

Assignment M5 (Summer 2021)

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Abstract—You are watching a movie or a web series on a video over-the-top (OTT) platform (e.g. Netflix). You like the content and then a thought comes of a friend, family member or a co-worker who you know would like it as well. You think of immediately recommending the content to them. Or, picture this: you have finished an engrossing web series, and now you are skimming through dozens of pages of the content catalog, yet could not decide on what to watch next. We again knock our friends, family, or co-workers' doors for recommendations, who, in all probability, are sailing in the same boat. For all these scenarios, there can be an interface developed, easily accessible within the streaming platform, which can be used to provide recommendations to our friends, family, or co-workers and to see what they have recommended for us.

1 QUALITATIVE EVALUATION - WIREFRAME PROTOTYPE

Qualitative evaluation was performed on the wireframe prototype using a survey. The wireframe prototype which was used for the survey can be referred to from "Appendix 4.1: Wireframe prototype". A link to the prototypes was also included in the survey for reference. A 13 question survey was hosted on Georgia Tech's PeerSurvey platform. The survey link was shared with friends, family members, and a few co-workers. In addition, the survey link was also shared with fellow course students. All of the questions posted were objective with the exception of one (which required a free form text response to gather additional feedback). No change in questions was made once the survey went online. 25 responses were received (asynchronously) in about 5 days' time, after which the survey was closed. All participants were remote and took the survey online and therefore were in a similar condition or environment. As indicated during planning, the survey questions were peer-reviewed before the survey was made active to ensure there are no leading questions.

One thing I would change is to include some kind of an identifier question so that I can divide the responses by category. The survey was completely any-

mous this time and I am not sure that out of the 25 responses received, how many were from friends and how many were from co-workers or fellow students. An additional question to indicate this would have helped.

1.1 Raw results

Below are the raw results of the survey based on responses from 25 participants:

1. Should *Recommendations* be a separate menu item on top? Yes (88%) No (12%)
2. Should *Recommendations* be shown under a separate section on the home page (similar to Popular, New Releases)? Yes (84%) No (16%)
3. Does the proposed interface follow the Netflix existing content and layout pattern? Yes (84%) No (16%)
4. Is the icon to block future recommendations from a friend easily visible?
Yes (56%) No (44%)
5. Is the block icon easy to locate? Yes (52%) No (48%)
6. If not, where should the block icon be placed?
 - (a) Along with other icons (Play, Add, Delete) (44%)
 - (b) In its current place (next to recommender's name) (56%)
7. Is the icon to remove recommendation from the list (Trash icon) discoverable?
Yes (100%) No (0%)
8. Do you agree that the trash icon used remove a recommendation from the list conveys its intent clearly?
 - (a) Strongly Agree (32%)
 - (b) Agree (60%)
 - (c) Neutral (4%)
 - (d) Disagree (4%)
 - (e) Strongly Disagree (0%)
9. Should the content tile show who has recommended the content?
Yes (96%) No (4%)
10. Would you agree it helps to see the icon of the platform through which you and your friend are related (Facebook in this case)?
 - (a) Strongly Agree (28%)
 - (b) Agree (52%)
 - (c) Neutral (12%)
 - (d) Disagree (8%)
 - (e) Strongly Disagree (0%)

11. Once a title from the recommendation is played, what should happen?
 - (a) Title should be removed automatically from the list (56%)
 - (b) Title should stay in the list unless explicitly removed (44%)
12. Once you use the new interface, how likely will you remember the way it works when you use it the next time?
 - (a) Very likely (56%)
 - (b) Likely (44%)
 - (c) Neither likely nor unlikely (0%)
 - (d) Unlikely (0%)
 - (e) Very unlikely (0%)
13. Any other feedback about the proposed interface?

The answers for this optional free-text response question can be referred to from “Appendix 4.2: Survey - Free text response”.

1.2 Analysis

One of the main pieces of feedback received was to use a more suitable icon for blocking a user. The icon currently being used could potentially be misinterpreted with a stop icon, which is commonly used to stop or pause the playing content. A suggestion was made to use a different icon instead which will reflect the intent in a much better way. This would definitely be a positive improvement as the icons used in an interface should not require the user to guess its purpose. Another suggestion was to provide the functionality to view recommendations grouped by the person that recommended them with an option provided in the subheader to block seeing future recommendations by him/her.

