

Heuristic Evaluation of [memento]

1. Problem/Prototype Description

We evaluated the medium-fi prototype of Memento, an app that seeks to help users focus on long term aspirations, while also cherishing and reflecting on the memories made along the way.

2. Violations Found

1. H2: Match Between System and Real World /Severity: 3/ Found by A, C /
 - Problem: The “hamburger” icon is used for a user to add a vision when there is also a circular + button on the left hand corner of the screen that isn’t clickable
 - Rationale: The “hamburger” icon is widely known to be used for opening a side bar or navigation drawer, while a + is used to create a new instance of something. Users may be confused why the hamburger icon begins the task flow for creating a new vision and would want to click the +
 - Fix: Do not use the hamburger icon unless creating a side navigation drawer, and make the functionality of that button be a “My Visions” tab or something similar
2. H1: Visibility of System Status/ Severity: 2/ Found by A
 - Problem: There is no confirmation that you have successfully saved a vision
 - Rationale: After saving the vision, the screen closes out and the user sees the vision added to the bottom with an edit button. There may be confusion on whether further action is required to create the vision, resulting on the user clicking the “edit” button when they do not intend to
 - Fix: After clicking “save”, there can be a pop up window that says “vision saved successfully!” as confirmation
3. H2: Match Between System and Real World / Severity: 3 /Found by A
 - Problem (related to problem 4): “pencil” icon for a vision brings user to a page to add mementos related to that vision
 - Rationale: The “pencil” icon is widely used to edit the item it is associated with (as pencils are erasable in the real world). When the user clicks on the icon, they may expect to be able to edit the current vision, instead of being brought to a page where they add new things (in this case, mementos)

- Fix: Use the pencil icon to edit the current vision, and add a new icon next to it (maybe a specific logo for a memento or a simple + to indicate adding a memento)
4. H3: User Control and Freedom / Severity: 3 / Found by A, B, C
 - Problem: no option to edit an existing vision
 - Rationale: If the user made a typo or changed their mind about the color in a vision, or even wanted to delete it, there is no option for them to do so currently
 - Fix: same fix as problem 3 - make the pencil icon take the user to an “edit” screen or popup for a vision
 5. H7: Flexibility and Efficiency of Use / Severity: 1 / Found by A
 - Problem: user only has 6 options to choose from for the color of a vision
 - Rationale: If the user ends up having more than 6 visions, the process of creating a new one can get confusing, as they will have more than one vision with the same color
 - Fix: Add an “other” option (in most apps, it’s a rainbow circle that you can click on to see a color picker at the end of your choices) so the user has complete freedom in what color to make their visions
 6. H7: Flexibility and Efficiency of Use / Severity: 2 / Found by A
 - Problem: A vision can have max 20 characters; going over will not allow the vision to be saved (presumably)
 - Rationale: A “vision” is defined as a long-term goal, which can get pretty descriptive. Users may not want to squeeze their goals into 20 characters, so they should have the freedom to do so
 - Fix: allow the vision to be as long as the user wants, and only display the first 20 characters (along with a ...) on the top menu bar if it’s long
 7. H7: Flexibility and Efficiency of Use / Severity: 2 / Found by A
 - Problem: There is no way for users to mark their favorite visions (and first added visions seem to appear on the right)
 - Rationale: A user might want to check back on some visions more than others, or want their most recently accessed vision to appear first (leftmost) and not want to scroll all the way to the end to get to their most recent one
 - Fix: allow the visions to be sorted by most recently edited or accessed on the top bar, and include a “favorite visions” option that will have starred visions appear first on the top bar
 8. H9: Help Users Recover from Errors / Severity: 1 / Found by A,

