

## Heuristic Evaluation of Wallus

### 1. Problem/Prototype Description

Wallus is an app that creates a space for users who are new to investing to make their first investments and connect with friends who are also new to investing.

### 2. Violations Found

1. H10 - Help and Documentation / Severity: 4 / Found by: A, B, D  
Task: 3  
Description: There were not many “?” pop ups to explain different terms on the app.  
Rationale: A new user who is unfamiliar with the stock market may not even know what Index Funds are, S&P 500, or how to best interpret a stock’s trends. Without easy access to this information, they may have to search the internet and may be faced with complicated and hard-to-understand results that discouraged them from joining the stock market in the first place.  
Fix: Add more “?” bubbles throughout the app to explain key terms.
2. H10 - Help and Documentation / Severity: 3 / Found by: B, D  
Task: 1  
Description: In the tab to accept an investment group request, it says “This investment aligns well with your investment goals”, however it doesn’t explain why/how it aligns with the goals  
Rationale: Users on the app should have as much transparency as possible into how Wallus determines which investments align with their goals and which don’t.  
Fix: Include another sentence explaining why an investment does/doesn’t align with a user’s goals, or what the criteria is for an investment to align with their goals.
3. H5 - Error prevention / Severity: 3 / Found by: A, B, D  
Task: 1  
Description: On the “Market” tab under “Daily Movers”, users can click on the Tesla stock and then it takes them to an accept/reject page. This confused me - what are we accepting here? What does Daily Movers mean?  
Rationale: If we are accepting a group invitation, that should be made more clear. On Wallus, it seems that users can accept requests both from the bell notifications icon and from the “Daily Movers’ section’. This is not intuitive and may require them to memorize this task flow on the app.  
Fix: Allow users to accept investment group invitations in one place on the app (not multiple places).
4. H4 - Consistency and Standards / Severity: 2 / Found by: B  
Task: 3  
Description: Users can invest from clicking on a stock in the “Markets” page, but not from clicking on stocks from the stocks section of the “Explore” page.

Rationale: It's inconsistent to have the exact same UI for a stock on one page and allow users to invest from clicking on it there, but not from the same stock UI on another page.

Fix: Allow users to click on and invest in stocks from the Market page and Search page (and any other page that has this stock UI).

5. H10 - Help and Documentation / Severity: 2 / Found by: A, B

Task: 3

Description: It is unclear how users should interpret the "My portfolio" section in their profile.

Rationale: As a new user, I would not be sure what the purpose of this section is. Is the goal to minimize risk? Or invest in more stocks?

Fix: Include a "?" or text box under the My Portfolio section so users understand what they should be doing with these results.

C disagrees this is a violation

6. H1 - Visibility of System Status / Severity: 1 / Found by: B

Task: 3

Description: It would be nice if, with each stock, you could see which part of the stock's graph trend occurred in the last day/month/whatever unit of time you are using.

Rationale: When just presented with an overall trend of the stock, it's hard to tell how long the stock has been in the positive/negative.

Fix: Color the last day's trend of the stock in a different color or include some other indication of the recent changes in the stock.

7. H8 - Aesthetic and minimalist design / Severity: 2 / Found by: A, B, D, C

Task: 3

Description: The "My portfolio" has a section labeled "Risk" but no units of measurement for how this risk is calculated.

Rationale: May confuse users who do not know why one stock is higher risk than another.

Fix: Include some explanation for what this risk factor means.

8. H2 - Match between system and the real world / Severity: 1 / Found by: A, B, C, D

Task: 3

Description: The "Risk level" section has a thunderbolt, but I am not sure how to evaluate that.

Rationale: Does higher risk = more thunderbolts? Or does it have different weather symbols (like really high risk is a storm symbol vs. low risk is a sun)? I am not sure, and there is no precedent of other apps that use weather symbols in this way that I can compare to..

Fix: Make it clearer what this thunderbolt means. You could consider having it on a scale like 3-4 thunderbolts and graying out some of the thunderbolts when there is lower risk, and filling them in when it's higher risk.

9. H1 - Visibility of system status / Severity: 3 / Found by: A, B, C

Task: 3

Description: Stock charts do not have unit labels on x-axis and y-axis

Rationale: Without these labels, it is hard to know exactly how high or low the stock was at any given time. Users can only eyeball it by looking at the stock's current value and trying to guess how much higher or lower it was at one point.

Fix: Allow users to actually see the stock prices over time, not just the trend.

C suspected this may be a design choice to avoid fixation on prices?

10. H11 - Accessible Design / Severity: 3 / Found by: A, B

Task: 2

Description: On the Brave Potatoes index page, there is too much information that would be difficult for a screen reader to interpret.

Rationale: This page has the Wallus tips, stock information, and multiple news article headlines. This would likely be a lot for a screen reader.

Fix: Consider nesting the information that is not crucial for the reader at first glance (such as the articles - if they are curious about articles on this specific stock, they can expand a drawer to see them. Otherwise, it does not need to appear on the main page).

