Heuristic Evaluation of CanTour

1. Problem

CanTour is a mobile app tool for creating a personalized and curated museum tour based on the user's art preferences and interests.

2. Violations Found

[H2-2: Visibility of Status] [Severity 1][Found by C]
Progress bar does not make it clear how many questions are left in the survey process, leaving the user in the dark. A quick fix would to be just have question/total questions at the bottom, like if you're on question 5/15.

[H2-2: Match System and Real World] [Severity 1][Found by C]
 The "Unhappy with your results?" prompt may be somewhat negative (in a real world setting) and also doesn't explicitly encourage to take the test again to explore different options. Could easily change to "Try again for different tours" or something less negative.

[H2-2: Visibility of Status] [Severity 1][Found by C]
User doesn't know location when the painting is up on the screen, perhaps the screen around the painting could be transparent.

[H2-2: Visibility of Status] [Severity 1][Found by A, B, C]
The user isn't aware of how much of the tour is remaining, a percent bar that increases as you move along the path would be an easy fix. Maybe you could change the color of the icon that marks an item of interest on the map once it has been visited. For example, the info icon (the i in a circle) could change from blue to orange once it has been visited.

[H2-2: Visibility of Status] [Severity 1][Found by C]
 The title and artist appear above the painting giving it the focus, but the painting seems to be the focus of the screen with information about it. Consider moving the information text below the painting, or have a an (i) button popup.

[H2-2: Visibility of Status] [Severity 1][Found by C]
Unused screen real-estate at bottom of painting screen, could fill this space with info, or could center the painting better to alleviate this.

[H2-3 User control and freedom] [Severity 2] [Found by A]
Even though there is a "back to results" button in the top left of the screen, as a user I wanted to be able to return to some kind of homescreen and feel like I could totally start over or exit from the experience. This could be resolved by creating a home screen with pre-created tours listed in addition to the option to take the quiz.

[H2-3: User Control and Freedom] [Severity 2][Found by A, C]
There isn't a way for the user to quit the quiz if they accidentally enter it, easy fix with a quit/return button.

[H2-3 User control and freedom] [Severity 2] [Found by A]
Again, I know there are limits with the proto io platform, but I think you should consider having the option to leave the tour and then go back to where you left off. If a "pause" option is not possible, maybe having a warning message that leaving the tour will remove any indicators of progress.

[H2-3: User Control & Freedom] [Severity: 2] [Found by: B]
The binary nature of the quiz responses doesn't allow for maximum user flexibility – a third, neutral option would give users a feeling of agency that the current binary system takes from them. Comparing the system to the real world, most people wouldn't have a strong opinion for or against EVERY piece. They would have strong opinions on some pieces and neutral opinions on others.
Proposed Solution: Adding a third, neutral button in the middle somewhere.

[H2-3 User control and freedom] [Severity 3] [Found by A, B]
When you create more fully fleshed out quizzes, it would make sense to let users "go back" in case they accidentally like/dislike an image. As of right now, there is no way to recover from an error except to re-do the quiz from the start.

[H2-3 User control and freedom] [Severity 3] [Found by A, B]
I know that the GPS map is limited because of proto io limitations, so I'm not sure if this is already a part of your plan, but you might want to consider adding the ability to interact with the map normally (zooming in and out, looking ahead) instead of just illuminating the user's current location.

[H2-4: Consistency & Standards] [Severity 1][Found by C]
The bubbles don't always appear in the same way, i.e. some to the left some to the right some to the top. A fix would be to change the way the info is displayed, like the recommendation for 16, or have the bubbles all appear in the same direction.

[H2-4: Consistency & Standards] [Severity 1][Found by C]
The info bubbles don't follow the same trend of (i) button for more information as seen in the previous tasks. Consider making these info spots the (i) button as well.

[H2-4 Consistency and standards] [Severity 1] [Found by A]
The teal color used for the "you are here" icon (the pointer with a circle in the middle) seems strange to me. I think that most platforms use either dark blue or red. For example, I strongly associate the locator with google maps, who uses red. I think users will be more comfortable if the color follows popular conventions.

