the former, this application can apply to all ages 18 and up because of the payment issues.

b. Actors and Goals

- Anyone that's primarily above 18
- The goal is to provide customers a better shopping experience by letting them pay without waiting in long lines.

c. Use Case

The Customer (User)

- The player is introduced to a menu screen that gives the user two options. The first option is called “Scan” while the second option is called “Exit”. The exit option will simply close the application so the user doesn’t have to close it any other way. The scan option will lead the user to another screen where the user will see a scanner tool (camera with a 80% transparent rectangle box in the middle of the screen with a red horizontal line going through the rectangle). The user will get the memo that they need to start scanning their items. The user will start scanning barcodes of their shopping items. There will be a “done” box in the small bottom right hand corner of the scanner tool so the user can click on it and move onto the next screen. Once the user is done scanning all the items, he/she will click on done and get greeted by another screen. On this next screen, the user will see all the items he/she scanned and the user will have the option to edit the items. Users can either add more items or remove items on the list they see. After

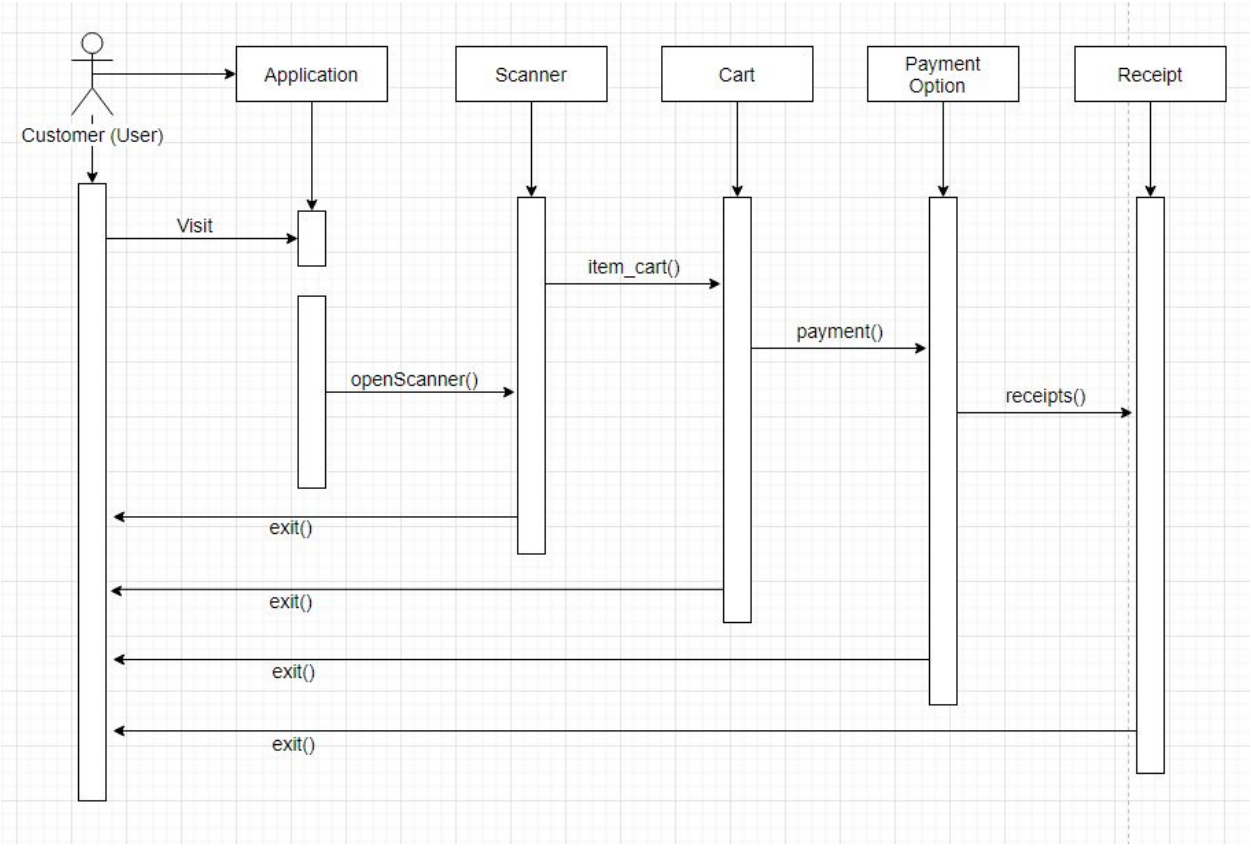
the user is done editing all the items, the user can click on checkout at the very bottom of the application and this will lead to another screen. Here, the user will pay for all the scanned items via paypal, venmo, or other options. Once the user inputs all the details and pays for the item, the application will ask the user if the user wants the receipt emailed to them. If the user clicks “yes” then the user will be prompted another question which will ask the user to input an email address. Once the user inputs the email address then the user will get the receipt emailed to them. If the user clicks “no” then the user will be brought back to the main menu screen.