- Problem: There is no error message that is displayed when trying to add a vision without an associated color or title, just a greyed-out save button
 - Rationale: If the user doesn't know to enter a title and/or color and they try to save but can't, they might not know what they're doing wrong and be confused why they can't complete the task
 - Fix: whenever the user tries to hit "save" without adding a title or color, display an error message in red text saying what they forgot to add
9. H10: Help and Documentation / Severity: 3 / Found by A, B, C
- Problem: The "reflections" tab appears without explanation once a user adds a vision
 - Rationale: The user may not know what a reflection is and try to click on it and immediately after they've created a vision, which is not the intention
 - Fix: Either add an explanation for the reflections tab in the tutorial and mention it's used later, or have the tab greyed out so that the user is not confused why it isn't clickable yet
10. H4: Consistency and Standards / Severity: 1 / Found by A,
- Problem: on the mementos gallery page, where all the visions are displayed on the top bar, the text of the visions is grey. In every other aspect of the app, each of the visions is associated with a specific color
 - Rationale: The user may expect everything associated with a particular vision to be a specific color, because that is the way it is in every other aspect of the app. They may miss that all their visions are at the top bar because they were expecting them to be a specific color
 - Fix: have the text of each vision be the corresponding color on the top bar on the mementos gallery page
11. H6: Recognition Rather Than Recall / Severity: 3 / Found by A, C
- Problem: definitions of "vision" and "memento" are only provided in the tutorial
 - Rationale: "vision" and "memento" are terms specific to this application, but their definitions are only provided in a tutorial that users only see once. If a user is coming back to the app after awhile or is still getting used to using it, they might still be confused on the definitions when they are creating a vision
 - Fix: add a help icon (maybe a ?) at the top corner of the create pages for vision and memento that provide definitions and examples
12. H4: Consistency and Standards / Severity: 2 / Found by A, B, C
- Problem: the icon for the dropdown menu to select a different associated vision for the "add a memento" page is the up arrow, not the down arrow

- Rationale: it is convention (that you use on other aspects of your app) that the up arrow collapses the current element, down arrow show a dropdown (or expands it), left arrow goes back, and right arrow goes forward. When the user clicks on the up arrow, they may expect the memento element to collapse
- Fix: Make the arrow a down arrow

13. H4: Consistency and Standards / Severity: 2 / Found by A

- Problem: To add more than one photo to a memento, the user has to click on the photo icon, (presumably) select a single photo from their camera roll or take one (this should be made more clear too!), finish adding it, then click on the photo icon again to repeat the process, then add a caption by clicking the text icon separately. They cannot add more than one photo at a time.
- Most photo sharing apps (Instagram, PhotoCircle, Fliker) allow the user to select more than one photo at a time when they are brought to their camera roll, then drag and drop the individual photos to their desired location afterwards. Users will likely be used to this format and will be confused why they can't select more than one photo at a time.
- Fix: allow functionality to add more than one photo at a time with one click on the camera icon, then allow drag-and-drop repositioning of elements within a memento

14. H10: Help and Documentation / Severity: 3 / Found by A, B

- Problem: It is unclear from the tutorial that more than one media element can be added at a time or that the user can switch which vision is associated with the memento
- Rationale: From the way most photo sharing apps work, one click on an icon is usually one element added. Selecting multiple elements is usually done by dragging or clicking across multiple photos and adding associated captions afterwards. If this app deviates from this (see problem 13), the tutorial should make it clear
- Fix: have the tutorial walk the user through the process of creating a memento, instead of leaving a first-time user to figure it out all by themselves

15. H7: Flexibility and Efficiency of Use / Severity: 3 / Found by A, C

- Problem: the "cancel" and "delete" buttons on the "create" pages will discard the memento the user is working on
- Rationale: the user may want to come back to a memento later or not post their current memento to their gallery page yet, and may accidentally delete their progress trying to do so with the cancel button

- Fix: add a “save as draft” option on the “create” pages for vision, memento, and reflection

16. H1: Visibility of System Status / Severity: 2 / Found by A

- Problem: When adding a memento, the default text when the user first sees the screen says “oops, it’s empty”
- Rationale: it isn’t a mistake for the user to go on the “create a memento” page for the first time and nothing is there (because they haven’t tried to add anything yet). The user may be discouraged and think that they have made a mistake when they did not
- Fix: make the “create a memento” page box say “add an element to get started!” and only display the error message if the user tries to save an empty memento

17. H8: Aesthetic and Minimalist Design / Severity: 1 / Found by A, C

- Problem: On the switching button between “all” and “faves”, the font size is too small and the unselected option’s text blends into the background
- Rationale: For someone with terrible eyesight like me (or people just looking at the screen briefly), it can be hard to read smaller fonts, especially if there is little contrast between the text and background, making it easy to miss things
- Fix: increase the font on the switch button and pick a different text/background color that will increase the contrast between the two

18. H4: Consistency and Standards / Severity: 3 / Found by A, C, B

- Problem: There is an up ^ button on the colored bar at the top of a single memento
- Rationale: From the prototype, I’m not sure what this button is supposed to do because it isn’t linked anywhere. However, from the “add a memento” page, that button served the purpose of allowing the user to select a different vision to associate the memento with. For consistency’s sake, if the button did the same thing here, it would not make much sense to have it without an edit page because it’s unlikely that a user would want to assign an entire memento to a new vision after they created it. Either way, it’s unclear what this button is supposed to do at first glance.
- Fix: Whatever the purpose is of this button, it should be consistent and clear throughout. Otherwise, if it’s not necessary, it should be removed.