A good majority of respondents (>85%) agreed that “Recommendations” should be listed as a separate menu item on top and also that there should be a separate section for it on the home page (similar to Popular, New Releases), where movies that are recommended by friends should get listed. These responses were as per my expectation as this design allows separation of content and avoids cluttering. I was also satisfied with the response where 84% of respondents agreed that the prototype follows Netflix’s existing content and layout pattern. This was particularly important as this was listed as one of the critical requirements to support a consistent user experience and to have a narrow gulf of execution. 100 % of the respondents said that they will likely or very likely remember the way how the interface works when they use it once. This is a good reflection upon the usability and learnability of the interface.

One of the feedback which took me by surprise was the recommendation to remove the title automatically from the list once the content has been played. I was expecting a lesser number of respondents would prefer this option. However, 56% mentioned this as their preferred choice as compared to 44% who mentioned that content should stay in the list unless removed explicitly. I was expecting the former to be a clear winner with at least 75-80 %, however, that could be because of my personal preference between these choices. The overall feedback definitely suggested that I am on the right track baring few suggested improvements to make the interface even better.

Following are the specific changes that would be made based on the responses:

- Replace stop icon with block icon (circle with a horizontal line crossing it) which will be used to block seeing future recommendations from a specific friend.
- The friend's name who has recommended the content would be made clickable. Selecting the name would list only the content recommended by him/her.

2 PREDICTIVE EVALUATION - CARD PROTOTYPE

Predictive evaluation on the card prototype was performed by the means of a cognitive walkthrough. The card prototype which was used for the walkthrough can be referred to from "Appendix 4.3: Card prototype". The goal for the user is to view a content recommendation made by their friend and to either add the recommended content to their viewing list or discard the notification. An additional goal is to block the friend so as not to receive any recommendations from him/her in the future. During the cognitive walkthrough performed, the following describes the tasks in the user flow and the actions taken during each task/step.

1. *Upon receiving a new notification for a recommendation, unlock the phone and see notification details.*

The workflow starts when the user receives a Netflix recommendation notification on the phone. The very first action in this step is to unlock the phone when the notification is received. The screen on the phone will look as shown in "Figure 3 (Appendix 4.3)". This is a standard device interface screen when a notification from any app is received. The prototype follows the same style pattern for Netflix notifications so as to have *consistency*. It is the default behavior of the device not to reveal much information when the phone is locked

due to privacy settings (which can be changed by the user for a specific app). The user has prior knowledge that the phone needs to be unlocked in order to view the notification details. Additionally, the user will perform the predefined set of actions to unlock the phone (by providing either passcode, finger, or face scan depending on the device setup). The user in this case is already aware of what actions are needed to unlock the phone as the phone unlocking process is one of the first set of steps a user performs in order to use the phone for almost anything and everything.

Once the unlocking is successful, the lock icon on the screen changes to unlock icon. This is also the standard design behavior which is both consistent and also provides *feedback* to the user that the action was successful and the phone is now unlocked. Also, when the phone gets unlocked, the user can now see more details on the notification such as which content was recommended and by whom. This is shown in “Figure 4 (Appendix 4.3)”. Here no action by the user is required as all that the user is doing is reading the information displayed on the screen.

2. *User is not interested in viewing the notifications and wants to clear them all.*

When a notification appears on the screen, a cross (X) icon appears on the right side of the screen. This is shown in “Figure 4 (Appendix 4.3)” where X appears to the right of the text “Notification Center”. Using X to indicate the close of a modal/window is a very common practice in the HCI world. The icon’s intent and purpose are clear from its appearance. The icon is also *discoverable* as it appears prominently on the screen. The user, therefore, taps on the icon to clear all notifications.

3. *User is not interested in viewing the Netflix notification and wants to remove this Netflix notification specifically.*

When the user wants to remove the received Netflix notification after seeing who has recommended the content, it can be done by doing a left swipe on the notification and then tapping on “Clear”. This interaction can be referred from “Figure 5 (Appendix 4.3)”. Until a few years back, users would not know what left or right swipe is and its purpose. However, with the evolution of touch screen interfaces, swipe gestures are now used often. Following the principle of *affordances*, similar to how a user knows that the dial is meant to be turned, similarly, the user knows that they need to do a swipe and tap on the interface to take an action. Swiping left on the notification presents two options to the user as shown in “Figure 5 (Appendix 4.3)” - *View* and *Clear*.

The options are *discoverable* as they are the only two actionable pieces of content on the screen at this point. The design and layout of these two options are minimal and *simplistic*. User taps on the *Clear* button. The interface provides immediate *feedback* to the user as the notification is removed from the list.

