Design Documentation Group 33

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UI - Marshall, Ethan, and Johnathon

User interface class (with appropriate design, instead of just running through the main). We were unable to fully finish this part the way we would have liked to.

File IO - Mark

File IO class (designed as an interface for classes to inherit).

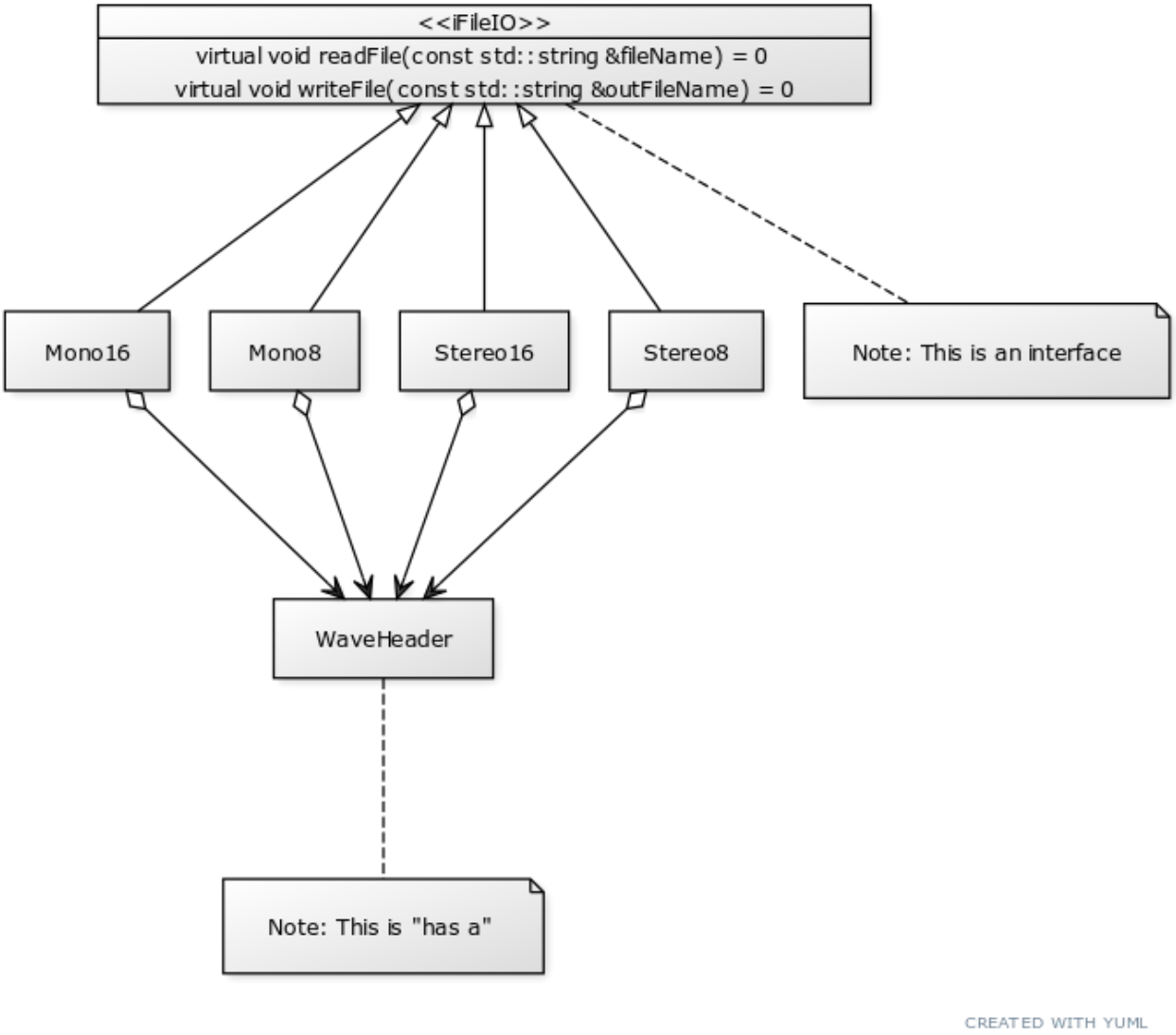
Sound Processor - Mark and Marshall

Deals with wav files. We were unable to implement the metadata information, with time constraints being the biggest factor.