19. H10: Help and Documentation / Severity: 3 / Found by A,C

- Problem: All the jargon and information needed to use the app is presented in one lengthy tutorial that appears only once when the user first starts using the app.

- Rationale: Because usage of this app heavily relies on what the terms “vision” and “memento” mean (and how they relate to each other), a user returning to the app might want a way to quickly search what a term means or how to complete a task
- Fix: add a *searchable* help menu that can be accessed with a simple icon at the top of every page, which can also include the option to walk through the tutorial again

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

- Problem: no option to edit a memento once created, or to switch the order that mementos are displayed after adding them
- Rationale: a user may forget to add an item to a memento at first, or want to see a particular memento first on their gallery to get inspired. They currently don’t have the freedom to choose to do so
- Fix: have an edit option for individual mementos, which bring the user to a screen similar to the one where they created the memento so they can add or remove media elements

21. H8: Aesthetic and Minimalist Design / Severity: 1 / Found by A

- Task 2a
- Problem: There is no way for a user to view a single memento by itself, without all the surrounding mementos and menu bars and logos around it.
- Rationale: Since the app’s purpose is self-reflection via these mementos, it would be nice to provide a distraction-free way, without unnecessary elements cluttering their view, to look at a single memento and reflect. Users might get distracted or their mind might wander from looking at other mementos.
- Fix: have the grey box for a single memento be clickable, so that it takes the user to a screen with only the contents of that memento (and have a back button so they can go back to the original gallery view as well)

22. H8: Aesthetic and Minimalist Design / Severity: 1 / Found by A

- Problem: The heart emoji for a liked photo seems out of place
- Rationale: A sparkly heart emoji is added next to a memento that is “added to favorites” by the user. The color palettes and themes of this app are muted and include colors that don’t really pop out or are very saturated. The cartoon, hot pink emoji is somewhat jarring and out of place
- Fix: make the heart a more muted red color (and not an emoji)

23. H7: Flexibility and Efficiency of Use / Severity: 4 / Found by A,B

- Problem: the question a user gets is always randomly generated, and they can only click to get a different random question

- Rationale: a user might have a question they want to go back to multiple times to reflect on, but they might not be able to get to it without clicking multiple times on the button.
- Fix: have a drop-down menu of past questions, with an option to get a random one if the user desires (or alternatively, include the option for the user to enter their own reflection question for greatest freedom)

24. H5: Error Prevention / Severity: 2 / Found by A

- Problem: If the user clicks “I want a new question”, their current progress is erased if they have any text or voice recording
- Rationale: The user may just want to switch the question they’re answering but keep the text that they’ve written, or they might simply not realize that switching a question will erase all progress they’ve made
- Fix: add a confirmation popup when the user switches a question that asks them if they’re sure, and give them an option to carry over their text to the next question or save the old reflection as a draft, or delete everything

25. H4: Consistency and Standards / Severity: 3 / Found by A,B

- Problem: All reflections are navy blue, and there is not clear whether these are / can be associated with a particular vision
- Rationale: Throughout the app, grouping of elements associated with a user’s goals is done by color. Because a user adds a reflection via the memento gallery page, it seems natural to assume that the reflection is linked to that particular vision. However, it appears that reflections are not related to any particular vision
- Fix: give the user the option to associate a reflection with a vision (similar to the dropdown menu when adding a memento), or use a “general” category for reflections they don’t want to associate with any particular vision

26. H1: Visibility of System Status / Severity: 1 / Found by C

Scroll bar does not scroll with the user, when looking through the feed for a particular vision. (I understand you realize this, but worth pointing out anyway).

Fix: Make the scroll bar reflect the location on the page.

27. H1: Visibility of System Status / Severity: 4 / Found by B, C

The user must maintain a mental note of how much progress they have made for a particular vision or whether a long-term vision/goal is in progress or has been accomplished .

Fix: Give the user a way to track this progress on a vision through the app. Similarly, give the user a way to mark a vision as having been accomplished if they wish to.

28. H2: Match between system and the real world / Severity: 1 / Found by C

Despite the fact that I understand that your app name is Memento, the fact that in the main screen, a big font, blue “MEMENTO” textbox is directly above a horizontal list of the user’s visions, may cause some unnecessary confusion between what is a vision and what is a memento.

Fix: Make it more explicit (with a label) that the horizontal list under the Memento text corresponds to a user’s visions.

29. H3: User control and freedom / Severity: 4 / Found by C

Once a memento/reflection is created, there is no way of deleting which may be frustrating if a user makes a mistake, particularly since they cannot edit these either.

Fix: Give the user a way of deleting mementos/reflections.