4. *User wants to take action on the notification and wants to see more options.*

As mentioned in step 3, the user swipes left on the notification and is presented with two options - *View* and *Clear*. The options mentioned are *discoverable* as they appear prominently on the screen. Since this is a touch interface, by the means of *affordances*, the user is aware that the *View* text needs to be tapped on. Upon tapping on *View*, the interface expands the notification and multiple options (icons) are presented to the user. This can be referred from “Figure 6 (Appendix 4.3)”. Here again, the feedback provided by the interface is immediate. There are 5 icons that are presented to the user. The legend for these icons is provided in “Appendix 4.3 - Card prototype”.

The icons presented on the screen are kept *consistent* with the industry standard so that their purpose is communicated clearly to the user. For example, the *Play* icon is to play the movie content. Similarly, the *Trash* icon is to remove the recommendation. The user taps on any of the available icons to perform the action. Depending on which icon is tapped, the interface performs the action and the feedback is provided to the user. For example, when the user taps on the “i” icon, which is for information, the phone’s interface opens the Netflix app and provides more information about the content. This icon’s intent can be left up to interpretation but per the *mapping* principle and the way this icon is used across other applications, it gives a clear intent that there is information upon clicking on the icon.

5. *User wants to block all future recommendations from this user.*

When more options are presented to the user (step 4), one of the icons listed is a big X icon (“Figure 6 - Appendix 4.3”). As this is a touchscreen interface, all these icons presented can be tapped on. Tapping on the big X icon, blocks all future recommendations from the person who has recommended the content. However, based on the feedback received on the wireframe interface, this icon can be confusing with the X icon which is used to close the notification. For *simplicity* and to be *consistent*, this icon in the future design will be replaced by a new block icon (circle with a horizontal line intersecting in the middle). When the user taps on the icon, a confirmation is presented on the screen providing *feedback* to the user that the block action is complete.

3 EVALUATION SUMMARY

Performing qualitative and predictive evaluation of the prototypes has definitely indicated room for improvement to make the prototypes better and provide enriched functionality. One area which definitely will require further research and additional feedback is in creating a profile page that appears when the user clicks on the name of a friend who has recommended content. This area is particularly important to get more information on as it does not exist in the current prototypes. I also would like to have more feedback on the layout of the buttons. The responses received as part of the qualitative analysis did not reflect a clear winner or preference in some of the options I had provided. I will once again suggest using a survey as my needfinding exercise to answer these additional questions. Some of the questions which require more feedback are:

- Where should the block icon be placed? Should it be in its current place or along with other icons?
- Should icons such as Play, Delete appear below the title tile or should they appear on top of the content tile when the user hovers over it?
- Once a title from the recommendation is played, what should happen? Should there be a prompt to remove the content?
- Should there be a separate profile page listing all recommendations by a specific friend?

Based on the evaluations performed, there is definitely a need for making small improvements to the existing prototypes which should be explored in a second iteration through the design life cycle. One of the main complaints is about the interchangeability of the block and stop icons. The prototypes will be altered to use a more suitable icon for the block functionality which clearly communicates its purpose and avoids any confusion. Additionally, depending on the new feedback received, I can decide if the icons (play/delete) should be kept where they are or should be displayed on top of the content tile. This would definitely add more simplicity to the design. Both these require making small alterations to the existing prototype. However, to fulfill the requirement of displaying a separate profile page, we might need to create an additional screen. This screen would be in addition to the screens depicted in the wireframe prototype. It will primarily be used to show all recommendations by a specific friend (when the name is clicked) and will also have a button to block seeing future recommendations.

The feedback received on the prototypes was overall positive in nature. 100 % of the respondents said that they will likely or very likely remember the way how the interface works when they use it once. Baring the few improvements listed above, the prototypes are in a good shape in terms of functionality. These improvements would first be made on the existing prototypes. I would then increase the fidelity of the prototypes so that they can mimic the proposed interface more closely. Also, certain interface behaviors, especially what happens when the user clicks on an icon (Play/Delete) can be depicted in detail. These would be high fidelity, polished wireframes though the interface will still not be functional or ready to interact in real. For the proposed additional screen (additional screen), the designed prototype will not be of high fidelity as this is a new screen and may require some tweaks and changes based on the future evaluations performed. For this, I might go with a verbal or textual prototype. A low-fidelity wireframe is also an option since I already have wireframes for the remaining part of the interface.