[H2-4: Consistency & Standards] [Severity 2][Found by C]
 The first floor map/second floor map buttons replace each other — would make sense if the back button took me to the previous floor or something, the forward arrow makes me intuitively want to hit

the back arrow to return to what I was just at but instead I'm taken to the results. Consider removing the forward arrow on the floor map buttons and make it a toggle.

[H2-4 Consistency and Standards] [Severity 2] [Found by A]
The orange text on the quiz results screen makes me think I can click it, the same way blue text usually marks links to other pages. I think you use orange to mark clickable items previously (the X on the swipe quiz). I would be less likely to try to interact with the tour titles if they were just black.

[H2-5: Error Prevention] [Severity 1][Found by C]
 All the begin tour buttons are the same which is aesthetically okay, but one is recommended and others an auxiliary choice, so maybe they should be distinguished. As it is, one could make a mistake and choose the wrong tour. A fix would to make the other "begin tour" buttons a lighter shade of the current color or smaller in comparison to the recommended tour's button.

[H2-5: Error Prevention] [Severity 2][Found by A, B, C]
 There isn't a way for the user to rescind an answer to the quiz after making an error, this is an easy fix with an undo button to prevent this.

[H2-5: Error Prevention] [Severity: 2] [Found by: B]
The information circles on the map are not precise enough to indicate to a user exactly where the painting is and how to find it. It would increase task completion time if a user had to spend a few minutes every time looking at each painting in the surrounding area to find the one the app is directing them to.
Proposed Solution: Offer a zoomed in view of the map so that the user has the option to get a more precise idea of where the information bubble directs the user. Some other ways to help the user locate the picture would be a compass that points to the spot or an image of the wall with the specific painting highlighted (though these two ideas would take too long to implement this quarter).

[H2-5: Error Prevention] [Severity: 2] [Found by: B]
The fact that the user has to manually switch to a second floor map is prone to create confusion because the app is supposed to track the location of the user. In the case that the user misses the small button in the top right corner, they might be looking at the first floor information while actually walking on the second floor. Some users might not be using the app the entire time, which means that its inability to truly locate the user is not ideal.
Proposed Solution: The app should locate people based on which floor they're on, which Andres mentioned is possible in our last studio. If that isn't the case, another way to mimic this tracking would be to change the floors whenever someone spent >6 seconds in a stairwell or elevator. Or, the app could send a popup indicating to the user that they ought to change floors if they've been in a stairwell or elevator.

[H2-6 Recognition rather than recall] [Severity 2] [Found by A]
On the first page of your quiz you include a "swipe the image.." message at the top to teach users how to interact with the quiz. As you have described in your presentations, making sure the tinder-esque interaction is universally understood is very important to you, and this is something you have been playing around with. I think it might be more effective if you also included a "Confused?" button/icon

on the quiz page with a quick description of how to swipe to like/dislike images. That way users don't have to remember the "swipe" message from the first screen.

[H2-7: Efficiency of Use] [Severity 1][Found by A, C]
Not clear if the map always follows the user, or one can pan to see all the exhibits in the route. But, if it always follows, one wouldn't be able to look ahead at some exhibits. Maybe a button to pan all the way out to view all information buttons and exhibits would be helpful.

[H2-7: Efficiency of Use] [Severity 2][Found by A, C]
Current display only shows recommended tours, what if you wanted to see all possibilities? Someone who has used the app multiple times would probably not want to do the quiz every time (expert user). This could be fixed with a button on the screen to show all tours.

[H2-7 Flexibility and efficiency of use] [Severity 3] [Found by A, B]
Consider adding the option to "skip quiz" and just see a list of pre-created tours. There may be users with significant art experience who do know what genre they would be most interested in seeing, but still want to use your interactive tour guide.

