

## Heuristic Evaluation of Fitcoin

### 1. Problem/Prototype

We evaluated the medium fi prototype of the Fitcoin app, an app that seeks to incentivize people to workout more consistently by gamifying the process of physical exercise while also providing meaningful social interaction with other users.

### 2. Violations Found

#### 1. H1 Visibility of system status | Severity: 2 | Found by: A

The home map does not indicate to me if I am in a “null” state, or I am currently supposed to be pursuing a certain fitcoin. Users may be confused by this, especially when returning to the app (not first time sessions), as they may have started pursuing a fitcoin on the app. More importantly, it would be clear to know if there are no “activated” fitcoins at a state in time.

**Fix:** Have a status indicator on the map - indicating that the user is either not pursuing any fitcoins, or currently is pursuing a specific fitcoin stack.

#### 2. H1 Visibility of system status | Severity: 3 | Found by: A, C

When the messages view is open, there is no indication if a message is new to your inbox or not (i.e. if the user has opened it yet). This could lead to users opening chats that they already opened before, or not well-optimizing their flow by not knowing which chat to open first. This could ultimately lead to a slower user experience and user confusion.

**Fix:** Have a new message indicator in each chat cell, if there is a new message. This can be done with a simple dark circle with the message count.

#### 3. H1 Visibility of system status | Severity: 2 | Found by: A

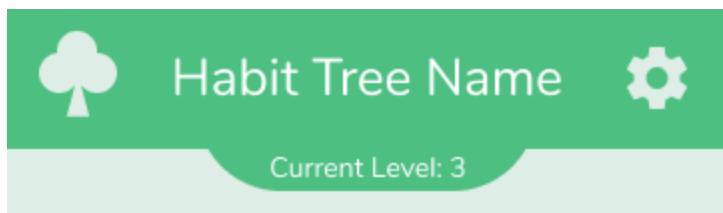
Similar to point #2, but at a more macro level - When opening the app to the home screen (map view), the user has no indication if they have new messages, and need an unneccesary extra tap to see their chats. This will cause the users to need extra taps to achieve their goal of knowing if they have new messages, and slow the flow for them.

**Fix:** Add a notification icon (exclamation mark, bell icon) in the tab bar to indicate new messages

4. **H1: Visibility of System Status | Severity: 1 | Found by: C**

The “2,500 Coins” text in the top right is small. Users may see the icon of the coins first and assume it’s part of the logo for Fitcoin, and might gloss over the text since it doesn’t stand out underneath it.

**Fix:** Either use a more simplistic icon to represent the coins and make the text larger/bold, or put the amount of coins in its own line right under the header bar (so similar idea to the image below).



5. **H1: Visibility of System Status | Severity: 4 | Found by: C**

No confirmation that reward was successfully bought in the store. If users purchase a reward and don’t see a system response for confirmation, they might think that the purchase did not go through and could potentially click more than they intend to.

**Fix:** Add a confirmation pop up message saying that the payment was successful, the number of coins spent on the reward, and the remaining amount of coins that the user has left.

6. **H1 Visibility of system status | Severity: 3 | Found by: B**

It is unclear whether the home screen shows all other fitcoin users in the area or just people you know or have already connected with. A user who sees it might be confused as to who they have access to seeing on the map and vice versa who can see them.

**Fix:** Give users the option to toggle between maps that show all other fitcoin members in your area or just those you have connected with.

7. **H2 Match between system and the real world | Severity: 1 | Found by: A**

The reward for “Venti Starbucks” is not clear in what the user receives, as it only mentions “it’s on us!”. This is ambiguous in what the user will receive, as it may be a coupon for multiple, or a free Starbucks voucher, or a different permutation of a coffee

reward.

**Fix:** Add “free voucher/coupon” to the description, changing it to “Free coffee coupon - on us!”

**8. H2 Match between system and the real world | Severity: 2 | Found by: A**

The monthly challenge reward uses the word “pay” in the title (“Pay to Play”). This can cause or trigger ambiguity for the user, as it could imply a premium / paid feature of the app, with real money.

