Specification document for A8MiTunes

Design:

The website's purpose is playing audio files (mp3 or wav format). It dynamically creates a list of albums based on the provided JavaScript file called "music.js". All files are taken from the "audio" and "artwork" folders.

There are three tabs in the top part of the website. The left tab displays the list of albums, the middle tab displays the list of songs after clicking on an album, the right tab displays the chosen song and provides a player that allows the user to listen to it.

The bottom part is a virtual keyboard. It allows searching for a specific song. The search keywords can only be entered using the virtual keyboard – typing on the physical keyboard will not do anything. The bottom row contains special buttons for entering a space, deleting the last character and deleting the entire keyword. Once some text is entered, the middle tab will display all songs that contain that text in their title or lyrics.

Clicking on one of the albums while search results are being displayed will cause the album track list to overwrite the results. The user is able to go back to them at any time by clicking on the search textbox.

Function documentation:

generateAlbumList

This function is called as soon as the website is loaded. Generates a clickable list of albums in the left tab by iterating through the **albums** array from music.js. For each album in the array, this function creates a div with the album's title and artist, that will call "generateTrackList" when clicked.

generateKeyboard

This function is called as soon as the website is loaded. Generates the virtual keyboard with four rows of buttons: the first three are letters set up as in a QWERTY keyboard, the last row are special keys: Back, Space and Reset. Each key is a div associated with an onclick function that either inputs or deletes characters from the search bar on top (different for each key). The search bar is a text box that displays the searched keyword and it can only be edited through the virtual keyboard – it will not accept input from the physical keyboard. It also has an onclick link to the "search" function that will generate the search results in the middle tab.

generateTrackList

Arguments: **album_id** (*int*)

This function is called when an album name in the left tab is clicked. Generates a clickable list of songs from the chosen album (referenced by **album_id**) in the middle tab. It does so by iterating through the **tracks** array of **albums[album_id]** and for each, displaying a div with the track's title, that will call "generateSongData" when clicked.

generateSongData

Arguments: **album_id** (*int*), **song_id** (*int*)

This function is called when a track name in the middle tab is clicked (whether it is in album list mode or search results mode). Generates a description of a given song (referenced by **album_id** and **song_id**) in the right tab. The description contains: the album image, artist, album name, track number, track title, an audio element to play the song and lyrics (all are provided in the **albums** array). By default, the audio element will choose to embed the mp3 file, if there's an error it will choose the wav file instead. If neither of the files could be opened, a message will be displayed instead.

insertLetter

Arguments: **c** (*char*)

This function is called when a letter or space button on the virtual keyboard is clicked. Enters **c** (the character associated with the button) into the search bar. As it is impossible to change the cursor position in the search bar, this function will only ever add to the end of the string. After this function is done editing the search bar, "search" is called in order to refresh the search results.

deleteLetter

This function is called when the back button on the virtual keyboard is clicked. Deletes the last character in the search bar. As it is impossible to change the cursor position in the search bar, this function will only ever delete from the end of the string. After this function is done editing the search bar, "search" is called in order to refresh the search results.

resetSearchBar

This function is called when the reset button on the virtual keyboard is clicked. Deletes all text in the search bar. Because altering the search bar always updates the search results, at the end of this function "search" is called, which always results in emptying the middle tab.

search

This function is called whenever the text in the search bar changes or when the search bar is clicked. Generates a clickable list of songs that match the search bar text in their name or lyrics in the middle tab. Note that this function does not search for matches in the artist and album titles, even though it will display them. The searched text is highlighted in both the title and the provided lyrics snippets. If the searched text doesn't appear at all in the lyrics, they won't display at all. If it does, only part of the lyrics is displayed – the highlighted part and at least 5 characters on both sides (rounded up to the position of the nearest space, so that we don't end up with words split into parts). If no matches were found, it will display a message in the middle tab instead of creating an empty list. If this function is called when the search bar is empty (for example after reset was clicked) it will just return the middle tab to its default state – displaying the "No album selected" message.