Initial Project Description

Team #11

Team Members:
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Project Name: JayHear

Project Synopsis:
     Audio denoising web application used for removing background noise from audio files.

Project Description:

     The project we will be doing this year is denoising an audio file. The simple idea is that you feed a noisy file, a file with background noise such as loud voices or loud cars, into the model and it will give you the same audio file except without the noise.

     This project is being undertaken because it is still a real world problem in how to properly denoise an audio file. Even more specific, this is a real world problem in the realm of hearing aids. Hearing aids amplify every signal coming in, instead of important ones such as someone talking to you. By undertaking this project we hope to find a way to not only remove the background noise, but to enhance important signals such as people talking.

     The end goal of this project can either go two ways. It can be implemented on a website so that people may upload audio files they wish to denoise or it can be implemented onto an embedded system, such as hearing aids. Later in this semester we will narrow down our choice and decide which route we will go down.

Project Milestones:

Fall 2021:
- Milestones and Project Requirements Defined (October 1)
- Research Python and Frontend Tech (October 15)
- Front-End and Back-end Diagrams and Design (November 5)
- Front-End and Back-end Implemented (November 26)
- Connecting Front-end and Back-end (December 3)
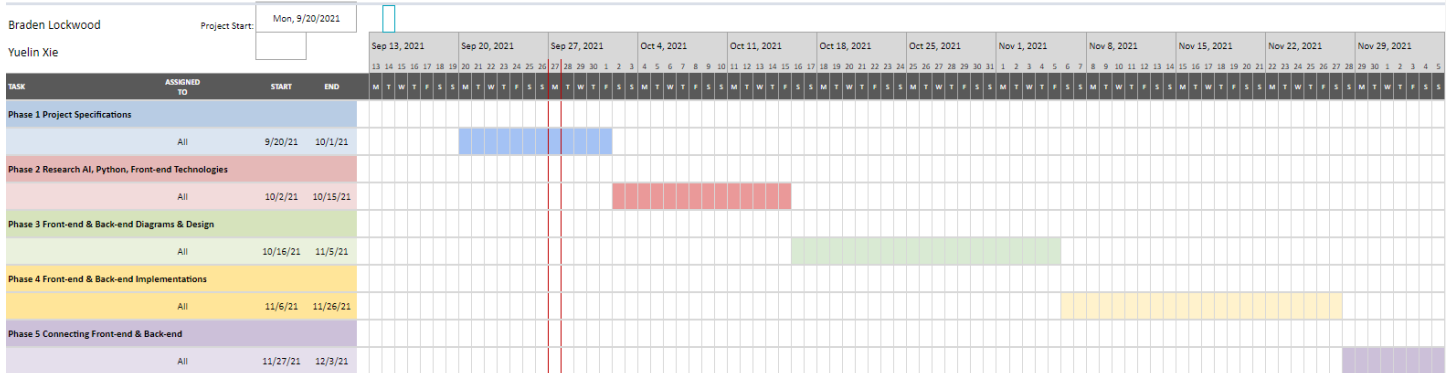
Spring 2021:
- Log In/User Management (February 11)
- Model Trained (February 25)
- Playback/Streaming Clean Audio (March 11)
- Refactoring (April 1)
- Final Product & Project Poster (May 1)
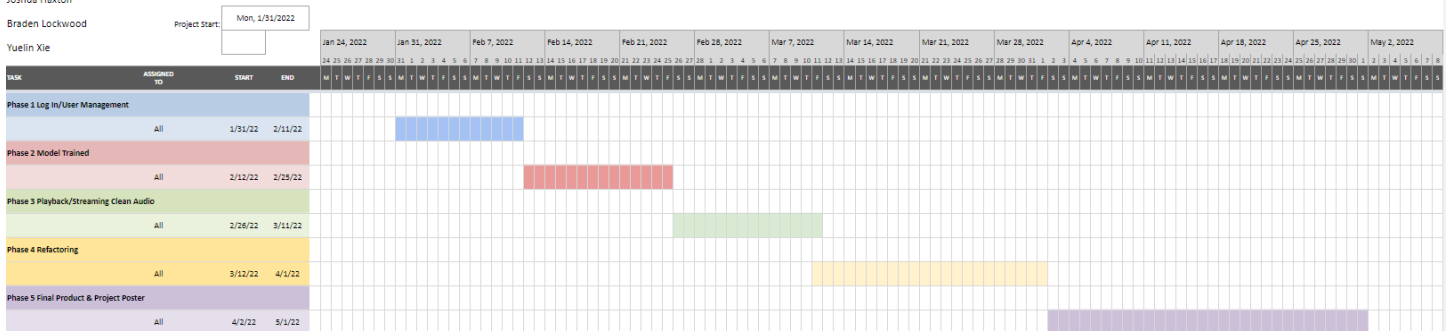
Gantt Charts

Fall Semester:

Spring Semester:

Project Budget:

Since our project will be training an AI model we will need a sufficient amount of storage to store the data. To do this all we will need an external SSD between 256GB and 512 GB. These usually range from 100-200 dollars. We can typically buy these from Amazon.

Amazon

Another thing we will need is a GPU to train on. Luckily, there are a lot of free ones online that we can use, like Google Colab. If this does not work, we can rent one that charges per minute we use it. This can range from 50-75 dollars.

Google Colab

SSD: $100-$200, Date needed by December 1
GPU: $50-$75, Date needed by December 1

Total: $150-$275