11. H3 - User control and freedom / Severity: 2 / Found by: B

Task: 3

Description: "In the news" articles are not clickable.

Rationale: It would make sense for the articles to be clicked on so you can open them and read more information.

Fix: Make these articles clickable so they can open a Safari/Google Chrome tab with the actual article.

12. H5 - Error prevention / Severity: 4 / Found by: B

Task: 2

Description: When creating an invitation to an investment group, you can remove all people from the group and still send the invitation.

Rationale: Could create errors with users who send invitations without users in the group.

Fix: Make sure users actually select an investment group by creating an error message when they attempt to invite people without actually selecting users.

13. H3 - User control and freedom / Severity: 2 / Found by: B

Task: 2

Description: If you select the users in your investment group and then write a message for the invite group, clicking "Back" does not take you back to the previous screen you were on before the investment group. Instead, it takes you back to the screen with just the investment group selected and no message.

Rationale: This is not intuitive for the user, as it is expected that clicking Back would take you back to the previous screen, not just the previous action on the investment group invite page.

Fix: Make sure the back button will take users back to the page they were on before trying to invite friends to an investment group.

14. H7 - Flexibility and efficiency of use / Severity: 2 / Found by: B

Task: 2

Description: Users cannot see a list of all of the people in their investment group.

Rationale: Right now, they can just see the profile pictures of people in their group but cannot see everyone's names. This would make it difficult for users to remember who is in a large investment group.

Fix: Include a section in the investments group page where people can see exactly who is in the investment group.

15. H12 - Value design and inclusion / Severity: 4 / Found by: B

Task: 3

Description: All of the stock trends are very traditional and replicate the stock trends people would see on other platforms/on the internet.

Rationale: Because of this, there is little tailoring towards users who are unfamiliar with the stock market and wouldn't know how to interpret these stock trends. There is no uniqueness in the UI designs of these stock trends to make the app feel comfortable for new users.

Fix: Change the UI of the stock trend graphs to make it more comfortable and understandable for new users.

C disagrees this is a violation, more advanced sites probably at least have candle sticks and trend lines

16. H11 - Accessible design / Severity: 2 / Found by: B

Task: 3

Description: The due diligence stock page has multiple forms of information (images, videos, text definition, etc).

Rationale: May be difficult for a screen reader to know how to interpret all of these different forms of media, especially the image (which has no alt text) and the video (which doesn't seem to have a transcript).

Fix: Make sure all forms of media on this page have been designed in an accessible manner, or consider just using text instead of multiple mediums.

17. H10 - Help and documentation / Severity: 3 / Found by: B, C

Task: 3

Description: Each stock has a green or red percent next to it but no information on what that percent is tracking.

Rationale: Users who are unfamiliar with the stock market may not know how to interpret that percent or what time frame it covers.

Fix: Include a "?" button or other information that allows a user to better understand how to interpret this percent.

18. H8 - Aesthetic and Minimalist Design / Severity: 1 / Found by: B

Task: 3

Description: Red color choices on the percent values of stocks that have gone down.

Rationale: Red usually implies that something is bad, so red may cause new users to think that the stock is bad/not worth investing in. The reality is that a stock in the red could just be one that is having a down day, new users may not know this. Furthermore, red is the color used to represent a down day for stocks that every other investment app uses, so it makes Wallus seem just like all of these other platforms.

Fix: Consider using a different color besides red to convey that a stock has gone down in the past day.

C disagrees with the fix, it would be significantly more confusing to not follow conventions of green and red, more experienced traders would love seeing big reds as buying opportunities so perhaps a help section is better

19. H4 - Consistency and Standards / Severity: 1 / Found by: A, B, C

Task: 3

Description: On the “Based on preferences” and “Based on friends” tabs of the Index Funds sections, the red percent values have different formatting with inconsistencies with parenthesis.

Rationale: Some red values have two parentheses, others have one parenthesis, and the green values have no parentheses. There is no consistency.

Fix: Make all of the percent values have the same formatting across tabs

20. H3 - User control and freedom / Severity: 3 / Found by: B

Task: 3

Description: Users can only access their profile from the home tab.

Rationale: This is an issue because if users want to access their profile, they can only do it from the header in the home tab. In all of the other tabs, there is no button that takes you to your profile. This causes them to have to memorize the profile button location on the app instead of it being readily available at all times.

Fix: Make the profile button accessible from each tab so users can always view it.

21. H4 - Consistency and Standards / Severity: 2 / Found by: B

Task: 3

Description: On the home page, the “1 year ago...” section has no title.

Rationale: I am not sure if this is supposed to be a history section or some sort, or an investments highlight section, or something else. Additionally, the other sections have clear titling, so it is inconsistent for the topmost section to not have a title of some sort.

Fix: Add a title to this section explaining what its purpose is.