30. H5: Error Prevention / Severity: 2 / Found by C

There is no screen that asks the user if they are sure they want to post a memento/reflection, allowing them to double check their inputs.

Fix: Since there is no option to delete or edit a memento/reflection, this seems particularly important as a way of preventing long-lasting mistakes.

31. H7: Flexibility and efficiency of use / Severity: 2 / Found by C

A user has to make one more click than necessary in order to create a vision. They must go to the visions page to add a vision, and only then can they return to the homescreen and see the change reflected.

Fix: I love how you can create a memento or reflection easily with one button. You could also put creating visions in this same button.

32. H7: Flexibility and efficiency of use / Severity: 3 / Found by B, C

In order for the user to navigate visions in the homescreen, a user has to click on visions that they don’t necessarily want to open in order to get closer to the one they want to reach, since there is a lack of horizontal scrolling in the visions (there is some horizontal scrolling when in the “All” category, but it’s clunky and seems accidental).

Fix: Add horizontal scrolling for more ease of use.

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

There is no settings menu to customize a user's experience or general app management, especially for accessibility (i.e. if a user can't see certain colors for visions).

Fix: Add settings menu.

34. H8: Aesthetic and minimalist design / Severity: 3 / Found by C

The visions page seems a bit redundant. There seem to be three things you can do on the visions screen: see visions, add a vision, and edit a vision. Given the fact that one of these (see visions) can already be done on the homescreen, the vision screen only does two unique things.

Fix: I think you don't need a visions screen and can incorporate editing a vision and adding a vision onto the homescreen for a more consolidated and less scattered/redundant design.

35. H8: Aesthetic and minimalist design / Severity: 1 / Found by C

Some elements are not exactly aligned with others in contexts where they should be (e.g. reflections in Reflections screen, mementos in More Friends & Family)

Fix: Align all necessary elements.

36. H8: Aesthetic and minimalist design / Severity: 1 / Found by C

The font on the mementos are black 15 pt, whereas for the reflection text you opted for bold black 15 pt for the prompt, and gray 14pt for the response. Although I can understand the bold for making the prompt stand out, the gray 14pt creates a confusing inconsistency in the design.

Fix: Make reflection response color and size consistent with memento font i.e. black 15pt.

37. H8: Aesthetic and minimalist design / Severity: 1 / Found by B, C

Saturated color of the scrollbar draws unnecessary attention to it for the visions with color (e.g. bright purple for Be Healthy).

Fix: Make scrollbar color less saturated, or grayscale like it is in the Reflections and All screen.

38. H7: Flexibility and Efficiency of Use / Severity: 2 / Found by B

Top bar with visions can become difficult to navigate over time. If the user has 20 visions at a given time, scrolling back and forth to find each vision could become difficult.

Fix: Have only active visions be displayed in the top bar. Give users a field to mark if a vision is active or inactive in the 'edit a vision' page.

39.H4: Consistency and Standards / Severity: 3 / Found by B

Having "Reflections" in the top bar can get a little confusing if users think it's the name of another vision.

Fix: Have a single toggle bar to switch between 'Reflections' and 'Visions' and have specific menu items or navbars for each.

40.H4: Consistency and Standards / Severity: 1 / Found by B

The delete buttons for photo mementos are stylized differently from those of text mementos but it doesn't seem purposeful.

Fix: Add a shadow for the text delete buttons and pick a neutral color for the background to make them uniform.

41. H6: Recognition not Recall / Severity: 3 / Found by B

Reflections need to be entirely recalled and written/recorded by the user without any prompting. The page doesn't set users up enough to answer broad questions.

Fix: Include brief snippets of mementos that were created in a specific time frame/auto-generated text prompts to nudge users in the right direction.

42.H2: Match between System and World / Severity: 2 / Found by B

On the 'main' pages for each vision, multiple consecutive text snippets on the same date would appear as a single piece of text or consecutive paragraphs of a single entry which is not representative of multiple independent thoughts.

Fix: Keep the enclosing text widget boxes used in the 'add a memento' section in these pages as well.

43.H1: Visibility of System Status / Severity: 2 / Found by B

The circular "+" button on the page that contains 'All' mementos leads to two options: "memento" and "reflection" Clicking on "memento" would lead to an "add memento" screen. However, it is unclear as to how the vision that the memento belongs to is being defined at this stage.

Fix: Have a drop down menu to specify which vision the memento is being added to at all stages.

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

As mementos collect, it can become harder to locate a specific memory or photo, given the chronological scrolling format currently included in the prototype.

Fix: Include a 'filter by time' feature to help revisit specific mementos more easily.

