

Lab #2

Application Name: the Starbucks App

Use case 1:

- Non-technical: Placing a mobile order for pickup
- Technical features / mechanics: When placing an order online for pickup, the user must first select the store said user will come to for the order, using a dropdown menu. The drop down menu will automatically suggest the nearest number of stores (within a 2 mile radius, lets say). The app will be able to locate the location of the user by allowing the app to gain location through permissions set up during the initial app download. Once the store location has been selected by the user, a menu will appear. The menu will have 4 sections; 1) the General Menu, 2) Featured Items / Promotional Items, 3) Previously Ordered Items, and 4) Favorites. Each of the 4 previously described sections can be viewed one at a time, on a scrollable screen. When the user is in any of the 4 said menus, the items will be subcategorized based on what they are (i.e. food, beverages, merchandise, and "at-home" coffee). When the user wishes to make item selections, they will be able to do so by adding items to a virtual cart. When selecting an item, the user will be prompted to customize their order by selecting a size (from a drop-down menu), and selecting any possible add-ons (via a drop-down menu). The user will be able to add as many items as they wish to purchase to the virtual cart. As items are added to the cart, the grand total due will be automatically calculated. Once the user is satisfied with the selection(s) they have made, they will have a chance to review the final order, where all items will be tallied, along with their respective prices. In addition, the total will factor in the cost of taxes and fees, showing the final grand total. At this point, there will be two buttons, one of which must be pressed, in order to indicate whether the order will be for pickup or dine-in, in order to process the order. Finally, the user will pay for the order, either by inputting their payment credentials, or if credentials have been saved prior, then simply by confirming the purchase.
- Potential errors: If the user does not allow the app to gain access to their location, then the user may not be able to locate the store which is closest / most convenient. This may also cause the app to generate suggestions for stores which are not actually close to the user, and if the user was not paying particularly close attention, they may accidentally place an order at the wrong store. Another error that can occur, is when the user goes to pay, they may not have enough funds on the account. In this instance, the app should prompt the user to either choose a secondary payment method, or to agree to pay the balance when they arrive at the store. Another potential error is that the user might choose some items which the store might not have / may have ran out of. There should be a way to communicate with the user if a substitution needs to be made to the order.

Use case 2:

- Non-technical: Creating a new user account
- Technical features / mechanics: In order to make purchases / use the app to its fullest capacity, the user must create a user account, along with a profile. This account will allow the user to store a payment form, redeem gift cards and vouchers, retail a list of favorite orders, and have a history of previous orders placed. The account also benefits Starbucks by generating user data, which lets them know who is buying what, when, and how often. This rich data tells Starbucks not only which products

are of interest, but to whom. When the user first opens the app, if they are not already logged in, the user will be prompted to click one of two buttons: 1) Join now, or 2) Sign in. If this is the first time using the app, the user will click Join now. This will take the user to a new screen, where a form will be generated to fill out (see below). Once all fields are filled out correctly, the user will click: "Join Now" and the account will have been created. (Screenshots of the Personal & Security Info form below*)

- Personal info:
 - First name:_____ // will allow the user to input a string of characters
 - Last name:_____ // will allow the user to input a string of characters
 - Security:
 - Email:_____ /* will allow the user to input a string of characters for which the ending must be a valid email postfix */
 - Password:_____ // will allow the user to input a string of characters
 - Underneath the above required fields, there will also be several pre-checked boxes, which the user has the option of leaving checked, or uncheck. The boxes will allow the user to indicate whether they wish to receive promotional emails from Starbucks, whether they accept the Terms of Use, and whether they wish to enable safety features such as Face ID.
- Potential errors: When creating a new account, it is important that the user only create a new account if they do not already have an existing account. For this reason, the app should check an internal database to confirm that the email address that the user is inputting into the form does not already have an existing account tied to it. If there already is an existing account for this user, and the user does not recall their password, the app should have a button / feature in order to retrieve a password, or change the password to a new one. Another error which may occur is that the user might choose a password which is too easy or too short. For this reason, when the user is inputting their password for the first time, the app should create a requirement for that string, such that it has a minimum length (of lets say 6 characters), as well as at least one letter, one number sigit, and one special character symbol. This will ensure that passwords have some form of complexity, in order to protect user account data. Another potential error which can occur is that the user may not input a valid email, or may type their email in incorrectly. In order to ensure that users are inputting a valid email, the string where an email must be typed in should be checked to have a valid email postfix (for example @gmail.com). Additionally, an automated email should be sent out to the email address which the user input, in order to ensure that the user actually has access to this email address, as well as to ensure that the user input the correct address. By making email verification a requirement for using the app, this will ensure that all emails are valid.