22. H5 - Error prevention / Severity: 3 / Found by: B

Task: 2

Description: When inviting users to groups, there seems to be no limit on the number of users I can invite.

Rationale: Because groups are supposed to be safe spaces for people to be with like-minded friends who have similar stock experience, it seems counterintuitive to make groups without

any sort of limit in the number of people in a group. Otherwise, what would keep a user from adding hundreds of members and causing the group to lose this personalized feel?

Fix: Consider coming up with a limit of the number of people who can join each group (I think 10 or 15 would be a good number, but perhaps your user interviews may suggest something different).

23. H10 - Help and documentation / Severity: 4 / Found by: B

Task: 3

Description: The “Community” page does not say what exactly is listed on the page or what the page is for.

Rationale: The fact that there is no documentation on this page and it goes straight into the feed may confuse users and cause them to not use the page that much. From my perspective, it’s unclear exactly what goes on that page and how it is relevant to me as a user.

Fix: Add a subtitle or some sort of text to the community page that explains what its purpose is.

24. H7 - Flexibility and Efficiency of Use / Severity: 3 / Found by: B

Task: 3

Description: Clicking on the home tab -> notification bell -> the second “Details” button -> back button takes you back to the home page.

Rationale: This is not intuitive; the back button should take you back to the notifications page, not to the home page.

Fix: Make the back button go back to the notifications page.

25. H9 - Help users with errors / Severity: 2 / Found by: B

Task: 3

Description: When buying or selling a stock, the “Custom” text does not look pressable.

Rationale: The “Custom” text is not grayed out or a different color, so it doesn’t look clickable. Because of this, I’m not actually sure how I would enter a custom value to buy or sell.

Fix: Make the “Custom” text look like a button or text box so users know it’s clickable.

26. H7 - Flexibility and Efficiency of use / Severity: 4 / Found by: A, B, D

Task: 3

Description: The dictionary is nested too deep in the app.

Rationale: Because the users are beginners to the world of stock markets, it is likely they will be unfamiliar with a lot of the terminology. They need an easy way to look things up or an easy to access glossary/dictionary. Having them away from the home page and nested into a tab into the search bar creates more barriers between a user and their ability to get answers to their questions.

Fix: Consider moving the dictionary to a more prominent location on the app. (Something I was thinking is that it could be cool to integrate the dictionary into the Wallus icon on the homepage. It could look like Wallus the Walrus is teaching the user the terms! :))

27. H8 - Aesthetic and minimalist design / Severity: 1 / Found by: B

Task: 3

Description: Formatting of stocks on the Search tab.

Rationale: For some reason, the stocks under the “Your groups” section are formatted differently than the stocks under the “Stocks” section. Some have shadows and others don’t.

Fix: Format all of the stocks on this page in the same way.

28. H10 - Help and Documentation / Severity: 3 / Found by: B

Task: 3

Description: Lack of descriptions in the “Recommended for you” section in the Market tabs.

Rationale: It is unclear to me how you are recommending the index funds, what it means for a stock to be recommended based on preferences, or what it means to be recommended based on friends. It would be helpful if each of these sections contained a little information about why a certain stock is there, especially because each recommendation style is so distinct.

Fix: Include a blurb or “?” button in each section about what the recommendation style means.

29. H5 - Error prevention / Severity: 3 / Found by: A, B, D

Task: 1

Description: When you click on the S&P 500 from the Market’s tab and then click “Invest”, it automatically adds you to the investment group.

Rationale: There is no page to confirm whether a user actually wants to join the group, nor an undo button that allows them to leave the group. This is an issue if the user accidentally clicks the Invest button.

Fix: Include a screen between when the user clicks “Invest” and when they are able to join the investment group. This screen should allow users to go forward with their decision or go back if they do not actually wish to invest.

30. H4 - Consistency and standards / Severity: 1 / Found by: B, C

Task: 3

Description: The “My activity” section in the user’s profile has activity from other users.

Rationale: This is not intuitive as a user because on most other apps, a “my activity” section will just have the activity of the user who owns the account. Including other users’s activities takes away from the main purpose of this section..

Fix: Make sure the My activity section only has the activities of the user who owns the account.

31. H8 - Aesthetic and minimalist design / Severity: 2 / Found by: B, D

Task: 3

Description: Wallus logo in corner of home screen is not clickable.

Rationale: It seems a little weird that the Wallus logo is not at all clickable. Usually on apps, clicking on the logo will take you to some sort of page, whether that be settings, profile, help, etc. Just having the Wallus logo there but not having it be clickable takes up space and doesn’t serve much of a purpose.

Fix: Add some sort of click functionality to the Walus logo, or just remove the Wallus logo from the home screen.

