

Limitations & Improvements (Maintenance & Further Development)

Software Developer - Music Player



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# Limitations & Improvements

## User Interface Size Restrictions

One limitation of my application is that in order to ensure that the device remains portable as requested, the design for the user interface was rather restricted as they must fit on a small portable device. This caused me to run into some difficulties when designing the user interface for a lot of the views, but particularly the playlist creator.

If I was building this project specifically as a web application, and not to be run on a small portable device, then I would have usually used as much of the user’s screen as possible to fit as much useful information on the screen as I could. For instance, the songs to add to the playlist could then be displayed in a table, with headers for title, album, etc and the overall UX would be improved as the user would likely be able to find songs faster and therefore create a playlist quicker – providing a better experience overall.

A possible improvement: As mentioned in my assumptions document, depending on the importance of portability of the device, they could lock down specific complicated functionality (such as the ‘create playlist’ view) to only when the device is plugged into a computer or laptop as then the user would (most likely) have access to a larger screen, mouse, and keyboard. Alternatively, if the decision was made to provide a larger screen on the device then that would also be a completely valid option and would mean that the user interface on the device could certainly make good use of the extra space.

## Loading Time

Another limitation is around the loading time of certain functions in the application. I have only tested the application with a maximum of 20 songs, performance related to load times beyond that has not been tested. The calls to return the list of audio files or playlists will scale relatively well, only if a user was reaching hundreds of thousands of songs would there be a perceptible notice to performance. But I don’t believe that to be conceivable. The second concern is around the load time for the images for songs. While loading 20 images at once isn’t too demanding a task, when a user begins to have 100+ songs on the device then they are sure to notice a performance drop.

Due to the relatively tight time frame given to me to develop the application from scratch I did not have time to implement any form of cache between the backend and frontend so an improvement to the application would be to cache these files locally so once they have been retrieved, they are available from the device.

In terms of maintenance, this might breach into the user’s available space to add songs however it would likely be very minimal and a clean-up task could be configured to wipe out the files that had not been retrieved in ‘x’ amount of time if this became a concern.

## Playlist Editor

Mainly due to the time frame given to me, the implementation of the playlist editor is simplistic and could definitely be improved and upgraded. As it stands, the playlist editor is just a playlist creator. It allows the user to select some songs, enter a title for the playlist, and then save it.

The requirements of the application provided to me only specify that the user is able to **create** playlists, and that is all. Moving onto the next phase of development, this should be improved to allow users to edit and delete playlists. This is a feature that I’m sure users would appreciate and should be the first priority moving onto phase two. Another reason for it to be a high priority is that as stated above it has high value to user experience but it would also not take a developer too long to implement as it would just be expanding the functionality of the playlist creator. A new backend route and mongo query might be required to get a specific playlist based on the \_id and then the UI would need to be modified so that there was a way to bring up the playlist editor from a playlist. I had a ticket for this in my Trello as I wanted to get this feature completed and into the application during phase one as a bonus feature, but I unfortunately had to put in the ‘Icebox’ as it wasn’t a priority from Rebmem’s initial requirements and there was documentation that still needed completing.

## User Guide

One last improvement that could be implemented is surfacing the user guide to the users in an easy way from the application. As it stands, the user guide would probably be included alongside the device, but I think it would be beneficial to users if they could access this document from within the application itself.