

Design Check-in

CSE 440 | Augustina Liu, Bill Phung, Celeste Cayetano, Ethan Cui

Tasks

1. Monitoring transaction activity for suspicious behavior such as first-time new location login, new device login, and unexpected transactions that may not be performed by the account owner

Johnson recently retired as a librarian at the University of Washington. Because of his job, Johnson needed to interact with information systems on a daily basis and, thus, became an early adopter of the internet. Johnson kept good security habits from his job and, as an attempt to prevent his bank account from being compromised, Johnson logs into his bank account every day and browses his account history session to check if there is any suspicious behavior. One time he recognized a transaction he couldn't recall. He clicked into the transaction detail and realized this purchase was performed on a device he never used and a location he did not recently visit. Therefore, he identified this as an account compromise. He then contacted the bank to freeze his account to prevent any further losses. He wouldn't have been able to protect his account if he had not consistently monitored his account.

2. Generating strong and secure passwords and update them

Peter is a 70-year-old retired office worker who uses the internet to keep up with old friends, watch videos, and to stay up to date with the news, all of which require an account to access. Peter uses the same password for each account; an infrequently used phrase. The last time he updated his password was when he first created those accounts. Even though he knows that his actions lead to poor account security, he chooses not to change his ways due to the convenience of having one password and his lack of creativity. He wants a way to easily create different strong passwords to further secure his data. He also has a hard time remembering to update his passwords and is not sure how often he should in order to protect his accounts.

3. Recovering Password

Lisa is a 65 years old cashier in the local grocery store. She mainly uses computers for checking out products for her customers. She doesn't use the computer very often and only knows some basic tasks. She used to only have a few accounts to manage, including emails and two bank accounts. Recently, in order to better communicate with her friends, she registered an account on Facebook. However, since she does not check her Facebook account frequently, she forgot her password. Since she is not familiar with the overall process, it took her 1 hour to recover the password.

4. Advice on what to do when an account is compromised

Steve is a 68-year-old teacher. He uses the same password for every one of his accounts out of convenience. One day, he notices that there have been suspicious purchases from his bank account. It turns out his bank account has been compromised and because he frequently reuses the same password, he has fear for his other accounts. Lo and behold, some of his social media accounts have also been compromised. He looks up what to do and for each and every service they offer different steps on how to move forward. He is lost in this wave of information.

5. Keeping track of account information for different accounts

Joe is a 64-year-old retired school teacher. He loves to spend time with his grandchildren and drives uber and lyft in his free time. He thinks it's a fun, low-stress way to earn money on the side, and he even finds it easy to use. His only trouble is that he is always forgetting his login credentials and finds the account recovery process slow and frustrating. Now, he just uses the same username and password for all of his accounts, even though he knows that that isn't necessarily a secure thing to do. He wishes that he could find a way to store his passwords in a simple, easily accessible, and secure way so that he wouldn't have to worry about his accounts being hacked, especially ones his accounts that have financial information and information about his family members.

6. Being motivated to be secure

Jeff is a 62-year-old retired car mechanic. Most of his interactions with computers happened when he needed to pull up customer and vehicle information from the computer in the car shop. He does not manage his personal accounts and passwords even though he knows this practice is not secure. A while ago, Jeff heard his friend's account was hacked and she suffered a major financial loss. Knowing his account could also be facing similar risks, especially considering he did not take much action in protecting his account, Jeff wants to be more secure but is discouraged by all the complexity it would add to his everyday life. He struggles to find a balance between security and simplicity, and wonders if he should just deal with the repercussions of being hacked if it ever comes to that.

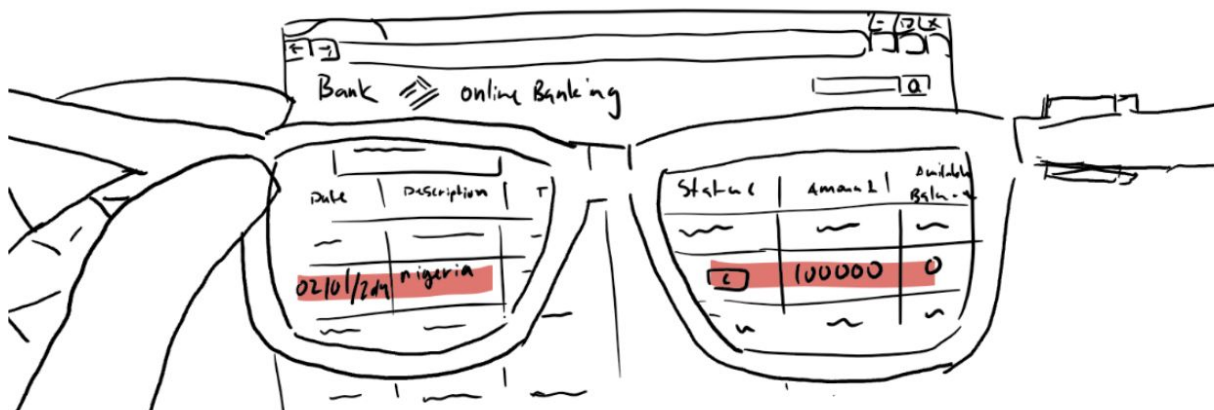
Design 1: Smart Glasses

High-level Description: The smart glasses design are wearable glasses that use augmented reality to display useful information when interacting with computers and other devices. It is lightweight and un-intrusive as many seniors wear glasses already. It is simple and intuitive; its interface can set its display based on prescriptions for glasses in order to complement their vision. It features minimal interactions that only display on whitespace so as not to impair vision, and can give helpful information when interacting with online accounts.