32. H3 - User control and freedom / Severity: 1 / Found by: B  
Task: 3  
Description: Users can no longer see the back button when they scroll to the bottom of the “My profile” page.  
Rationale: This is somewhat of a minor issue, but it did seem a little weird to me that I have to scroll all the way up to the top of the My Profile page to click the back button. It is just like how when I am searching the web on Safari, I expect the back button to always be present in the header; I do not expect to have to scroll back up to the top of the website I’m on to click Back.  
Fix: Make the back button “sticky”, so users can still go back from the profile page even when they are not at the top.
33. H10 - Help and documentation / Severity: 3 / Found by: A, B  
Task: 3  
Description: I am not sure what the “Total Investing” and “My Balance” titles mean on the profile page.  
Rationale: Does Total Investing mean the amount I have that’s currently invested? If so, where can I see a breakdown of what exactly that money is invested in? Furthermore, what is the My balance section? Is that the money I’ve made? Or money I’ve put into the app for future investments?  
Fix: All of these questions could be made clearer with more documentation on both of these sections. This will allow the user to better understand the purpose of the sections and how they should use them.
34. H8: Aesthetic and Minimalist Design / Severity: 1 / Found by: A, B  
Task: Complex  
Description: On the profile screen, the axes labels on the dot chart “Risk” and “Industry” are oddly placed. The “Risk” label is overlapping with the grid, and the “Industry” label is on the same row as the x-axis categories.  
Rationale: “Risk” currently looks more like a title rather than the y-axis label. “Industry” although bolded still looks like an x-axis bucket rather than the x-axis label. Users might be confused by what the graph means due to the misplaced labels.  
Fix: “Industry” label should be in its own row under the x-axis categories. “Risk” label can be rotated 90 degrees and be put in its own row to the left of the grid.
35. H10: Help and Documentation / Severity: 3 / Found by: A, B, C  
Task: Complex  
Description: On the profile screen, the y-axis on the dot chart is incompletely labeled. The label says “Risk,” but there are no other markings.  
Rationale: The user does not know how risk is quantified here. The dots in the chart do not mean anything without y-axis markings.  
Fix: Include markings with risk ratings from 1-5 (low-high). Even markings that indicate low, medium, and high risk would work.

36. H4: Consistency and Standards / Severity: 1 / Found by: A  
Task: Complex  
Description: On the profile screen, the dots on the dot chart are different shades of blue.  
Rationale: Different shades of blue might indicate to users that the differently shaded dots might mean different things. Without a legend to clarify these differences, users might wonder why the dots are different shades of blue.  
Fix: Include a legend, or make dots the same shade of blue.
37. H2: Match between System and the Real World / Severity: 1 / Found by: A, B  
Task: Complex  
Description: On the home screen, index funds and stocks are displayed without any documentation.  
Rationale: Investment rookies likely won't know the difference between index funds and stocks or what an index fund is. Honestly, I personally don't really know what the definition of a stock is.  
Fix: Provide question mark icon next to index funds and stocks label to briefly define what they are. This applies to jargon on other screens as well.
38. H4: Consistency and Standards / Severity: 1 / Found by: A  
Task: Complex  
Description: On the Brave Potatoes screen, the risk level is in its own box, separate from the box that contains all other details.  
Rationale: This is inconsistent throughout various screens. Other screens provide risk level in the same box as all other details. This inconsistency might be distracting for users.  
Fix: Commit to putting risk level in its own box or within the same box containing other details, across all screens.
39. H8: Aesthetic and Minimalist Design / Severity: 1 / Found by: A  
Task: Complex  
Description: On the Brave Potatoes screen (as well as other screens with similar information), the details (i.e. risk level, bought at, current price) are completely bolded.  
Rationale: Using bold and regular text efficiently can help draw the user's attention to what you want them to see. Bolding both the title as well as the data might be a bit of information overload.  
Fix: Bold only the titles and use regular font for the corresponding data. (ex: **Bought at:** \$45.88).
40. H6: Recognition Rather Than Recall / Severity: 2 / Found by: A  
Task: Complex  
Description: On the chatroom screen, you cannot see the friends that are in the group.

Rationale: When in a group chat, users want to see who they're sending a message to. Users don't want to jump back and forth between the group screen and chatroom screen to remember who is in the group chat.

Fix: Include profile icons of the people in the group in chatroom screen.

41. H11: Accessible Design / Severity: 1 / Found by: A

Task: Complex

Description: On the chatroom screens, it appears that users can only send a message through typing a message on their mobile keyboard.

Rationale: Providing users with only one way to input text can be inaccessible for some. For instance, people with limited sight might struggle with typing messages on a small handheld device.

Fix: Include voice memos in the chatroom.

42. H1: Visibility of System Status / Severity: 1 / Found by: A

Task: Moderate

Description: After sending an invite to friends to join an investment group, the user is just redirected back to the home page.

Rationale: Users might be confused if their invitations went through because there is no visual confirmation that they did. I also cannot seem to find sent invitations to friends anywhere else in the app.

Fix: Include a visual confirmation immediately after invitations are sent or redirect to a screen that shows users their sent invitations after invitations are sent.