[H2-7: Efficiency of Use] [Severity: 3] [Found by: B]
When the user embarks on a tour, they do not have the option to respond to the paintings that they are seeing. This might be something the user expects because of the structure of the quiz, and is also a treasure trove of information. Though I'm not sure how you intend to match people to different tours based on their quiz responses, this seems like a good place to start.
Proposed Solution: Add thumbs up and thumbs down buttons to the paintings on the tour. The user can indicate how much they liked or enjoyed a certain painting, and that data can be used to judge the success rate of your first task. In this case, a neutral button isn't needed because the user will choose not to press any of the thumbs if they feel neutral about it. Finally, if this information could alter someone's tour in any way that would be truly personalized.

[H2-8: Aesthetic and minimalist design] [Severity: 1] [Found by: A, B]
The "Results screen has too much text on it, and lacks visually stimulating elements. The blocks of text are confusing and do not give a clear indication of what to do.
Proposed Solution: Show the main recommended tour and include a picture. The block of text describing the tour in detail should be available via a small information button that is used elsewhere in the application. The additional tours should be available by scrolling downwards or hitting a "try other tours" button but should not have as much screen area or prominence as the first choice recommendation.

[H2-8 Aesthetic and minimalist design] [Severity 1] [Found by A]
The text color and background image for the home screen make it difficult to read the text on the screen. The white font over the grey image is hard to read, and the image of the thinker in the background is too opaque/greyed out to see it clearly. Consider changing the background image or making a text box over the image to make the text stand out more.

[H2-8: Minimalist Design] [Severity 1][Found by A, B, C]

Contains a lot of information on one screen, could be overwhel
ming at first glance — not very minimalist. If the purpose of this screen is just to show the test results, maybe hide this info/shorten it — could contain this info in an (i) info button that appear in other places in the app.

[H2-8: Minimalist Design] [Severity 1][Found by C]
Info spot bubble pop-up gets in the way of the painting, cannot see when it is up. Maybe have information text appear below the painting when the circle is touched.

[H2-8: Minimalist Design] [Severity 1][Found by C]
Retake quiz button is largest on screen when begin tour seems to be the main button you will be using, consider making this less of a focus in terms of real estate and size. Perhaps a smaller button?

[H2-8: Minimalist Design] [Severity 1][Found by C]
 Color scheme as it is isn't complementary — the turquoise and blue don't have similar red values and don't match well. Can be fixed with rgb color picker and some easy reading on color theory.

[H2-8 Aesthetic and minimalist design] [Severity 2] [Found by A]
The centered text on the quiz results screen is visually confusing. Left justifying the text would make it more clear that the screen features a list of recommended tours.

[H2-10: Help & Documentation] [Severity: 1] [Found by: B]
The orange circles on the artwork are not entirely clear, and for users who are not as technically inclined, a short tutorial would be useful. First time users could benefit from a 2-3 click tutorial, and it wouldn't be overly bothersome for someone who gets it without prompting.
Proposed Solution: The first time the user clicks on a blue information bubble that opens a painting, they should be instructed on how to use the orange circles to garner more information. After the first time, it need not be shown. Perhaps if a user never clicks on an orange circle after the first tutorial, midway through the tour it could remind them again just in case they had missed it the first time. Again this would also help with the data collection because it would increase interaction with the screen, which means more up and down votes.

[H2-10: Documentation] [Severity 2][Found by C]
"Swipe the image" is not entirely obvious to swipe left or right (similar to existing apps but can you assume the user has used one?) — could easily mess up the first one in trying to figure out what exactly to do. Perhaps the prompt at the top that goes away after the first swipe could say something to make it more clear, i.e. swipe right for "like".

[H2-10 Documentation] [Severity 2][Found by B, C]
User doesn't immediately know to touch the circles on the painting. Consider a flyby or quick text popup that appears the first time one opens a painting screen that says "touch circles for more information".

