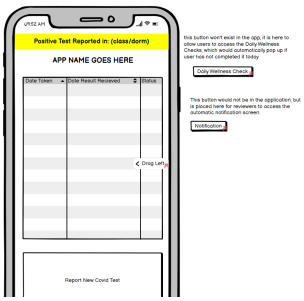
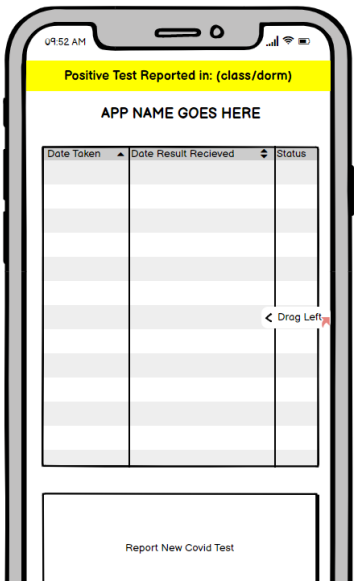
FP5 – Formative Evaluation and Functional Prototype

In this deliverable, you will conduct a formative evaluation of your wireframes without users through cognitive walkthrough and heuristic evaluation. You will report your findings and recommendations. Based on your findings from the evaluations, you will improve your wireframes and submit a functional prototype of your app.

Cognitive Walkthrough

Provide a list of issues identified as a result of the cognitive walkthrough evaluation of your low-fidelity prototypes (i.e., wireframes) by your peers in FLA7. You should summarize their feedback from FLA7 here. Based on the issues identified, provide a list of recommendations to address those as well. A table works best for this purpose, which is why you should fill out the following table (add more rows as needed):

Screenshot	Issue	Recommendations
	Unclear as to how the user will access the daily wellness check	Add button for usage (not really, because it's an auto pop up with a flag check)
N/A, no screen to show	There is no feedback after submitting the daily wellness check that it was submitted successfully	Add feedback screen

	Unclear that user can drag left to access covid data	Add tooltip during first time use explaining this Add some sort of label
N/A don't have screen shot of missing page	The user is unable to access the result of their daily wellness check and the QR code	Add page giving the user result and a QR code that can be scanned by the school
	Once the user knows they can drag left it is unclear what they are dragging left to	Add tooltip on first time use explaining this action Add icon on the homepage representing this page
	"Homepage is not completely fleshed out"	Uncertain, maybe needing the QR code, Daily Wellness Check is meant to be "pop-up". Perhaps, color?

Heuristic Evaluation

As a team, choose **one** of the heuristics sets covered in class. Then conduct a heuristic evaluation of your wireframes from the previous deliverable using that heuristics set. For this evaluation, you should focus on the three main tasks you have identified in previous

deliverables. That said, if you have implemented all five tasks (as per the description of the design challenge), then you can also include them here. In fact, this is a great time start thinking about those two other tasks that you have not yet been explicitly asked to work on (see the next section too).

Each member of your team should conduct their own heuristic evaluation and you should report your consolidated findings here. This will involve you gathering all the evaluations and discussing and aggregating the findings across multiple evaluators. You could present your findings in a table similar to the heuristics template available on Canvas.

Nielsen's 10 Heuristics	Description	Notes
Visibility of system status	The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.	Good overall, but does not include confirmation dialogues that daily wellness check and covid test report were successfully submitted
Match between system and the real world	The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.	Information layout is natural and logical. Uses language appropriate to real world. Gives simple instructions to user.
User control and freedom	Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.	No clear emergency exit. Redo included within relevant action (wellness check). Emergency exit should not be included in daily wellness check to force user to complete.
Consistency and standards	Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.	App is consistent other than need to add consistent access to homepage.
Error prevention	Even better than good error messages is a careful design	Confirmation actions are displayed at all end points.

	which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.	No confirmation of submissions. Wireframes do not include representation of error states such as not inputting a field for a covid test report.
Recognition rather than recall	Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.	User is not required to remember things between parts of application as no parts depend on each other. Application is lacking in instructions for swiping left page.
Flexibility and efficiency of use	Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.	Not applicable as all steps always need to be followed for actions. Can do remember me option for logging in.
Aesthetic and minimalist design	Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.	Application only includes information relevant to the task the user is completing.
Help users recognize, diagnose, and recover from errors	Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.	Wireframes do not include error messages.
Help and documentation	Even though it is better if the system can be used without documentation, it may be necessary to provide help	No documentation included. Tooltips need to be added.

	and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.	

Updated Usage Scenarios

You have now completed one cycle of the user-centered design process, resulting in new recommendations on how to modify your design, which will likely affect how certain tasks are completed on your interface. Therefore, you will need to provide an updated usage scenario description of the user tasks you have been working on. Clearly explain what has changed since the previous Usage Scenario descriptions (from FP3), based on what you learned in the evaluations. If nothing has changed in your usage scenarios (for the previous tasks only), just say so.