Once the above-mentioned changes are made (updates to existing prototype and by increasing their fidelity and new low fidelity prototype for the new proposed screen), I recommend running at least one more round of qualitative and predictive evaluation before moving to a more formal empirical evaluation. Having qualitative feedback will really be important especially since we might end up creating an additional screen that was not part of the evaluations performed and it would be beneficial to understand how the functionality works end to end with the new screen in place. Users might have additional feedback when this new screen comes into the picture. Maybe certain adjustments might be needed in either the existing or the new screens to make the overall flow efficient or more structured. Once complete, we would be in a state to perform a formal empirical evaluation.

4 APPENDICES

4.1 Wireframe prototype

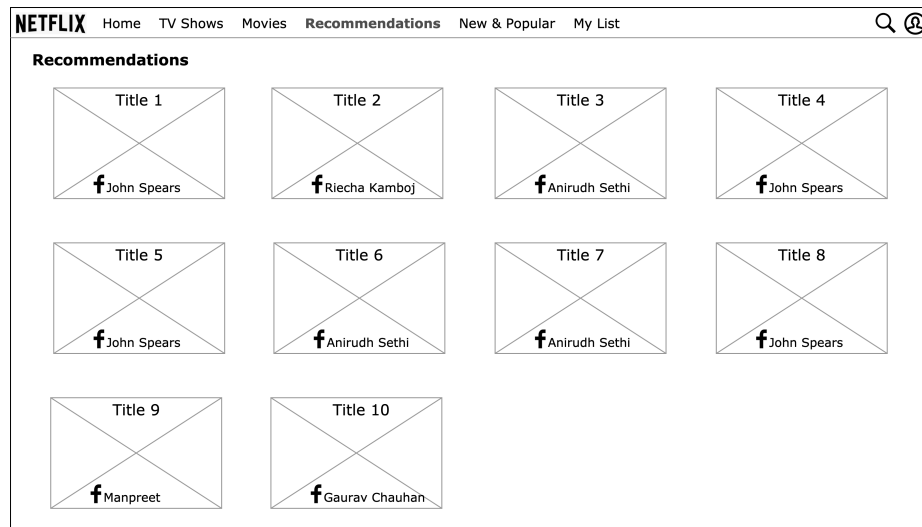


Figure 1—Wireframe - Netflix Recommendations screen

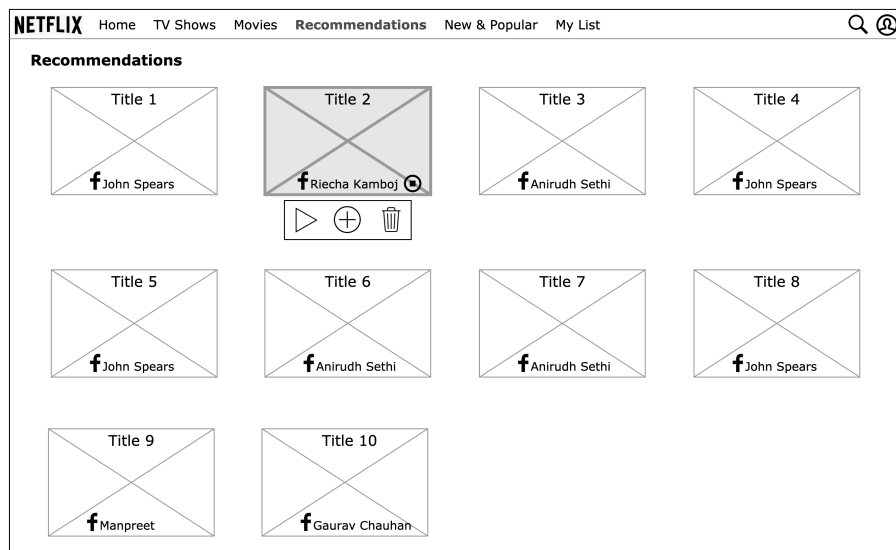


Figure 2—Wireframe - Hover over tile (Title 2)

4.2 Survey - Free text response

- Get rid of the play and block icons. Clicking the preview twice (once for info and twice to play it) should play it. Add an info icon that takes you to the profile of the person who recommended it where you can block them/see all their recommendations
- I have no other feedback for this proposed interface
- The issue with the block icon is not that it is not discoverable, it is pretty visible on the screen. But actually I could not identify it's function on first look. I thought it was stop play button. So, maybe you might need to use some different label or icon for it.
- I would prefer to see recommendations grouped by the person that recommended them, listed as subheadings, and the ability to block comes in at the subheading level. Reason being I trust some people's recommendations more than others. Alternatively, it could learn who I tend to trust and sort accordingly.
- I was confused about the block and trash icon, they seem interchangeable
- You might consider moving the action buttons to be within the tile when the user hovers/selects that tile, instead of a dropdown below. It's a small thing, but one thing I find annoying with those drop down menus is that if I move the mouse too far or miss the button, the menu goes away and I have to redo it again
- Maybe when you're finished watching the app can ask you if it should be removed from the recommendations or not
- For the block icon, I would use a circle with a line through it instead of a square, as that took a while to realize that the icon was for blocking
- Liked the wireframes

4.3 Card prototype

- The starting point of the interaction is when the user receives a notification on their screen and the phone is locked.