[H2-10: Help & Documentation] [Severity: 2] [Found by: B]

The tour descriptions are not specific to the tour, but to exhibits. The descriptions detail the 300 pieces that are in the exhibits from Asia and the 5,000 pieces in the Stanford collection. These pieces of information are confusing because it could lead a user to believe that the tour goes through 300 or 5,000 pieces.

Proposed Solution: Include key information like how long the tour is estimated to take and how many pieces the tour will look at. By giving users a concrete understanding of the tour, it will give them more confidence in choosing one over the other. Or, if the tour theme is selected by the quiz results, then perhaps the app can ask the user how long of a tour they want to have.

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
[H2-1: Visibility of Status]						
[H2-2: Match Sys & World]		6				**6**
[H2-3: User Control]			4	2		**6**
[H2-4: Consistency]		3	2			**5**
[H2-5: Error Prevention]		1	3			**4**
[H2-6: Recognition not Recall]			1			**1**
[H2-7: Efficiency of Use]		1	1	2		**4**
[H2-8: Minimalist Design]		6	1			**7**
[H2-9: Help Users with Errors]						
[H2-10: Documentation]		1	3			**4**
Total Violations by Severity		**18**	**15**	**4**		**37**
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	4	15
sev. 2	8	6	5
sev. 3	3	4	0
sev. 4	0	0	0
total (sev. 3 & 4)	3	4	0
total (all severity levels)	17	14	20

5. Summary Recommendations

Overall, the CanTour tour recommendation process is very clear and simple. Quiz → tour recommendation → mapped tour makes a lot of sense and doesn't leave a lot of room for fluff. Because it is so bare bones, the majority of my recommendations are centered around adding features and messages to further ease the user through the process, taking less tech-savvy users into account, and allowing for further customization of the process. This covers violations H2-3. For example, we recommend adding a button to backtrack during the quiz, skip the quiz entirely for repeat/expert users, as well as pause/exit options for the tour. The next two highest heuristic of concern are H2-2 and H2-8.

In terms of visual aesthetic and clarity, we had several concerns about the use of color and visual hierarchy, especially on the quiz results screen. You need to be careful about matching the colors to certain functions across the app. For example, maybe making all clickable text the same color. We would look into some color theory stuff because the two blue hues don't go well with each other as it is. The other things are more nuanced regarding button size, screen real estate, info text, etc. By this We mean that there are some careful considerations to make with subtleties in what text and size may convey. For example, a bigger, bolder button for a more central feature. Applying these recommendations to the quiz results screen would hopefully emphasize the number one recommended tour over the other options.

As it is though, it looks good. There are some things mentioned that were not obvious if you were going to implement in the future, so we mentioned them anyways — be sure to look at those. Specifically, right now it feels like the UI doesn't give a lot to someone who has used it before or someone who is more of a "power user" with no ways to skip anything or see everything at once. A major usability feature that you should consider adding is a like/dislike option on the individual painting screens during a tour. This would increase interaction between the user and the app, yield data that helps you match users with tours, and add a social element if users could see others' responses. Other than these things, we thought the prototype was really great and well executed and only some minor tweaks are needed.

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

[H2-1: Visibility of System Status]
- keep users informed about what is going on

[H2-2: Match Between System & Real World]
- speak the users' language
- follow real world conventions

[H2-3: User Control & Freedom]
- "exits" for mistaken choices, undo, redo
- don't force down fixed paths

[H2-4: Consistency & Standards]

[H2-5: Error Prevention]

[H2-6: Recognition Rather Than Recall]
- make objects, actions, options, & directions visible or easily retrievable

[H2-7: Flexibility & Efficiency of Use]
- accelerators for experts (e.g., gestures, kb shortcuts)
- allow users to tailor frequent actions (e.g., macros)

[H2-8: Aesthetic & Minimalist Design]
- no irrelevant information in dialogues

[H2-9: Help Users Recognize, Diagnose, & Recover from Errors]
- error messages in plain language
- precisely indicate the problem
- constructively suggest a solution

[H2-10: Help & Documentation]
- easy to search
- focused on the user's task
- list concrete steps to carry out
- not too large