Design Document 4

A description about how your program does or COULD follow the 7 principles of universal design (from the ethics lecture).

Principle 1: Equitable Use

Every user of our app Artemify can create their account as a regular user. We provide all functions like search, upload song and create playlists to all of our regular users regardless of their abilities. So every one of our users will have the same experience using the app. Additionally, no matter the role of the user (regular or admin), every user has the ability to to upload private songs and create private playlists so the provisions for privacy are also equally available to all users.

Principle 2: Flexibility in Use

As a music streaming platform, we added the option for users to be able to view the lyrics of a song. Our app also allows users to create their own playlists and customize it with any songs they prefer. Furthermore, users have the choice to set their songs and playlists as public or private according to their preference.

We had originally planned to implement more features such as edit profile, edit playlists, a suggestions page and implement more admin commands. With the edit profile feature, users are able to personalise their list of songs and playlists whenever they like, and change their username, theme preference as well as language preference. Editing playlists would also allow users to personalize their playlists to better match their song preferences. These features would allow our app to be more individualized to each user.

Principle 3: Simple and Intuitive Use

The layout of our pages is simplified to contain only the essential buttons with simple descriptions that are easy to understand. These buttons are also accompanied by icons that represent their function.

Furthermore, users are given prompt feedback immediately after executing a command through popup messages to inform them whether the execution was successful.

We also eliminate some unnecessary complexity for using our app. For example, when a user tries to create a new playlist, originally we implement our code so that we will first check whether the playlist name entered by the user is valid and then let the user do further creation steps. But this is complicated and will transfer to several pages to finally create a new playlist. Therefore, we simplified it so that all required information will be entered in one page and we designed some popup message to inform the user if the creation is successful or there is some invalid entered information that needs to be re-entered.

Principle 4: Perceptible Information

Information is presented in a manner that is easy to see and interpret—many of our buttons have simple one word descriptions on them with high contrast lettering to

make it quick and easy to realize what pressing the button will do. Our buttons can also be easily differentiated from texts, as buttons have borders around them.

A possible future improvement for our app could be to make the app compatible with tools used by people with sensory limitations such as voice commands to navigate through the app for those with limited vision.

Another possible improvement is extending the Presenter class with the ability to visualize the program app. For example, adding a dark mode, high contrast, enlarge font and text can make the program easily perceptible.

Principle 5: Tolerance for Error

Our app has many implementations to facilitate human errors. In the event of incorrect or invalid input, a pop-up message will appear to inform the user of the error and they are able to re-enter their input as many times as they like. This prevention of incorrect inputs ensures that only appropriate values are evaluated within our program, and thus minimizes the occurrences of errors. All of our pages also include an exit button, so users can freely exit a page if they click the wrong button.

Principle 6: Low Physical Effort

Due to the simple layout of our pages, buttons are sized large enough for users to easily recognise and read the descriptions of each button. This is also facilitated by contrasting colors of text and buttons, as well as icons on each button that are easily recognisable.

In our original design, we had planned to implement a permanent navigation bar on the bottom of each of our pages to ease the navigation from one page to another. With this feature, a user could freely navigate back to any essential page, without having to click exit multiple times to arrive back at Home Page. Due to time constraints, this feature was put on hold.

Principle 7: Size and Space for Approach and Use

Our program attempts to follow this principle in various ways through our implementation of an Android GUI. For instance, we provide a clear line of sight to important elements in our application by using large and wide buttons to represent menu options in every page. Additionally, we also incorporated a bright color scheme such that these buttons are visible by the user from any angle. Therefore, if the user is on a device that maximally follows this principle then our application will ensure that each of its elements are in a clear line of sight.

Furthermore, our application has incorporated a scrolling feature on various pages that will allow for maximum reach of all elements on the page regardless of how the user is holding or using the device. However, there are often times where our application does not vertically center its elements, having the elements too high or too low on the page. An instance of this would be the page where we display search results which is too high up on the page. This violates the principle as it would limit users with limited reach to access elements of our app that are towards the top of the page. Therefore, we could improve our app and satisfy this principle by either vertically centering the elements on all pages or implement a button in our program that adjusts

the elements to the vertical center of the page when clicked on. This way we can satisfy the principle by allowing users to reach any element on the page regardless of who the user is and the mobility they may have.

Lastly, our application often has instances of small buttons particularly with radio buttons when selecting whether a new song or playlist should be private or public. This may not provide adequate space for users who use assistive devices to touch the screen to make an accurate selection. Therefore, this would violate the principle by not having an application that is accommodating of the use of assistive devices even when the device that the app is running on is. Therefore, we could improve our app by enlarging these buttons or introducing an alternate selection option that is more accessible for such users. Such improvements will help our app become more compatible with assistive devices or personal assistance helping us satisfy the required principle.

All in all, our app aims to satisfy this principle in certain ways, as mentioned, but can definitely introduce certain features or adjust the size and space of certain elements on our page that will improve the user experience of the user regardless of their size, posture or mobility.