Heuristic Evaluation of Allegro

1. Problem

Allegro is a mobile app designed for portable music composition; its composition, transcription, and export tools allow musicians to jot down new ideas or arrange music without the need for traditional pen-and-paper or desktop software.

2. Violations Found

1. **[H2-3 User Control and Freedom] [Severity 3] [Found by: A]**
   There's no way for user to remove sharps or flats when inputting key signature (ex. If I wanted G Major but accidentally added 2 sharps instead). Resolve by adding an 'Undo last sharp/flat' button.

2. *[H2-5 Error Prevention] [Severity 2] [Found by: A]*
   Users shouldn't be able to input more than the maximum seven sharps or flats for a key signature or mix sharps and flats and successfully exit out of the key signature screen. Stop button responses on the screen once the max number has been hit and have the other flat button stop responding once the user presses the sharp (and vice versa); it would also be helpful to send an error message to the user so they don't think the app just stopped responding.

3. **[H2-3 User Control and Freedom] [Severity 3] [Found by: A, B, C]**
   Once user hits "Transcribe," they have don't have options of designating where the PDF goes or if they can access the composition again on the Allegro platform. Resolve by giving email/share options and exporting options, possibly to Sibelius or some other desktop composition software. Providing users the option to go back to past compositions on the home screen would also be very helpful.

4. *[H2-3 User Control and Freedom] [Severity 3] [Found by: A, B]*
   The "Done" button on the confirmation screen for transcribing takes the user back to the home page, but users should have the option to go back to the composition screen. Resolve by replacing the "Done" button with buttons for both "Home" and "Back" so that users have the option of continuing their work.

5. **[H2-10 Help and documentation] [Severity 3] [Found by: A, B, C]**
   The app provides instructions for composition on the home screen, but the arrangement task does not offer a help or tutorial button so that users can troubleshoot or find instructions while first trying to arrange. It would be most helpful to access to documentation on the arrangement screen itself and not on the home screen to reduce the number of clicks.

6. *[H2-3 User Control and Freedom] [Severity 3] [Found by: A, B, C]*
   The purpose of the "New" button on the arrangement screen is ambiguous; the user does not know what new thing they're initiating by clicking this button, and it could be a point of frustration to be taken to a blank composition screen without any warning. This could be resolved by giving that button a more specific descriptor, adding a dialog asking the user to

confirm their action, and/or adding an additional "Back" button so that users can return to their work without arranging.

7. **[H2-3 User Control and Freedom] [Severity 2] [Found By: A, B]**
User cannot input multiple time/key signature changes in one composition, which may be useful for more complex arrangements. Give users options to assign signatures to particular measures (click to add).

8. **[H2-4 Consistency and Standards] [Severity 1] [Found By: A]**
Single eighth note is slightly transparent, but the two eighth notes connected by a beam are opaque. Resolve by making all notes opaque.

9. **[H2-3 User Control and Freedom] [Severity 3] [Found By: A, B]**
No back button on Chord input screen; resolve by adding a Cancel or Back button so users who accidentally add a chord can undo their action.

10. **[H2-6 Recognition not Recall] [Severity 2] [Found By: A, C]**
The buttons "Add" and "Remove" on the Chord Input screen are pretty unclear in what they're supposed to do. Use more descriptive captions that give users a better idea of what those buttons would do.

11. **[H2-7 Flexibility and Efficiency] [Severity 1] [Found By A, B]**
Buttons for time and key signature will likely be too small on actual mobile interface. This can be resolved by redesigning the buttons on the bottom menu to be borderless or simply increasing the button size.

12. **[H2-7 Flexibility and Efficiency] [Severity 1] [found by A, B]**
Font size is a little too small as well; the especially small texts, such as the pp and ff on the dynamics slider and the "Arrange" in the corner, start to get pixelated and hard to read. There's definitely space to increase the font size to make things more readable.

13. **[H2-1 - Visibility of Status] [Severity 2] [found by A, B]**
When users click home, there is no indication of what happens to the composition they were working on. If the composition is not automatically saved, including a dialog box ("Are you sure? Your work is not saved") before the action to go home is completed. Or, automatically save compositions and give users the option to view their saved compositions via a new button on the home screen.

14. ***[H2-4 Consistency and Standards] [Severity 1] [found by A, B]***
Getting to the arranging task is difficult for users given that the button that links to the correct screen is set off in a corner by itself and colored a different color; since it's not near the other task buttons such as the composition tools or the "Transcribe" button, the user might completely miss this button. It might be helpful to add this button to the bottom menu like the rest of the buttons so that it's grouped with other actionable elements on the screen.