43. H4: Consistency and Standards / Severity: 1 / Found by: A

Task: Complex

Description: Titles in the Buy and Sell screens are inconsistent. "You are buying.." vs "You are selling".

Rationale: Inconsistency might be distracting to users.

Fix: Change "You are buying" to "You are selling".

44. H6: Recognition Rather Than Recall / Severity: 4 / Found by: A, C

Task: Complex

Description: On the Buy and Sell screens, users are not shown which investment they are buying or selling.

Rationale: Users should not have to recall from the previous screen which investment they are buying and selling, especially since these actions are important and involve money.

Fix: Indicate which investment the user is selling or buying on the corresponding screens.

45. H2: Match between System and the Real World / Severity: 2 / Found by: A, B, C, D

Task: Complex

Description: Lots of jargon used in the app throughout to inform users. For example, on the S&P 500 screen, I, as a rookie, am not sure what “volatility” or “typical hold” means or refers to.

Rationale: The app’s target audience is investment rookies, and rookies, more than any other users, will need explicit, simple explanations and definitions on jargon.

Fix: Include question icon buttons next to all jargon.

Participant B thinks this is even more severe than a 2

46. H1: Visibility of System Status / Severity: 4 / Found by A, B, D

Task: Simple

Description: Users can accept invitations by clicking the notification bell. However, the notification bell does not indicate to the user that they have notifications that they have not read or responded to yet.

Rationale: Users might miss invitations or notifications because the system does not show that there are notifications to be reviewed. This can be a usability issue since users won’t be able to accept invitations to join new groups.

Fix: Notification bell should have a small popup icon that indicates how many unread notifications there are, if there are any.

Participant B thinks this is Severity 3

47. H3: User Control and Freedom / Severity: 3 / Found by: A, B

Task: Simple

Description: Hitting accept to an invitation redirects you to a celebration message. Declining an invitation redirects you back to notifications. There’s no way for the user to undo these actions.

Rationale: Users could decline or accept an invitation by mistake. There should be an easy way for users to fix an accidentally declined or accepted invite. Decline is an easy fix since you can ask your friend to resend the invitation, but hitting accept by mistake is a bigger issue.

Fix: Provide “Leave group” button in investment groups.

48. H11: Accessible Design / Severity: 1 / Found by: A

Task: Complex

Description: All types of notifications are displayed in the same text size.

Rationale: When a user has a lot of notifications, the notification screen will clutter with text of the same size. It might be helpful for important text to be a different size, so users can differentiate between types of notifications.

Fix: Include bigger, bold titles for notifications that indicate what type of notification it is—invitation, investment no longer aligned with goals

49. H1: Visibility of System Status / Severity: 4 / Found by: A, C, D

Task: Complex

Description: After selling or buying an investment, the user is automatically redirected back to the specific group’s investment screen. There is no confirmation of sale or purchase.

Rationale: Confirmation of sale or purchase is imperative here since we don't want users assuming that their sale or purchase did not go through and run through the process again by mistake. As a financial investment app, Wallus needs to keep the user updated with where their finances are going at all times.

Fix: Include confirmation message, or perhaps redirect to profile and show balance going up or down to indicate that there has been a change within the system.

50. H4: Consistency and Standards / Severity: 1 / Found by: A, B, C

Task: Complex

Description: On the home screen, "\$3.47" is highlighted in green next to each individual stock chart but without the upwards arrow icon.

Rationale: From my understanding, the stock is rising by the stated dollar value, so for the sake of consistency, why would we not have the same upwards arrow icon that we would use if displaying a percentage? Users might be confused.

Fix: Include upwards arrow icon, or make it more clear why the arrow isn't there by indicating why this concept is different.

51. H7: Flexibility and Efficiency of Use / Severity: 1 / Found by: A

Task: Complex

Description: On the Community screen, a feed is displayed where you can only interact with posts by reacting with emojis. There is not much else functionality.

Rationale: It would be nice if users could click on people's posts and get redirected to a new group that they might want to join. This would make it easy for users to get inspired by the community feed. Otherwise, the community feed seems like more of a way for users to show off rather than motivate and help others.

Fix: Allow posts to be clickable and redirect them to different screens depending on what the post is celebrating. This encourages more user exploration and learning.

52. H3 User control and freedom / Severity: 1 / Found by: C

Task: View my profile

Description: I cannot change my profile picture or name

Rationale: I want to update my picture or name

Fix: Add an edit button

53. H2 Match between system and the real world / Severity: 2 / Found by: C, B

Task: Buy confirmation

Description: I don't understand what "Total withdraw," "Remaining investment," and "Remaining share" mean

Rationale: And the user probably won't understand either

Fix: Rephrase to make the language more easily understandable to a layperson

54. H7 Flexibility and efficiency of use / Severity: 3 / Found by: C

Task: Input amount to sell a stock

Description: At the top I see I have \$126 worth of S&P 500, but if I want to sell it all, I have to use the custom input box

Rationale: Selling all of a stock is likely more common than selling \$5, \$10, or \$50

Fix: Add an amount that automatically inputs all of your stock

55. H3 User control and freedom / Severity: 4 / Found by: C, B

Task: Set my investment goals

Description: I'm being told that TSLA aligns with my investment goals, but where do I set them?

