Introduction to Programming 2
Mid-Term assignment

Section1 Overview of your project

The project I'm making is a music visualizer. The template will be musicVis-master.zip, and I will add three extensions.
The first extension is the circle music visualizer, which will display the bars placed along with the circle and move according to the spectrum and level of the song, changing the color.
The second extension is a 3D music visualizer, the size of the 3D model changes depending on the level of the song. It makes richer than 2D graphics and allows for a wider range of expression.
The third extension is the physics music visualizer, in which tiny boxes jump by force that is the level of the music.
On the whole, in this project, I will modify the current interface design. Changing the play button placement and placing a full-screen button that is not only key operations makes it easy to use. In addition, if there is room in the schedule, I would like to display the title and time of the song.
For the most part, the version of the library will be the latest. Due p5.sound.js causes errors in the play method, I decided to use a lower version. This error is already an issue on GitHub, and it seems to be working to fix this at the moment.
In regard to JavaScript, I would like to use ES6 techniques that make the code more readable, as well as and reduce possible errors in JavaScript as much as possible. For example, if you use "var" to declare a variable, the variable you declare later will be applied. To prevent unexpected redeclarations from happening, you must use "const" and "let" to reassign primitive types.
As an additional library, I adopted matter.js to use the physics engine in 2D. The reason for this is that it is 2D-only, has good documentation, and seems to be easy to use even if you only know a little about physics. Furthermore, I would like to add p5.gui.js so that users can adjust the color or number of shape objects at each extension.
Moreover, in 3D, there are difficulties in Lighting, model placement, and material settings different from 2D. In particular, the Lighting effect can change how a 3D model looks so that I can research and develop it efficiently. In addition, I would like to place various 3D models on the canvas and have each one move along with different frequency ranges.