As before, you must demonstrate how a user will accomplish each of the tasks with your design. It is important that each task be expressed in the vocabulary of the interface (e.g. “press the ORDER button”, “swipe with two finger to delete”, “say ‘FIND’ to initiate the search”) and be written from the perspective of the user. Instead of using a narrative format (similar to the example we covered in the videos), you can present your usage scenarios in a bulleted list that outlines the tasks and their subtasks. This is similar to what you did in FP3.

Your updated usage scenarios must describe all the **five tasks** and your additional **new task**, as per the description of the design challenge. In the previous deliverables you have already identified three of these tasks. Now it is time to finalize your task list by incorporating all the required tasks into your design.

Logging In:

- The User types in their school username for the app
- The User types in their password
- If User wishes to, user may click “remember me” for faster logging in next time
- The User presses the “login” button
    - If User entered the credentials correctly, the user will be taken to the home screen

- If User entered the credentials incorrectly, the user will be asked to re-enter their credentials

Daily Wellness Check:

- The User opens the application for the first time in a given day and is prompted to complete the daily wellness check.
- The User reads question 1 and presses either the “yes” or “no” button based on what is appropriate.
- The User reads question 2 and presses either the “yes” or “no” button based on what is appropriate.
- The User reviews their answers and selects either “submit” or “start over” based on what is appropriate.
- The User is displayed relevant information based on their responses.
- The User can access the results of their daily wellness check through a button on the homepage and view an associated QR code

Reporting a Covid Test:

- The User presses the “Report New Covid Test” button on the home page
- The User fills out the box for the date the test was taken
- The User fills out the box for when their result results were received
- The User presses the radio button for either “positive” or “negative”
- The User presses the “Test Submission” button
- The User will review their test submission and press either the “submit” button or the “start over” button
- The User will receive relevant information based on the result of their test

Contact Tracing:

- If the User has not already done so, the user will be prompted to give a valid cellular phone number that can be sent notifications when positive test notifications need to be sent to them.
- If the user has not verified their phone number through a text message, a text message asking for phone number verification will be sent to them, and the User will be required to press the link in the message to verify phone number.

- The User will enter whether or not they take classes in person or online on daily basis for when a class has happened
- The User will enter other locations they have visited on campus during the day, noting time period when possible
- The User will be able to enter the dormitory they live in if applicable

Notifications:

- The User will receive a notification if anyone in their residence hall or any of their classes has tested positive for Covid-19
- The User will receive a push notification, text message, and email about any positive tests. They will also see an automatic popup upon opening the app
- The User can set their notification preferences

Viewing the Covid Influence:

- The User uses finger to “swipe” left, revealing a new page Northeastern covid influence statistics (and possible map)
- The User presses “Boston” button to change to Boston Covid Influence stats / map
- The User presses “Massachusetts” button to change to Massachusetts Covid Influence stats
- The User presses “Northeastern” button to change back to Northeastern Covid Influence
- The User uses finger to “swipe” right to exit page

Changes Made: (Changes of Tasks included in previous FP are highlighted)

- Made changes to contact tracing to receive a cellular number from the User and to verify the number from the User.
- Made a change to Daily Wellness Check where the User has an optional task of accessing the Daily Wellness Check through a button and their associated QR code
- Added the other required tasks that were not included explicitly in the previous FP step (logging in, contact tracing, & notifications).

Medium-Fidelity Prototype

Based on your findings and recommendations from the previous sections, you should improve your low-fidelity prototypes and produce medium-fidelity prototypes. Click-through enhanced mockups with more screen/navigation details work great for this deliverable. You should no longer use random placeholder images or text for main tasks. That said, remember **this is not the high-fidelity prototype yet**. Your prototype should be developed in one of the advanced prototyping tools, such as Adobe XD, Figma, Indigo Studio, Axure, etc. (Some of these will be introduced in Week 9.)

We should be able to interact with the prototype to complete the tasks listed above. Your prototype should be a single one, containing all the different screens. Do **not** separate the prototype into multiple ones, with the exception of the notification screen shown to users when somebody else reports testing positive for COVID-19. The idea is that we should be complete all of the tasks by going to the link you provide, which should take us to the homepage of your app. From that screen on, all tasks should be functional, without requiring us to go to another external link. Again, the notification screen is an exception to this.

As you are working on your updated wireframes, think about what UI patterns you can implement. Based on the nature of the tasks, you will need to implement some of the UI patterns we covered (when applicable). For the final prototype, we will ask you to explicitly identify the patterns you have implemented in your UI. Thus, you may want to think ahead and get started with them now.

Provide a **public** link to your interactive medium-fidelity prototype:

What to submit

Please submit a single PDF document for your group via Canvas. **One person** from each group can submit the assignment on behalf of the team.

Delete the prompts in the template before submitting it. Failing to do so will result in a 10% penalty.