Rationale: I need to set my investment goals

Fix: Add a place to set my investment goals

56. H4 Consistency and standards / Severity: 1 / Found by: C

Task: View my activity

Description: It says I "joined" a company when I bought a stock

Rationale: It is confusing what "joined" means in this case, it sounds like I got employed, but it means I bought the stock

Fix: Rename "joined" to "bought"

57. H10 Help and documentation / Severity: 1 / Found by: C

Task: Selling a stock

Description: When selling a stock, there is an expandable hint for what selling a stock means, but I think everyone knows what selling a stock means

Rationale: Excessive documentation might make it more confusing to a novice user

Fix: Remove the explanation

Participants A and B and D do not know what selling a stock means and think the documentation is necessary. If anything, we need a better explanation.

58. H7 Flexibility and efficiency of use / Severity: 1 / Found by: C

Task: Selecting a decision rationale when confirming a buy/sell

Description: There is a dropdown that opens the list of decision rationale available to be selected, but there is plenty of screen space to have that dropdown open by default and save a click

Rationale: User might be too lazy to input a decision rationale if it takes 2 clicks instead of 1

Fix: Remove the dropdown, keep it always expanded

59. H4 Consistency and standards / Severity: 2 / Found by: C

Task: Selecting a decision rationale when confirming a buy/sell

Description: Radio buttons are used, but I might have multiple reasons to sell a stock, and it seems like in the Figma, I can select multiple as if they are checkboxes

Rationale: Should be square boxes if user can select multiple so users can recognize them as checkboxes

Fix: Convert them to checkboxes

60. H1 Visibility of system status / Severity: 4 / Found by: C  
Task: View my activity  
Description: I can't see how much of a stock I bought or sold in the past  
Rationale: I need to know how much money I put into what in the past  
Fix: Say Sold \$15 of Microsoft
61. H1 Visibility of system status / Severity: 4 / Found by: C, B  
Task: View my portfolio  
Description: I can't see a concise summary of how much of what stock I hold currently, on my profile I can only see what industries and risk levels they are  
Rationale: It's super important for me to know how much of my money is in what currently to make good investment decisions  
Fix: Add pie chart to show what percent and what amount of money I have in what stock
62. H11 Accessible design / Severity: 1 / Found by: D, A, B, C  
Task: View my balance  
Description: If I'm Canadian, seeing a dollar symbol is unclear if it's USD or CAD  
Rationale: To make this app more accessible globally, clarification around currencies should be added  
Fix: Say USD\$15
63. H1 Visibility of system status / Severity: 3 / Found by: C  
Task: View my profile  
Description: The activity list does not pair up buys and sells, so I don't know what ROI I have been getting for each transaction  
Rationale: I want to see how I have been performing in my investments  
Fix: Add a table that lists stock, buy price, sell price, percentage increase, hold time, and ROI, and also add a graph of profits over time
64. H3 User control and freedom / Severity: 2 / Found by: C  
Task: Edit my settings  
Description: There is currently no settings menu where I can adjust whether I share my investment activity with my friends or not  
Rationale: There are some investments I might not want my friends to know I have made  
Fix: Add a settings menu, and default visibility to friends
65. H3 User control and freedom / Severity: 2 / Found by: C  
Task: Edit my settings  
Description: Follow up to the last one, I don't have control over which investment activity for which stocks are shared with my friends  
Rationale: I might want to share most of my investment activity with my friends, but not for this specific stock

Fix: When specifying the investment rationale on the buy/sell screen, also have visibility options of private, friends, or public

66. H7 Flexibility and efficiency of use / Severity: 4 / Found by: C

Task: Add a friend

Description: In the search tab, there's no place to search for people who are not my friends, which means how did I add any friends in the first place

Rationale: I want to add a friend who just joined the app

Fix: Rename the Friends section in the search tab to People and display both friends and people who are not your friends

67. H12 Value alignment and inclusion / Severity: 2 / Found by: C

Task: Chatroom

Description: My friends are harassing me

Rationale: People do that

Fix: Add a report or mute or block option in the chatrooms, and a button to leave the group

68. H12 Value alignment and inclusion / Severity: 3 / Found by: C

Task: Move my investment

Description: My friends in Brave Potatoes are harassing me, so I'm instead going to move my S&P 500 investment to Mango Craze

Rationale: I don't want to sell and rebuy my stock under a different group, because that is unintuitive and might also have transaction fee and tax implications

Fix: Add an option to leave the group while keeping the stock, under a personal account, and an ability to move stock from my personal account to the group account

69. H12 Value alignment and inclusion / Severity: 3 / Found by: C

Task: Chatroom

Description: My friends are giving me terrible investment advice, they are telling me to buy low market cap stocks and then dump on me right after I buy

Rationale: This seems like the most legitimate reason why someone with a lot of money would actually want to use this app

Fix: Kind of an inherent problem I guess, maybe have some sort of ML algorithm monitoring chats for manipulative behavior

70. H1 Visibility of System Status / Severity: 4 / Found by: D

Simple: Accept invitation

Description: Mismatch between investment name listed on notification page and actual investment that the user was invited to.