1. **Menu Screen**:
    a. The main menu screen will contain the logo “InstaShop”. This will be an indicator for the user to know that he/she is in the main menu screen.
    b. The main menu screen will contain two boxes that contain the words: Scan and Exit.
    c. Scan: will lead to another screen.
    d. Exit: will close the application.
    e. The color scheme of this project will be geared towards white/black (the vibe should give a minimalistic feeling).
    f. *These limitations are subject to change during development and testing.*
2. **Scanning Tool Screen:**
    a. The scanning tool screen is pretty simple and straightforward. The screen will access the camera (mainly back-side) and display the general camera look.
    b. In the middle of the camera screen, there will be a rectangular box that will be 90% transparent to let the user know where to place the barcode to scan the items.

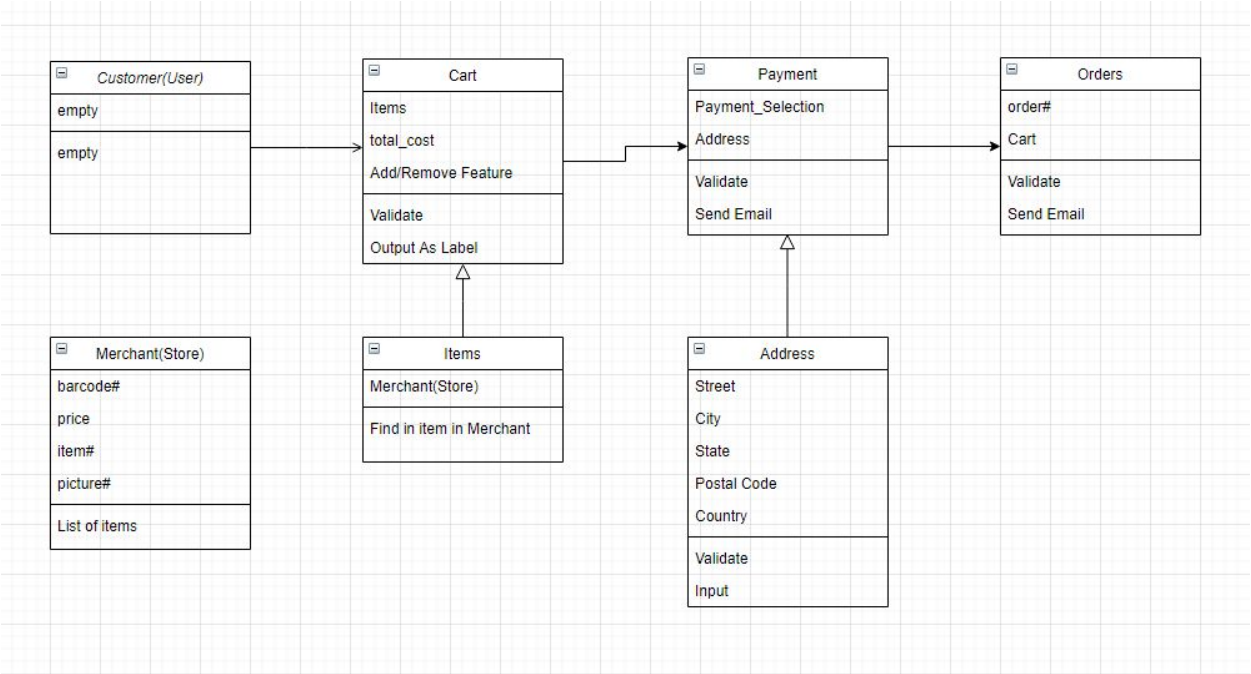
c. The same screen will also contain a “Done” box on the bottom left hand corner to indicate that the user is done with all the scanning.

3. **Edit Screen**:
    a. Here, the user will see a list of all the items that were scanned in a horizontal format.
    b. Next, the user can click on an item and then there will be an option to remove the item in a small red rectangle box on the right hand side.
    c. There will also be another option to increment purchased items. (Mainly designed for when purchasing duplicate items).
    d. After all the items listed, users can scroll all the way to the bottom and there will be a rectangle box which will say “checkout”.
4. **Checkout**:
    a. Here, there will be several payment options listed. Few examples are: Paypal, Venmo, Visa, and etc.
    b. After payment options are entered, the user will get a confirmation that payment is verified.
    c. As for now, payment option will be automatically accepted.
5. **Receipt:**
    a. After the payment option is verified, the user will get a screen which will show all of the purchase history.
    b. The user can select a transaction or a receipt and send it to their email.

Interactions Diagram



Class Diagram and Interface Specification



System Architecture and System Design

Mapping Subsystems to Hardware

As of right now, InstaShop will be entirely local. The only online component of InstaShop will be the feature to email yourself the receipt. The items, barcodes, and everything else will be stored locally as for now.

Network Protocol

InstaShop will require the user to have a network connection (preferably wifi connection or 4g) because the user needs the internet to email the receipt.

Hardware Requirements

Minimal graphics and processing power are required. Hardware is required, however. A functional touchscreen android phone with a camera facility is required!

Operating system version: - Android KitKat 4.4 or greater

Hardware Specification: - WiFi 802.11a/b/g/n, Touch Display, 1GB RAM / 1GB Storage Space, and an embedded camera.

User Interface Design and Implementation

Check the Use Case under “Functional Requirements Specification”

History of Work; Current Status of Implementation

To be completed at the end of the project…

Key Accomplishments:

- To be completed at the end of the project…

Conclusions and Future Work

Fazil:

To be completed at the end of the project…

References

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