# Final Project Functions

## Light/Dark Mode

For my final project, I implemented a simple light/dark mode feature for the background of the website page. The modeToggle function is found on all pages of the website in the Mode.js file. This function allows the user to click on the respective button that will change the background of the page based on the mode the user wants. This is done by adding or removing the light class from the body element, updating localStorage to remember the user’s preference. The button also changes text to display as light to switch to light and dark to switch to dark. This functionality is also integrated into the CSS files, which allows it to affect text color and other elements to avoid poor contrast.

## Music Integration

In addition, the pages “Basics of Beat Production” and “Basics of Chord Progressions” have music exercises at the bottom of the page.

The “Basics of Beat Productions" page allows the user to click on individual beats (squares in the respective row and column) to create a sequence. They are then able to playback the sequence using the play button, which will toggle to stop once clicked, allowing the user to also pause the sequence. The function is called playSequence and loops through 12 steps at a predetermined interval, playing any active beats by checking the status of the current beat (if it has the .active class) and finding its corresponding audio sound. The function also highlights the step (column) it is playing.

The “Basics of Chord Progressions” page allows the user to select preset chord buttons which will play the corresponding chord on the piano below it. It will also display a list of chords already selected (not visible if nothing is yet selected) and the notes that make up the chord. Clicking Play will playback the chords as a progression chosen by the user. The piano is also interactive as it highlights notes that are played either by the user or by the preset chords. The piano is also playable through the user’s keyboard keys. The functions are found in the respective JavaScript file that manage Play/Clear chord buttons, piano note event monitoring, and displaying chord information. In addition, I used 3 objects to map strings to other strings and collections. These were for the chord information, chord output (chord to individual keys) and keyboard keys to piano notes. These are used to loop through specific functions that display chord information, play specific chords, and activating specific notes. Further, there is an array that is populated with selected chords, which is used to loop through the chord progression when the user selects play.

# Extra Effort & More Information

Below is a list of extra stuff included.

* Light/Dark mode button implementation using localStorage
* Music Sequencer implementation (on beats page) using loops and conditionals and drum sounds
* Chord Progression implementation (on chords page) using loops, conditionals, arrays, and maps
* Simple Piano implementation (on chords page) using arrays and maps
* Error checks with sounds in the event they’re not supported on certain platforms
* Overall consistency with design
* Responsive design

In addition, I included a Credits page, not originally mentioned in my wireframe, as I did not want to clutter my code with comments of references. Instead, the Credits page links all the resources used for this project, including sources for images, sounds, and design inspiration. All images and sounds implemented are also open source.