Sketch for Design 1: How senior use the smart glass

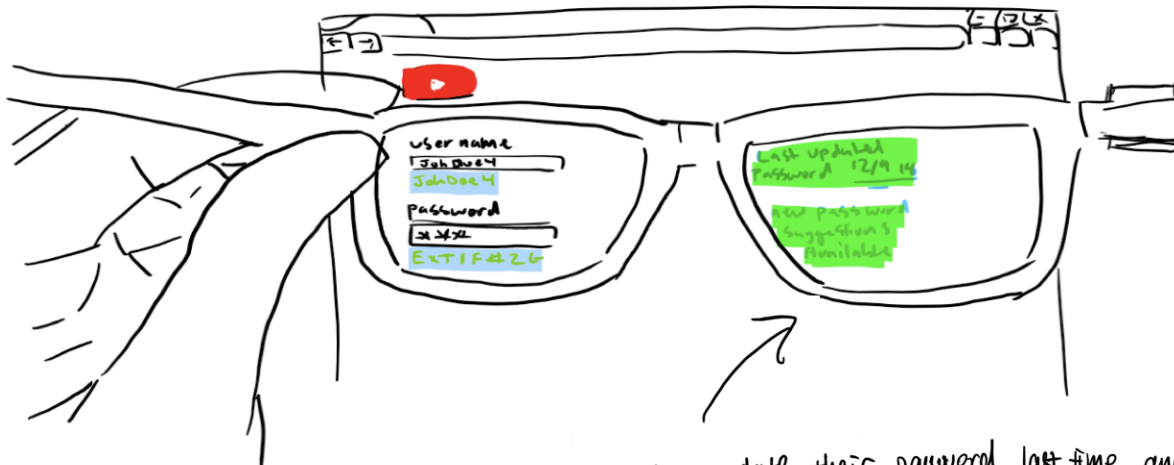
Tasks:



↑
highlight suspicious transaction activity

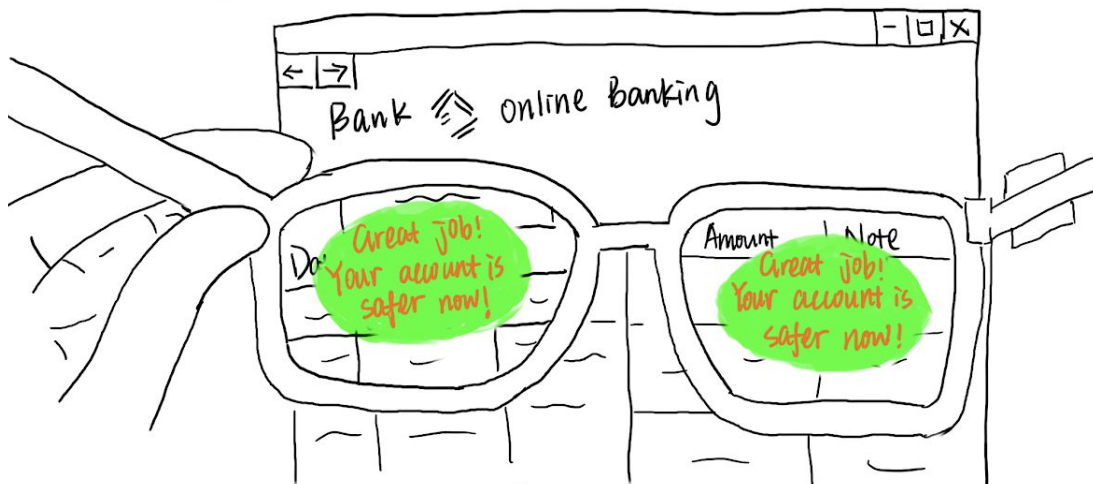
Sketch for Design 1: Task 1

seniors can see information about account such as username and passwords through the glass



seniors can see when they update their password last time and new password suggested that can be used to update via the glass

Sketch for Design 1: Task 2 & Task 5



words to encourage seniors and motivate them to use the glass continuously

Sketch for Design 1: Task 6

Task 1: When looking at bank accounts, smart glasses will actively scan for and highlight unusual activity and risky transactions. Users can then evaluate said warnings to see whether or not an account has potentially been compromised or whether they should continue to that website.

Task 2: Will keep track of when a password has been last updated. Will display that information when user first logs in using augmented reality. When the user has first made an account will offer strong and secure password suggestions.