**Fix:** Removing “pay” from reward purchases with Fitcoin will clear the ambiguity, and has strong implication that Fitcoins will be used already with the price design on it.

**9. H2 Match between system and the real world | Severity: 4 | Found by: A, B, C**

The progress chart has no indication for what the y-axis values are, only showing 1 coin to 7 coin stacks. This, in the map view, means 100 to 500 coins. In the real world, graphs are clear in their indication of y-values, and the lack of information may be confusing for the user.

**Fix:** Add y-values either on top of each progress bar, or add a top-most y-value to allow the user to understand the range in the graph.

**10. H2: Match b/w System & World | Severity: 3 | Found by: C**

In the user’s profile screen, the “Progress” title to the graph is vague. The user may get confused on what “Progress” is supposed to mean (e.g. should they be expecting to see a trend with the coins they’ve collected over time, versus a graph that’s only meant to display a visualization of the total number of coins they’ve collected each season?)

**Fix:** Rename the “Progress” title to something like “History of Fitcoins Collected” or something more descriptive of what it’s measuring.

**11. H3 User control and freedom | Severity: 4 | Found by: A, C**

This is a subtle one that had a large impact for me - the “back” button in the map zoomed-in view (when you tap on a stack or avatar), is hard to find, and therefore does not show a clear “emergency exit” to leave this state if a user pressed it accidentally. The prototype highlighted the back button, but only then did I know it was there. Users who accidentally tap into the zoomed-in view may be stuck or not know how to return, creating a suboptimal experience.

**Fix:** Add a background to the back button (circle background with contrasting back arrow on top), to make it more visible to the user.

**12. H3: User Control & Freedom | Severity: 4 | Found by: B, C**

After a user taps “Buy” in the store for a reward, there’s no final affirmation to ensure that the user truly wants to spend coins. If users accidentally tap on the “Buy” button and didn’t intend on actually purchasing the reward, there’s no way to prevent it.

**Fix:** Add a pop up message that confirms with the user whether or not they want to continue with a rewards purchase.

**13. H4 Consistency & Standards | Severity: 1 | Found by: A**

Subtitle font sizing is variable - in the setting page, the “View Profile” subtitle has very small (~7 pt) font, while subtitles in the rewards and progress pages are of different font sizes. This may confuse the user in the hierarchy of text, implying that the 3 different subtitle sizes have varying levels of importance. Also, the font size for the progress chart months is too small to read

**Fix:** Choose a consistent font sizing throughout all three cases, specifically the Rewards tile subtitle (it’s the best size for the subtitle, subjectively). This would include a consistent header, subtitle, and body font size to apply.

**14. H4 Consistency & Standards | Severity: 1 | Found by: A**

The “Buy” buttons in the rewards tiles are in different x,y locations within the tiles. The inconsistent positions may be distracting to the user’s experience, as they focus on the misalignment of the button, and not the rewards themselves.

**Fix:** Vertically align the reward tile to fit the text, while keeping the Buy button in the same x,y position. Also, keeping all labels to 1 line (one of the subtitles have two lines), can help with sizing/spacing consistency.

**15. H4 Consistency & Standards | Severity: 2 | Found by: A**

In progress chart, they have the same icons as the rewards, such as monthly challenge and mystery prize. This can be confusing to the user, as two bars with different heights both have the same icon (mystery prize), and there’s ambiguity on if a user can only have one reward per month, or if the most important reward is shown on the progress bar.

**Fix:** Create a consistent pattern / hierarchy to the medal icons, and have indicate in the app which icon is shown in the progress bar and why.

**16. H4 Consistency & Standards | Severity: 2 | Found by: A**

Tapping on other users' avatars on the map opens the zoomed-in detail view, while tapping on your own avatar takes the user to the profile screen. This is inconsistent and surprising to happen, especially if the user is acclimated to tapping on avatars to get a zoomed-in detail view (as is the case with tapping on other users). This can be distracting to the user experience and misleading to their expectations.

