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Senior Project Proposal

### Drum and Bass Daw

For my senior project, I'm developing a digital audio workstation (DAW) that focuses on Drum and Bass (DnB) music production. The project will let users log in, upload or use preset sounds, create tracks, record the track, and save their work. Users will also be able to upload previously saved tracks for further editing, so they can keep working on their tracks over time. The DAW will include key features like track looping, tempo adjustment, and sound layering, all essential for producing DnB music. My motivation for this project comes from growing up in a musical household, where I was always surrounded by music. This past summer, my younger brother and I spent a lot of time experimenting with his music production setup. Although the setup was impressive, it was complex and time-consuming. That experience inspired me to create a DAW that makes the DnB production process simpler and more accessible.

For this project, I will primarily use HTML, CSS, and JavaScript for the front end, with MongoDB for data storage. I'll also use libraries like React.js to handle the interactive parts of the front end, Tone.js (a library built for sound in web applications), and Node.js (or maybe Python) for back end. While I plan on exploring the Web Audio API, Tone.js should cover most of my needs for audio functionality. Since the DAW will run in any web browser, users can access it from desktops, laptops, or mobile devices, and the responsive design will ensure a smooth experience on any device. The decision

to make this project web-based was to increase accessibility, allowing more users to interact with the project.

I'm already pretty comfortable with HTML, CSS, and Javascript, but React.js and Node.js are new to me. This project will give me the chance to expand my knowledge of modern JavaScript frameworks, and learn more about back end development. I haven't done much work with responsive web apps, so making sure the DAW works on both desktop and mobile devices will be another important challenge.

The main audience for this DAW will be musicians, music producers, and hobbyists who are interested in creating DnB tracks without having to invest in or learn a complicated DAW like Ableton or FL Studios. My goal is to provide a simple, easy-to-use, and free option for making DnB music on the go, without needing to download a bulky application cluttered with unnecessary features. This project will appeal to both beginners who are just getting into music production and experienced producers who want a lightweight, portable option for creating DnB beats.