15. ***[H2-1 Visibility of Status] [Severity 1] [found by A]***
After clicking something on the Arrange screen, there is no confirmation of a successful action by the user. Then again, it's hard to model these modular changes on Marvel, so perhaps there are already plans to give a confirmation to users in the hi-fi prototype.

16. ***[H2-5 Error Prevention] [Severity 3] [found by A, B]***
Given the size of the hot zones for each note, users are susceptible to adding notes to the wrong place on the staff. For example, the zone that adds a note to a line extends quite far into the space below, so whether the note will add to the line or the space is pretty ambiguous. This might be helped by maximizing the space between staff lines or highlighting the space to

which the note will be added, but this will be a tricky problem for someone who wants a fast and efficient way of inputting notes without worrying about checking their own errors.

17. **[H2-4 Consistency and Standards] [Severity 1] [found by A, B]**
The instructions page does not make it clear the difference between "Note" and "Draw Note." A user might be confused by the fact that there's a distinction at all and why the gesture for drawing a note is the opposite of making a chord. Depending on what the "Draw Note" gesture does, it might not be necessary at all. If it is necessary, change its description to be more distinctive from "Note."

18. **[H2-10 Help and documentation] [Severity 1] [found by A]**
Many classically trained musicians might not be familiar with the jazz notation for chord progressions, preventing them from being able to use that feature. Musicians without jazz notation experience would benefit with some in-app help.

19. **[H2-4 Consistency and Standards] [Severity 1] [found by A, B]**
Unclear what doing the time/key signature gestures will do, since those are two different buttons on the bottom menu bar. If the app is already letting users change the signatures via that bottom menu bar, those gestures aren't necessary, since you change the time and key signature much less often than you draw notes in a composition.

20. **[H2-4 Consistency and Standards] [Severity 1] [found by A]**
Key signature shows up for D Major and b minor, but not G Major/e minor with only 1 sharp. Resolve by adding the key signature annotation for all keys.

21. **[H2-7 Flexibility and Efficiency of Use] [Severity 2] [found by A, B]**
User is currently unable to add ledger lines for notes going above or below the staff, and there is no indication that such a feature is to be implemented. Resolve by adding a feature that allows users to input ledger lines or mark certain notes as an octave above or below the written note. Also: restriction on which clefs you can use, and if you want to use both treble and bass clef, the screen will get pretty cluttered.

22. **[H2-1 Visibility of Status] [Severity 1] [found by B]**
While there is a "Play" button on the bottom of the New Composition screen and the top right of the Arrange screen so that users can play out loud what they have put down or arranged so far, I think it would also be valuable to have each note actually being played out loud as the user is putting it down so that users can get immediate feedback from the app on what the note sounds like. This would also allow for a more seamless workflow for the user to get a better idea of what their notes sound like without having to press the Play button every time.

23. **[H2-10: Help and Documentation] [Severity 1] [found by C]**
The medium-fi prototype has not implemented this yet, but it is unclear just by looking at it how the dynamics button works in the bottom tool bar. Would the user set the dynamic level for each note? Would the user be able to select an entire section of the composition and set the dynamic level?

24. **[H2-3: User Control and Freedom] [Severity 1] [found by C]**
It seems like the user should be able to set the key signature just by the note name, rather than clicking through the number of sharps and flats. It would be nice to have both options to accommodate both thought processes.

25. **[H2-10 Help and Documentation] [Severity 1] [found by C]**
When composing, I would love to see an Undo and Redo button. Maybe the eraser button on the bottom tool bar does that, but the icon is not very intuitive.

26. **[H2-2 Match Sys & World] [Severity 0] [found by C]**

    Transcribe might not be the right word when converting the composition to a PDF. I see the intention conceptually–Allegro is the user's "ear" or "instrument" and the PDF is the idea "transcribed". However my impression was that the transcription had already taken place, and turning it into a PDF was simply converting it to another format.

27. **[H2-3: User Control & Freedom] [Severity 1] [found by B, C]**

    When the user is arranging pieces together, it is unclear exactly where the pieces being arranged together come from since there is no option to "Save" compositions within the app and nowhere on the Arrange screen that lets users choose what compositions they would like to bring into the Arrange screen. A way to address this issue would be to not only have the option for users to "Save" their work in the app, but to let users name their pieces so that they can more quickly identify what piece is what without having to actually look at or playback the notes.

28. **[H2-10: Help & Documentation] [Severity 4] [found by A,B,C]**

    I was very confused by the Arrange screen. I wasn't sure what the graph represented, as well as whether or not it was another tool that was contributing to my composition, a representation of my current composition, or a new composition entirely.