**Fix:** Created a zoomed-in view of your own user's avatar, with a segue to the profile from there.

**17. H4 Consistency & Standards | Severity: 2 | Found by: A, C**

The settings tab is on the left. Typically it's the right-most tab, or only found behind another logistical view, such as the profile view or the top bar. Breaking this expectation for the user (Jakob's Law), might cause confusion and increase their cognitive load.

**Fix:** Move the settings view to a button within the profile page, and remove the settings tab.

**18. H4 Consistency & Standards | Severity: 1 | Found by: A, C**

The "Chat" button in the map detail view (tapping on another user's avatar) and the "BUY" button in the rewards view aren't consistent. The colors differ, and one is in all caps, while the other is not. This inconsistency can cause the user to be confused on why they are different, or why one is caps and the other is not.

**Fix:** Create a consistent button design across views, choosing either the design for the reward or the map buttons.

**19. H4 Consistency & Standards | Severity: 3 | Found by: A**

The zoomed-in detail view in the map (tapping on a coin stack or user avatar) is inconsistent in the positioning of the detail card. For example, the 500 coin stack has the detail card on the top of the screen, while the other stacks have them at the bottom. This can be an inconsistent experience for the user, as they will expect to see the details in the same in the screen every time

**Fix:** Move the detail card in the 500 coin activity to the bottom of the screen, and simply "scroll up" on the map so that the path and avatar are above that detail card. Or, choose one consistent detail card position to position the zoom-in view.

**20. H4: Consistency & Standards | Severity: 1 | Found by: C**

On the settings page, the “About” option is below “Sign out”. A bit minor, but usually the user expects to see “Sign out” as the last option of a list and “About” would be somewhere closer to the top of the list.

**Fix:** Rearrange the options in the settings page so that “Sign out” is the last option in the list and “About” is higher (maybe between “Notifications” and “Privacy”)

**21. H4: Consistency & Standards | Severity: 1 | Found by: B, C**

The “Messages” screen is the only screen with a white background, while the user profile screen is half white and half light blue. The other screens in the prototype have light blue as the whole background color, which seems to indicate inconsistency in the styling.

**Fix:** Update the background color for the “Messages” screen to be light blue (and then possibly update the chat boxes to be white or another color as contrast)

**22. H4 Consistency and standards | Severity: 3 | Found by: B**

The shopping main page is a little overwhelming with all the different colors. The user might find it distracting and difficult to focus on a particular prize.

**Fix:** Give the prize icons with a more consistent color theme and change the background color of each prize to something lighter so that the text explaining the prize is clearer.

**23. H5: Error Prevention | Severity: 3 | Found by: C**

In the store, not clear what happens if the user does not have enough fitcoins to purchase a reward. If the user does not have enough fitcoins, they should not be able to purchase the rewards with a higher fitcoin value.

**Fix:** You could grey out the “Buy” button and make it unclickable, and also highlight the fitcoin amount within the reward box to indicate to the user they don’t meet that amount.

**24. H6 Recognition rather than recall | Severity: 3 | Found by: A, B**

The user has no indication of how many coins a certain stack has in the map view. They are told when they press on it and see the detail view, but lose indication if they return. Coins are not enough of an indicator, because there is not a clear mapping - 1 coin stack is 100, 3-stack is 200, and 7-stack is 500 coins on the map. This can cause the user to misattribute how many coins a coin truly has, and choose activities with the incorrect context or incentives at the end.

**Fix:** Add either a coin count under the stack, or have a clear mapping of stack icons to coins (i.e. each coin in a stack = 100 coins)

**25. H6 Recognition rather than recall | Severity: 3 | Found by: A**

The messages screen has no time stamps. Therefore, the user cannot easily recall when they sent or received a message, which may cause confusion, especially if other users are asking them time-sensitive questions, such as joining a workout or a team. The receiving user would be confused to receive an answer only days later, when the sender would have no idea they were late.

**Fix:** Add timestamps to messages.

**26. H6 Recognition rather than recall | Severity: 2 | Found by: B**

The avatars do not convey meaningful information about the identity of the other users and make it hard to recognize who is who on the map. Also, the users' names are difficult to see and do not stand out.

**Fix:** Change the avatars to small profile shots of the users or make the other users' names more prominent by either bolding their names or changing their names to a color that makes them more visible.