Figure 3—Netflix notification on locked screen

- Unlock the phone to see notification details as shown below

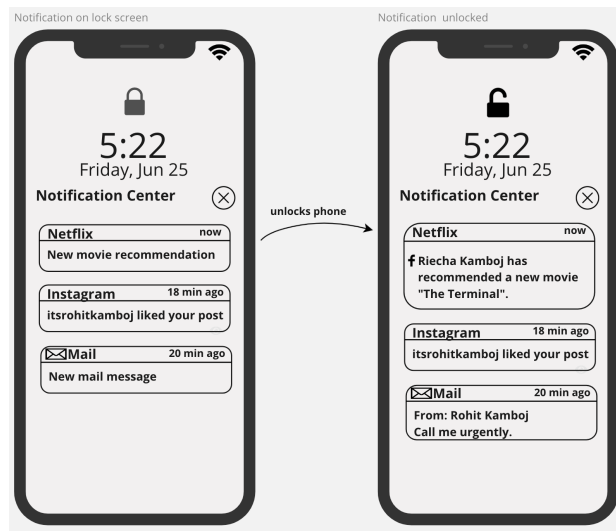


Figure 4—Transformation from locked to unlocked screen

- From the unlocked notification screen, swipe left to remove the notification from the device ("Figure 5"). On swiping left, the user is presented with the option to View or Clear the notification.

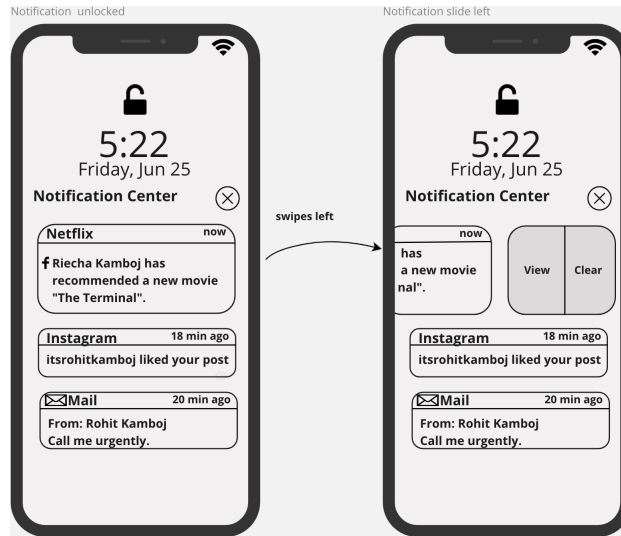


Figure 5—Swipe left on notification

- From the unlocked notification screen, press on the notification which presents the user with the options to take further action ("Figure 6").

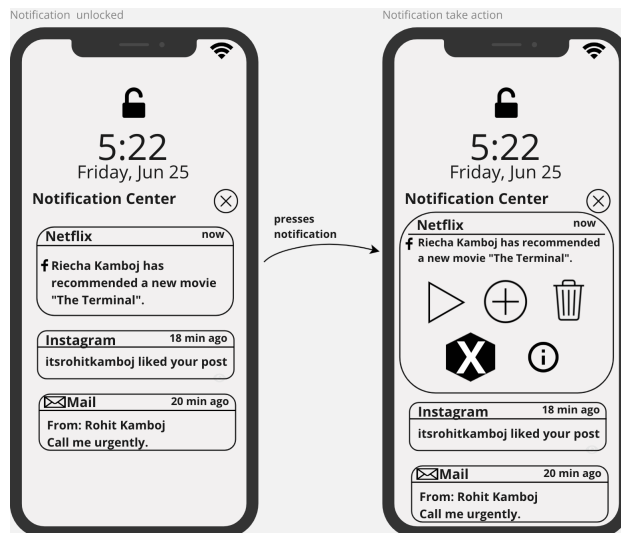


Figure 6—Press the notification on unlocked screen

- Play icon - Open Netflix and play the movie
- + icon - Add the movie to *My List*
- Trash icon - Delete the recommendation
- X icon - Block the user
- i icon - More information about the movie