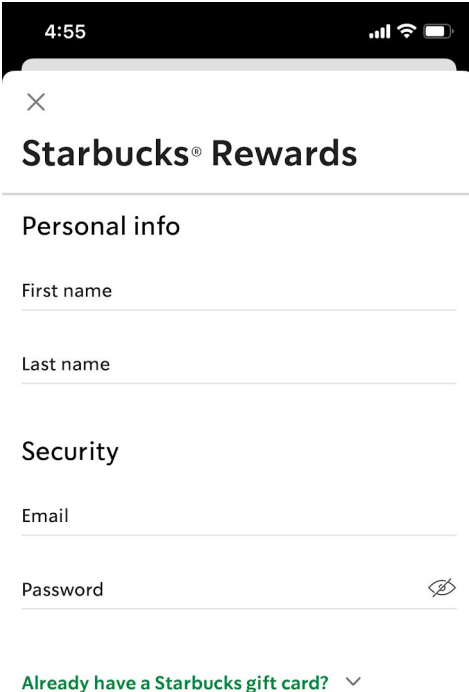
Use case 3:

- Non-technical: Load money onto your account
- Technical features / mechanics: In order to place orders, the user must have a method of paying for the orders through the app. One way to do so would be to input credit card credentials into a form every single time the user wishes to place an order. However, this is fairly slow and not convenient. In order to optimize this process, there should be a way to either store money/purchasing credit directly on the account, or to have a payment method stored for auto-filling at time of purchase. The Starbucks app has both of these functionalities. If a user wishes to load money onto a virtual gift card, this can be done by pressing the '+' button on the top right of the screen. Once the '+' is pressed, a new screen will appear which allows the user to fill out a payment form with their credit card credentials. A card number is required, an expiration date for that card, as well as a card security code. Below that, there are also

two secondary payment options, which can be clicked on; 1) Add a gift card, or 2) Connect with PayPal. If the user does not wish to use the above form to input credit/debit card credentials into a form, they can either connect a PayPal account or a Gift Card. When connecting a Gift Card, the user will be prompted to a new screen, which requires the user to enter the Starbucks Card number into one field, and a Security Code into the second field. Alternatively, the user can use the smart phone's camera to scan a picture of the Gift Card and then auto-fill the two aforementioned fields. If the Gift Card number and security code match an existing account holder's balance, then the balance on the card would be automatically updated to reflect the user's balance on their account. If no such match exists then the user would have to continue trying, or exit the screen. Lastly, if the user wanted to use PayPal in order to connect their PayPal account as the payment method directly, they could click the PayPal button, which will take them to a third party screen. This screen will ask the user for their PayPal username and password, which are to be entered as space-free strings. Once the user is in their Paypal account they will have the ability to approve connecting their PayPal account to their Starbucks account, and then whenever the user makes purchases, the form of payment will be PayPal and will automatically withdraw money from PayPal.

- Potential errors: One potential error is that the user might be inputting Gift Card data which is not linked to a real Gift Card. The App must have a way of checking to make sure that the Gift Card is actually valid, that the number of the card is connected to the Security code, and that there is actually valid funds on said card. Another potential error is that the user may put in a valid credit / debit card number, but when they go to make purchases, their credit or debit card may be out of funds. The App must have a way of ensuring there is enough money on the account, or that the payment has been genuinely processed prior to putting the order through and starting to create the actual order. Another error which can occur is that the user might have a typo when entering their credit or debit card credentials. As there is a standardized number of digits for every type of card (for example all Master Cards have 16 digits), the app can check when inputting strings of digits for the card, that the length of the string is exact.

(*images are connected to Use Case 2)



The image shows a mobile app screen for Starbucks Rewards registration. At the top, the status bar shows the time 4:55 and signal/battery icons. Below the status bar is a close button (X) and the title "Starbucks® Rewards". The form is divided into two sections: "Personal info" and "Security". Under "Personal info", there are input fields for "First name" and "Last name". Under "Security", there are input fields for "Email" and "Password". The "Password" field has an eye icon for toggling visibility. At the bottom, there is a link "Already have a Starbucks gift card?" with a dropdown arrow.

Preferences & Terms

- ☒ Yes, I'd like email from Starbucks
Know about product offers, announcements and initiatives.
 - ☒ I'd like to sign in faster
Use Face ID and iCloud Keychain to sign in, authorize purchases, reloads, and more.
 - ☐ I accept the Terms of Use
By joining, I agree to Starbucks® Rewards Terms, Starbucks Card Terms, and the Application Terms.
- [Rewards Terms](#)
- [Card Terms](#)
- [Application Terms](#)

Join now