**27. H6 Recognition rather than recall | Severity: 3 | Found by: B**

On the progress page the user has to remember what each of the achievement icons mean or have to go back to the store to see how many points correspond to each achievement.

**Fix:** Have an easily accessible legend on the profile page that lets the user see how many points correspond to each achievement icon.

**28. H6: Recognition not Recall | Severity: 3 | Found by: C**

On the Map screen, if a user clicks on a different user's animal, it doesn't say if it's someone new or someone the user has already met. On the off chance the user sees someone with the same exact first name and last name initial, they might not be sure if it's the same user they've already met in the past or someone new.

**Fix:** On the screen after the user taps on an animal icon, indicate in the information box if they are someone new that the user has not met, or the last date they encountered the user.

**29. H7 Flexibility and efficiency of use | Severity: 2 | Found by: A**

The rewards tab doesn't seem to have a specific order to display rewards. Power users / users who purchase frequently might have favorite rewards or rewards they like for periods of time.

**Fix:** Add a “favorites” or “recently bought” section for rewards

**30. H7 Flexibility and efficiency of use | Severity: 2 | Found by: A**

The coin stacks or other users in the map don’t seem to have any priority. Power users might want a quick indication of their most frequently finished activities.

**Fix:** Add a star icon or clock icon in stacks on the map that are done frequently or recently for the user.

**31. H7: Flexibility & Efficiency of Use | Severity: 2 | Found by: C**

On the screen after the user taps on an animal icon, the user has to find and tap on a back button to return to the map. Since the user can still see the map being displayed in the background, they might naturally want to just tap the map in order to return back to the previous screen.

**Fix:** Allow the user to be able to tap anywhere outside of the animal user’s information box to return back to the map.

**32. H8. Aesthetic and minimalist design | Severity: 2 | Found by: A, B**

The “You” user avatar is the same size as the user avatar for other users in the map. This may be confusing or not optimized for signal, as it will take longer to find your own avatar and location, which is the highest priority piece of information in the map, to then find the coins.

**Fix:** Decrease the size of other users’ icons/avatars.

**33. H8. Aesthetic and minimalist design | Severity: 4 | Found by: A, B, C**

After pressing on another user’s avatar on the map and opening the zoomed in view, the user name conflicts with the street names. This can make the name hard to parse for users, yielding a noisy experience.

**Fix:** Remove street names in the zoomed-in view of other users, also fill in the textbox of the user’s with an opaque background color so that it’s more visible and noticeable. Ideally, also make the box have rounded corners so it’s more visually appealing.

**34. H8. Aesthetic and minimalist design | Severity: 2 | Found by: A**

Many street names appear on the map, but less so near the user’s avatar. This may be unnecessary noise for the user, as landmarks and very few important street names is enough to localize themselves. This noise can cause the user to take longer to parse

the map and see the more important information (e.g. the coins and other users)

**Fix:** Add street names to only streets close to the user, and more sparsely, only in larger / main streets.

**35. H8. Aesthetic and minimalist design | Severity: 1 | Found by: A**

The rewards grid isn't aligned / symmetrical. There seems to be some tiles that are closer / farther apart from each other, and the margin spacing in between them is variable. This might distract users during their flow.

**Fix:** Re-align the tiles and create consistent margins to decrease noise

**36. H8. Aesthetic and minimalist design| Severity: 1 | Found by: A**

Small detail here - the margin spacing isn't consistent across the views, and sometimes within views. In the settings page, the profile picture seems to be on a different margin than the below options, and it is common for them to be all left aligned to some margin. Also, the margin size is very small in the rewards page, while larger in the profile / settings page.

**Fix:** Choose a fixed border margin size and apply to every view of the app.

**37. H8: Aesthetic & Minimalist Design | Severity: 1 | Found by: C**

In the user's profile screen, the y-axis of the graph has an arrowhead. Since it's clear that it's meant to be a graph, it's already implied that the top part of the graph will represent a higher numerical value than the bottom part of the graph.