Rationale: Under Dan's invitation on the Notifications page, it applies that he's inviting you to invest in Apple, when he's actually inviting you to invest in Tesla. This mismatch may cause the user to decline/ignore the invitation, despite it not showing the actual investment.

Fix: Make sure the investment listed under the invitation on the notification page matches the investment the user is being invited to

71. H1 Visibility of System Status / Severity: 3 / Found by: D

Simple

Description: Doubles of notifications

Rationale: In the notifications page, each of the same alert is listed twice. It casts doubts on the systems' ability to properly handle notifications

Fix: List each alert once, remove it once its been viewed/dealt with

72. H2 Match between system and the real world / Severity: 3 / Found by: D

All tasks

Description: A null value is displayed.

Rationale: On the home screen, groups under the "Stock header" have the name "Group Name" instead of their actual name.

Fix: Replace null values with actual group names, or leave it out altogether

73. H2 Match between system and real world / Severity: 3 / Found by: D

Complex

Description: Uncertainty on what clicking "Invest" means

Rationale: When you view the Market page for S&P 500, there's a blue FAB labeled "Invest". User may be confused on what pressing "Invest" actually does in relation to the Stock page you're viewing

Fix: Have a page pop-up that explains what it means to Invest

74. H4 Consistency and Standards / Severity: 1 / Found by: D

Simple

Description: The accept and decline button are the same color.

Rationale: Some systems distinguish between the two different decisions in order to prevent users from misclicking. Associating common decisions with colors helps.

Fix: Change the decline button to red, the accept button to green

75. H4 Consistency and Standards / Severity: 2 / Found by: D

All tasks

Description: Friends and My Groups page is managed under the search bar instead of the community page.

Rationale: Search bars are used with the assumption that users know what kind of information they can search for. A general search (ex: Google) is used to look up information. Having friends/my groups under the same search as stocks and dictionary is confusing and cluttered

Fix: Create a separate page to manage groups/friends, or add it to the community page

76. H4 Consistency and Standards / Severity: 3 / Found by: D

Moderate and Complex

Description: Helpful info boxes not present when buying stock

Rationale: The selling option has info telling you about the action and how it affects you, while the buying option doesn't.

Fix: Create helpful info boxes for buying stock that informs how it could impact the user

77. H5 Error Prevention / Severity: 4 / Found by: D

All tasks

Description: User is able to accept an invitation without having viewed the invitation

Rationale: When you click on the Market Page for Tesla, you can click on the "Accept" and "Decline" buttons from the Friendly Banana group's invitation without viewing the invitation notification. Users could accidentally accept an invitation from a group they don't want to be a part of.

Fix: Remove "Accept and Decline" buttons from Tesla's Market Info page; make sure they only appear when the user is viewing an invitation.

78. H5 Error Prevention / Severity: 4 / Found by: D

Simple and Moderate

Description: Users can accept a group invitation by clicking the "Invest" button

Rationale: When you click on the Stock Page for S&P 500, clicking the "Invest" button causes the user to accept an invitation from the Friendly Bananas group instead. In consequence, the user unexpectedly joins a group that they may not have wanted to join.

Fix: Change the "Invest" FAB from accepting an invitation to its own related action.

79. H5 Error Prevention / Severity: 4 / Found by: D

Simple: Accept invitation

Description: On the confirmation page for accepting an invitation from Friendly Bananas, when you click on "Go to investment group", it directs you to the Brave Potatoes group instead.

Rationale: Although the confirmation page is helpful, having this misdirection may make the user doubt that their acceptance went through.

Fix: Make sure that "Go to investment group" directs you to the page of the group the user just accepted an invitation from.

80. H7 Flexibility and efficiency of use / Severity: 2 / Found by: D

Complex

Description: Users have to click the back arrow on the search page in order to switch between different tabs.

Rationale: It'd be much faster to be able to click on the tab you want to search in, rather than using the back arrow to navigate.

Fix: Make each tab (ex: "My Groups", "Stocks") clickable. Change the back button to just navigate back to the homepage.

81. H7 Flexibility and efficiency of use / Severity: 2 / Found by: D

Moderate

Description: Frequent creators of groups would need to remember which friends they have already added when inviting more people

Rationale: Having to consider friends that are already added slows the user down when inviting people. This could also violate H6.