45.H4: Consistency and Standards / Severity: 1 / Found by B

The "I want a different question" and "cancel" links seem to be the only links in the whole app while every other functional component seems to be a button.

Fix: Make "I want a different question" and "cancel" buttons in place of just the unformatted links.

46.H7: Flexibility and Efficiency of Use / Severity: 2 / Found by B

If the user is using colors to categorize by type (ex: hobbies, work, health etc), there's no way to view visions of a similar type in one place.

Fix: Add support to filter by color.

47.H4: Consistency and Standards / Severity: 1 / Found by B

There seems to be inconsistent capitalisation of words throughout the app. For instance, on the "add a memento" page, one label reads "add a memento" while another reads "Add to Favorites". Both of these serve similar purposes but are capitalised differently.

Fix: Convert all labels in the app to sentence case for consistency and readability.

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

The toggle button between 'all' and 'faves' seems out of place for two reasons: a) "Favorites" being shortened to "faves" seems abrupt and b) it is aligned to the right despite the rest of the block space being unoccupied.

Fix: Perhaps use the heart icon instead of "faves" and shift the toggle button to the middle of the page.

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

The "reflect" page seems to only include the option to record a voice note. Some people might want the option to record several independent voice notes or keep updating reflections with additional voice notes.

Fix: Allow users to include multiple voice notes through a single "record" button, having each one appear as a separate audio snippet in the memento.

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		1	3		1	5
H2: Match Sys & World		1	1	2		4
H3: User Control				2	1	3
H4: Consistency & Standards		4	2	3		9
H5: Error Prevention			2			2
H6: Recognition not Recall				2		2
H7: Efficiency of Use		1	5	4	2	12
H8: Minimalist Design		7		1		8
H9: Help Users with Errors		1				1
H10: Help & Documentation				3		3
Total Violations by Severity						49

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

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C
Sev. 0	0	0	0
Sev. 1	6/15=0.4	5/15=0.33	6/15 =0.4
Sev. 2	7/13=0.54	4/13=0.31	3/13 = 0.23
Sev. 3	11/17=0.65	11/17=0.65	10/17 = 0.58
Sev. 4	1/4=0.25	2/4=0.5	3/4 = .75
Total (sevs. 3 & 4)	12/21=0.57	13/21=0.62	13/21 = .62
Total (all severity levels)	25/49=0.51	22/49=0.49	22/49 = 0.49

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

5. Summary Recommendations

First of all, great job on your Medium-Fi prototype!

One high-level suggestion that we have is regarding the visions screen. As we mentioned before, we think the app does not need it. Given that you can view your visions on the homescreen, it seems unnecessary to have to navigate to an entirely different screen to edit these, or create a new one, since this could easily be added to the homescreen. For instance, if someone is on the home screen and wants to create a new vision, their first intuition may be to click the (+) button at the bottom only to find that you can only create reflections and mementos there. Then, because the hamburger icon on top doesn't clearly indicate that it takes you to your visions (rather than a drop down with things like settings, etc.), they may have to start investigating by, for example, scrolling through the horizontal visions list to see if there is a (+) there.

Furthermore, conceptually, it feels like there's a bit of a mismatch between your complex task and the task flow. The task indicates that there's an explicit way to keep track of visions and the *accomplishment* of those visions but as a user, we couldn't tangibly experience the accomplishment part of that. Moreover, as mementos and visions build, it seems like the app could become hard to navigate, with mementos getting lost amongst others. It would be nice to see the mementos in the order of some metric of *progress* instead of chronology. The idea of a time-line that was proposed during studio could be an extremely interesting addition to your design. The app should be whatever the user wants it to be for them, and a smooth way to make this possible would be incredible - we're thinking maybe drag-and-drop or something along those lines! Additionally, edit buttons for all three task flows (creating a

vision, memento, and reflection) would be very useful, because people change their minds or make typos a lot!

Additionally, we would try to keep the app as internally consistent (and consistent with existing photo-sharing applications) as possible. This is because the usage relies heavily on the user's understanding of "visions", "mementos", and "reflections" and how they relate to each other, so it is important that nothing confuses the user or creates doubts in terms of what each of the three words mean and what the different components do. A lot of those changes are explained above in H4 violations. Furthermore, we would try to reduce the amount of information users have to memorize from the tutorial as possible (the H6 violation). The only explanation of what the jargon means is in the one-time tutorial, and subtle reminders or refreshers can come in many ways! In addition to the suggestions made above, we would consider adding short descriptions of what the user should create in grey template boxes on the create pages (such as on the "create memento" page before a user adds any media elements).

Overall, good job! Can't wait to try the hi-fi prototype.

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