**Fix:** Remove the arrowhead and instead add a faint border so that the x-axis and y-axis are more implied

**38. H8: Aesthetic & Minimalist Design | Severity: 2 | Found by: C**

In the store, the use of black text on top of the dark blue box with each reward. Since both colors are already dark in hue, the user could find it difficult to read the text.

**Fix:** Change the text color to a lighter color (such as the light blue that's being used in the background) to provide more contrast.

**39. H8: Aesthetic & Minimalist Design | Severity: 1 | Found by: C**

In settings, "View Profile" is written in small text under the user's name. The user might have to spend extra effort to read it, and overall does not look consistent with the rest of the text on the page. In addition, the user can usually infer that tapping on their name would bring them to their profile page.

**Fix:** Remove the “View Profile” text

**40. H8 Aesthetic and minimalist design | Severity: 1 | Found by: B**

Half of the profile/progress page is the user avatar and the other half is the Fitcoin progress info. The user might want to prioritize seeing their fitcoin progress as opposed to a large depiction of my avatar and the current design makes the analytics look small and difficult to decipher.

**Fix:** Removing the avatar from this screen would allow for more space for the progress bar and make the analytics clearer and more prominent.

**41. H8 Aesthetic and minimalist design | Severity: 3 | Found by: B**

When the user selects another user on the map, the app zooms in on the user and also populates the user info card. This makes the screen cluttered and a user might find it difficult to focus on a particular part of the screen now that we have the map, the nav bar, and the user card. Based on the task flow, it seems the emphasis should be on the user wanting to chat and connect with another user.

**Fix:** Have the user card take up the entire screen when the user is selected or blur out the background to make the user card more prominent.

**42. H8 Aesthetic and minimalist design | Severity: 1 | Found by: B**

When the user selects a coin, they are shown the path to the coins in a path that is broken up into small blocks. This is a bit distracting and could it make it difficult for the user to follow the path.

**Fix:** Make the path one continuous line similarly to what Google Maps does when showing a path.

**43. H10. Help and documentation | Severity: 2 | Found by: A**

There exists minor confusion on why some segues exist, specifically in the avatar detail view (when you press another user’s avatar on the map). There could be more indication or clarity of why a certain action is present for the user to take. For example, seeing the “chat” button when tapping a user’s avatar is not clear why that is the most important thing in terms of the apps’ goal - am I able to organize with another user to get a coin or do an activity together? Since the user does not see any features for that, the chat feature as a priority may be confusing.

**Fix:** Add a (!) information icon next to the “Chat” button to explain the importance or the intended use cases of certain features, such as the messaging.

**44. H10. Help and documentation | Severity: 3 | Found by: A, B, C**

There is no “help” or “FAQ” in the app. Users may be confused or lost and need such a page to help them navigate the app, especially for the first time, since there are

complex ideas such as gamification and a reward system.

**Fix:** Add a (?) info icon in the settings or profile page that segues to a FAQ or help page. Or, add an onboarding flow that explains the app. Have more graphics in the onboarding as opposed to a lot of text to explain the system. It will be easier for the user to understand and create a low barrier to entry.

### 3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status	0	1	2	2	1	<b>6</b>
H2: Match Sys & World	0	1	1	1	1	<b>4</b>
H3: User Control	0	0	0	0	2	<b>2</b>
H4: Consistency	0	5	3	2	0	<b>10</b>
H5: Error Prevention	0	0	0	1	0	<b>1</b>
H6: Recognition not Recall	0	0	1	4	0	<b>5</b>
H7: Efficiency of Use	0	0	3	0	0	<b>3</b>
H8: Minimalist Design	0	6	3	1	1	<b>11</b>
H9: Help Users with Errors	0	0	0	0	0	<b>0</b>
H10: Documentation	0	0	1	1	0	<b>2</b>
<b>Total Violations by Severity</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>12</b>	<b>5</b>	<b>44</b>
<b>Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)</b>						

## 4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C
sev. 0	0%	0%	0%
sev. 1	46%	15%	46%
sev. 2	79%	14%	21%
sev. 3	42%	50%	42%
sev. 4	80%	80%	100%
<b>total (sev. 3 &amp; 4)</b>	47%	53%	59%
<b>total (all severity levels)</b>	75%	30%	43%

\*Note that the bottom rows are *not* calculated by adding the numbers above it.