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]		2	1			**3**
[H2-2: Match Sys & World]	1					**1**
[H2-3: User Control]		2	1	5		**8**
[H2-4: Consistency]		5				**5**
[H2-5: Error Prevention]			1	1		**2**
[H2-6: Recognition not Recall]			1			**1**
[H2-7: Efficiency of Use]		2	1			**3**
[H2-8: Minimalist Design]						**0**
[H2-9: Help Users with Errors]						**0**
[H2-10: Documentation]		3		1	1	**5**
Total Violations by Severity						**28**
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)	1	14	5	7	1	

4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C
sev. 0	0	0	1
sev. 1	9	7	4
sev. 2	5	3	1
sev. 3	6	5	3
sev. 4	1	1	1
total (sev. 3 & 4)	7	6	4
total (all severity levels)	28	22	14

***lol i don't know what happened cause this doesn't look like it added up correctly

5. Summary Recommendations

The main problems with the medium-fi prototype are, first, the limited freedom and options for the user and, second, the consistency and standards of the interface design. Given that music composition is inherently complex and difficult, should Allegro truly give users the ability to "compose anywhere," it needs to cover a lot of ground in terms of features in order for users to feel like they have access to a complete composition and arrangement experience. Having a consistent design for whatever features currently exist and may be added in the high fidelity prototype is also essential to making the learning curve as nice as possible for new users. While giving users multiple options to complete a goal (gestures and buttons for key/time signature), it might be hard for users to remember if those options carry out the same actions. The arrangement user interface could benefit the most from increased documentation and clarification; it wouldn't be immediately clear to a new user what the purpose of this task would be, given the visuals used (I would also be interested in knowing what an "unarranged" piece of music looks like in the window, since the screen given in the prototype looks like it's already been worked on). Overall, the interface would benefit from larger sizing of buttons and fonts. This was something that didn't fit well into any of the heuristics, but it'll be important to give everything the dimensions and padding necessary for users to be able to click a button/read a caption and avoid clicking the wrong buttons as well. I'm excited to see the whole app come together in the high fidelity prototype!

The main issues with the app center around the lack of user control and flexibility of use. I believe that the larger trend behind these issues is possibly the mere fact that users have no way of knowing where exactly their work is being saved to. Addressing this issue would alleviate the confusion generated in arranging pieces, since users would know where they can access pieces to arrange, as well as provide users with greater control and flexibility so they can view and revisit old work without having to feel like all of their musical ideas are "final" (since transcribing to a PDF format seems really "final" to me and could hinder a lot of the raw creative process of just generating many ideas in a seamless way first before focusing/drilling into a select few). While the very basic elements of composing and arranging music in the app are clear-cut, music is a creative pursuit and professional composers and musicians realistically come from a wide range of musical backgrounds, instruments, and styles. Looking ahead, it would be valuable to provide greater flexibility and control to the user to cater to different user's different composing styles, as well as to provide users with the means to really get the creative juices flowing. Lastly, the interface right now is clean and well-designed, but the boxes around all of the buttons on the screens would lead to the problem of the

screens becoming too cluttered once musical notes/elements are introduced. Overall, I believe that Allegro has a lot of potential to be a valuable tool for professional composers/musicians!

My overall impression of Allegro was that it was very intuitive and easy to use. Many of the confusions I had were small and could have been easily remedied with a help button or documentation. Much of the functionality seemed built on gestures and taps, rather than typing with a keyboard. I think this is the greatest strength of Allegro and an awesome direction to continue in. One downside of relying on gestures and taps, is that the user can feel somewhat impatient. If the user has already decided on what key signature they want or what chord they'd like to add, it seems tedious to have to "build" it. I think it would be worth brainstorming ways to make this process quicker, while still refraining from using the keyboard. I also felt a very linear vibe in the app, which could limit the creative process of your users. This was highly impacted by the limitations of the medium-fi prototype and the lack of real gestures that I know Allegro will have in future iterations. However I think this feeling can also be attributed to the lack of back buttons- I felt I could only move forward. It may have also been the fact that the phone screen limits the user to viewing one or two measures at a time, where viewing any additional measures would require swiping through them linearly. It might be nice to be able to jump to any measure through a zoomed out or "grid" view of the entire composition. Another factor may have been the inability to save my progress on an idea or stop at any point. The only option was to transcribe it to a PDF, or start a new idea. I definitely recommend the ability to save ideas before transcribing them to a seemingly "final" PDF draft. Lastly, I want to say that I loved the aesthetic and minimalist design of the app! I found no violations there and I loved the simplicity and boldness of the buttons and notes. Keep it up! Looking forward to seeing the next prototype!