Fix: Visibly indicate which friends are already a part of the group when choosing amongst your friend list

### 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	2	0	3	5	<b>10</b>
H2: Match Sys & World	0	2	2	2	0	<b>6</b>
H3: User Control	0	2	3	2	1	<b>8</b>
H4: Consistency & Standards	0	8	4	1	0	<b>13</b>
H5: Error Prevention	0	0	0	3	4	<b>7</b>
H6: Recognition not Recall	0	0	1	0	1	<b>2</b>
H7: Efficiency of Use	0	2	3	2	2	<b>9</b>
H8: Minimalist Design	0	4	2	0	0	<b>6</b>
H9: Help Users with Errors	0	0	1	0	0	<b>1</b>
H10: Help & Documentation	0	1	1	6	2	<b>10</b>
H11: Accessible	0	3	1	1	0	<b>5</b>
H12: Value Alignment & Inclusion	0	0	1	2	1	<b>4</b>
<b>Total Violations by Severity</b>	<b>0</b>	<b>24</b>	<b>19</b>	<b>22</b>	<b>16</b>	<b>81</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)**

**4. Evaluation Statistics (in %)**

<b>Severity / Evaluator</b>	<b>Evaluator A</b>	<b>Evaluator B</b>	<b>Evaluator C</b>	<b>Evaluator D</b>
Sev. 0 Ex: Eval A count / total sevs 0 in table #3	0%	0%	0%	0%
Sev. 1 Ex: Eval A count / total sevs 1 in table #3	58.33%	29.17%	37.5%	12.5%
Sev. 2 Ex: Eval A count / total sevs 2 in table #3	21.05%	52.63%	36.84%	31.6%
Sev. 3 Ex: Eval A count / total sevs 3 in table #3	31.82%	50%	31.82%	31.8%
Sev. 4 Ex: Eval A count / total sevs 4 in table #3	31.25%	31.25%	37.5%	50%
<b>Total (sevs. 3 &amp; 4)</b> Ex: Eval A = sum(sev 3 + sev 4 counts) / sum(sev 3 + sev 4 in table #3)	<b>31.58%</b>	<b>42.11%</b>	<b>34.21%</b>	<b>39.47%</b>
<b>Total (all severity levels)</b> Ex: Eval A total sev count / total sevs (green cell) in table #3	<b>37.04%</b>	<b>40.74%</b>	<b>35.80%</b>	<b>29.6%</b>

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

## 5. Summary Recommendations

Overall, amazing work! Our main concern with Wallus is learnability, especially since Wallus sets investment rookies as its target audience. A couple of us, as evaluators, identify as investment rookies ourselves, so it was really interesting evaluating an app that aims to cater towards our needs. We found that some of us failed to understand the investment terms and phrases that frequently pop up across various screens. This could be confusing to investment rookies, and we recommend that future updates to the app should aid users in understanding investment jargon. Otherwise, users might fall back into your problem domain of being confused and afraid of learning how to invest.

We also have advice for the community feature on the app. We agreed that this is one of the features that could differentiate this app from other ones on the market, but the community feature on this prototype lacks the personalization. The only thing that makes it a “community” is the chat room. Other than that, it’s a pretty basic report for the stock that users could otherwise find online. We recommend exploring ways to make the community page feel much more like an actual community. You could make the chatroom more prominent, or allow for people in the community group to post reactions to the articles they are reading, or include training videos that people in the group can use to watch and learn together. Either way, we recommend continuing to expand how you are implementing this community feature of the app because we believe there are some fun ways you can make it more personalized and useful to each user.

It also seems difficult for users to have an accurate and concise grasp of what their investment situation currently is. We recommend revising the graphs to have proper axis labels, showing dollar amounts in private purchase activity, being able to see open/closed positions and realized/unrealized P&L and ROI, and a pie chart overview of overall portfolio allocation.

Lastly, we recommend that you make the investment goals of the user more visible. Provide guidance on how the information presented in the app can be used to achieve their goals. For example, you could recommend certain terms/concepts to look up based on their goals, or expand the Wallus tips to explain why a certain investment doesn’t fit into their goals.

### **Severity Ratings**

- 0 - not 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**

- Words, actions, and UI elements should be consistent across the entire platform
- Follow platform and industry conventions

### **H5: Error Prevention**

- Minimize error-prone conditions
- Remove memory burdens, support undoing, and warn your users when necessary

### **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, keyboard shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

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

- No irrelevant information. Focus on the essentials.

### **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

### **H11: Accessible**

- Users can interact with the system using alternative input methods.
- Content is legible with distinguishable contrast and text size.
- Key information is upfront and not nested for screen readers.

- Purely visual or auditory content has text-based alternatives for users with low vision and low hearing.

**H12: Value Alignment and Inclusion**

- The design should encode values that users can understand and relate to.
- It should make a diverse group of users feel included and respected.
- The design should prevent the reproduction of pre-existing inequities and not create additional burdens for members of disadvantaged populations.