## 5. Summary Recommendations

[merge the general recommendations you made here]

Overall we think Fitcoin exceeds in giving the user a lot of control while also using clear language in sections such as the shopping page. Moreover, the central navigation has clear and meaningful symbols and allows the user to freely explore all parts of the app. The app emphasizes being coin and social centric by having the landing page as the map that allows you to find both coins and friends. Also, there exists a macro-level trend of violations pertaining to UI consistency. Many of these violations fell under the Consistency and Standards and Aesthetic and Minimalist Design buckets. Firstly, since orange and blue are complementary colors, it might be better if one of those colors were the dominant theme color within the application, and the other color acting as the accent color to make certain features pop. For example, with some of the screens (like the store and message screens) where blue appears to be the dominant color, it really clashes with the orange top header and doesn't feel cohesive anymore. It could be worth looking into using different shades of orange and toning down the use of blue to certain areas instead for the aesthetics. Furthermore, there are cases in which a more consistent font system, especially consistent sizing, and a more consistent layout by use of margins and spacing, that if addressed, will yield an amazing user experience. More specific examples of this includes left-aligning content in logistical screens such as the setting and profile tab, making sure the spacing is even in the rewards grid (including the margin), and having preset font sizes for headers, subtitles, and body fonts. This will unify all of your screens into one identity and brand.

Beyond the 10 heuristics, we were also curious about the targeted intention of the social aspects of the app. Is the intention to build community by connecting strangers, connecting already existing friends, or doing both? If you are trying to get people to form new connections with strangers, it might be worth spending more time on building more impactful UI social

aspects to the app beyond just messaging because a user could be nervous to message someone they have never met. One way of doing this is having the map also indicate most common workout spots so people can try to workout in places where they have a higher chance of meeting someone new and then can continue their new connections through messaging on the app (but we also recognize this could have certain limitations given Covid safety protocols). But, in order to keep the map from being overloaded with this information, you could give the user the option to toggle between the standard map and a map that lists the most common workout spots.

Regarding tasks, we noticed task 3 cannot be completed in the prototype - we can visualize the list of rewards and see the Buy button, but we cannot complete the task of buying a reward. The task flow does not show what happens after the user clicks the "Buy" button (e.g. is there a confirmation message?). The prototype also did not show an example of what the reward box would look like if the user did not have enough fitcoins to purchase the reward. In addition for the simple task, it's unclear what happens once the user is within the vicinity of the fitcoins, since getting directions wouldn't make sense anymore. The prototype only accounted for the scenario where the user was far away from the fitcoins and does not show what happens when they're near it.

Overall, we are super excited about Fitcoin! It is a really great idea and this prototype is a fantastic start to getting the vision to users. We are excited to play with the final product. Best of luck!

### **Severity Ratings**

- 0 - don't agree that this is a usability problem
- 1 - cosmetic problem
- 2 - minor usability problem
- 3 - major usability problem; important to fix
- 4 - usability catastrophe; imperative to fix

## **Heuristics**

### **H1: Visibility of System Status**

- Keep users informed about what is going on

### **H2: Match Between System & Real World**

- Speak the users' language
- Follow real world conventions

### **H3: User Control & Freedom**

- "Exits" for mistaken choices, undo, redo
- Don't force down fixed paths

### **H4: Consistency & Standards**

### **H5: Error Prevention**

### **H6: Recognition Rather Than Recall**

- Make objects, actions, options, & directions visible or easily retrievable

### **H7: Flexibility & Efficiency of Use**

- Accelerators for experts (e.g., gestures, kb shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

### **H8: Aesthetic & Minimalist Design**

- No irrelevant information in dialogues

### **H9: Help Users Recognize, Diagnose, & Recover from Errors**

- Error messages in plain language
- Precisely indicate the problem
- Constructively suggest a solution

### **H10: Help & Documentation**

- Easy to search
- Focused on the user's task
- List concrete steps to carry out
- Not too large