Task 5: Will store and save user information such as account numbers, passwords, and security questions to various accounts. Will display passwords when logging in for easy access.

Task 6: To motivate seniors to be secure, these glasses will display encouraging words when they make secure decisions in order to build up their confidence in interacting with technology.

Design 2: Smart Notebooks

High-level Description: The smart notebook design is a type of Internet of Things where seniors can have a more secure way to write down account information including account numbers, passwords, and security questions etc., on their notebooks as what they usually do. The notebook will use the Optical Character Recognition to store the information seniors write down and store that information on the cloud. Then, that information is automatically stored on personal devices and can be used to login without manually typing in the login credentials. In order to assure that all personal information is safely stored even if the notebook is lost or stolen, the smart notebook uses facial recognition to display personal information to customers with authorizations. There is a small ink screen at the back to mimic the texture of the paper, which is used to display notifications to notify users about suspicious activity and new passwords generated for users to update their passwords.

Tasks:



Sketch for Design 2: Smart Notebook

Task 1: Since the notebook contains account information, it will use the account information to log in seniors' account every day and monitor their account activity.

Task 2: Will generate new passwords that are strong and easy for seniors to remember.

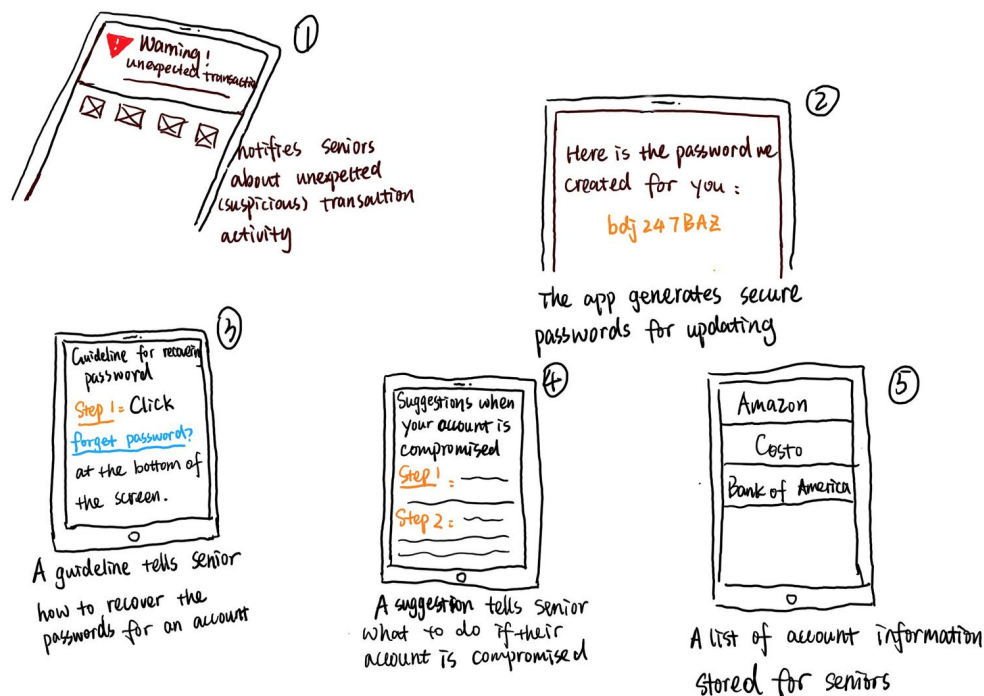
Task 5: Seniors will write their account information such as passwords down on the notebook. The notebook will recognize that information via OCR technique and store all account information in the cloud to keep track of that information for seniors.

Task 6: The simplicity of the smart notebook will motivate seniors to be secure for their accounts. When writing down the passwords, seniors do not need to do extra works. What they only need to do is writing down their information as usual.

Design 3: Online Account Security App

High-level Description: The online account security check app is a mobile phone application that helps seniors protect the security of their online accounts by keeping track of account information, focusing on recovering an account when things go wrong. The app will be designed to allow seniors to check their account information if they need, monitor suspicious activity on their online accounts, give notifications when companies have had a recent data breach or when accounts have potentially suspicious login, posting, or spending activity, and find next steps to protect their accounts, such as updating passwords or disabling.

Tasks:



Sketch for Design 3: Online Account Security App

Task 1: Will automatically check online accounts for locations and devices of login, posting, and transaction activity and notify seniors if there is an activity that doesn't match their location or known devices.

Task 2: Will generate strong and secure passwords for seniors to update their passwords for accounts. Seniors could enter some keywords they prefer to be used in passwords as the reference. The system will generate passwords for updates based on seniors' preferences.

Task 3: Will guide seniors through the process of password recovery if they are unable to access their account with simple, easy to follow steps.

Task 4: Will give seniors steps to protect and recover an account if they believe their account is at risk or has been compromised.

Task 5: Will store and save seniors information such as account numbers, passwords, and security questions to various accounts. Will display passwords when logging in if seniors need for easy access.