Doxygen - Johnathon and Ethan

Files have the appropriate doxygen comments, and the html folder/doxy file is on git. We don’t have admin privileges so we couldn’t create the doxygen front page.

UML Diagram - Johnathon



GitHub Page - Johnathon and Ethan

The doxygen files are pushed, but making the page work for html is a different story since we don't have admin privileges (we posted in main discord for help). This document and the doxygen files meet all the criteria the documentation page must contain.

SOLID Principles

A modular design was used. Instead of testing things through the main function, we had to use the UI. We had to send information between classes using interfaces. Information

such as wav processing and file I/O. Each class handled their own concern and had minimal understanding of the other concerns.

Inheritance

Yes, refer to UML diagram

Interface

Yes, refer to UML diagram

Template

Yes, in processor classes such as NoiseGate and Echo:
template<typename mono>
template<typename stereo>

Challenges Faced

The main challenge faced was not being able to become a team until Sunday, thus time playing a huge factor. Mark and Johnathon were transferred to this team on Sunday, and communication with Ethan became consistent on Monday. Once a team was formed, the project moved in the right direction. Incorporating SOLID principles and required technical elements was also a challenge, and took getting used too. Especially when dealing with the UI since we are used to testing things in the main. Not to mention, working with audio files (which we are relatively new to) was an additional challenge. We definitely need to keep on practicing to become better programmers.

- Mark: “I have switched between a couple different teams due to unfortunate circumstances, so I was put into this team Sunday, two days before the due date. I tried as hard as I could to get as much of the project done as possible but time was the biggest challenge for me. We were unable to implement the metadata information, but I know we could have if we had more time. Also, creating templates was a bit of a struggle at first, but once we started coding for the mono and stereo classes we knew that 8 and 16 bit has different data types so we

decided to implement a template. It took a bit of time to structure it but it works. Lastly, communicating between classes was a struggle; for example, using a user interface class instead of just running through the main was hard to wrap my head around, and we could not fully finish this part the way we would have liked to as well due to time constraints."

- Marshall: "Struggles: Getting with a team that communicated effectively seemed to be the biggest struggle across multiple teams. After moving around some members and getting a solid team the project moved a bit quicker in the right direction. Using wav files for the project was/is a great idea. However, most people do not have any clue how audio files are built. I like the idea of adding in that element for students to work thru but in a project of this size it makes it a bit tougher but not unbearable. Without having more practice, mostly on my own time, building this project was a bit more of bear than expected. Throughout the course we had introductions to the concepts of templates, interfaces, etc. but never got a chance to really practice with them unless we coded on our own outside of class (which we should be doing, I did not though since I was busy with other projects in other classes)."

- Johnathon: "At first I got to experience the struggles of bad teamwork hence why I got switched to this team on Sunday night, which was pretty last minute. Previously to joining, I worked on the UI but found it challenging to compile code that works with the intended modular design. SOLID principles and wav files are new to me, and I need to practice more on my own time to get better (haven't really had time this semester). I understand the concepts, but need to code more to get better. I tried my best to help out how I could with this team given the time constraints. I didn't do much coding since I wouldn't have gotten full points for the implementation, so I focused on other aspects with an emphasis on the design. After doing some research completing these other tasks weren't that bad, nevertheless, a challenge.

- Ethan: "Problem: Personally, my time management was pretty off especially nearing towards the end of the semester. Focusing on the other classes was good, but doing so led to me ignoring this project and putting it off. That was the biggest factor that really inhibited the use of my skills for this group project. Also, communicating with the rest of my team was a little bit difficult as well. While we pulled it off over these past few days, communicating with each other only through online platforms such as Discord made it really difficult. I think that with a better means of communication throughout the project, it would've been a bit easier. Project-wise, figuring out how to fully create the UI was a bit of a struggle

and implementing a switch function could not have been fully created because of the complications incorporating the audio processes with the little time that I gave myself. Also, figuring out how to setup Doxygen with VSCode was also a little difficult and it took some time to figure out how to create a Doxyfile for the project's documentation. Once the html file was created it was good but having a lack of permissions to access the project settings on Github made it literally impossible to add the html documentation onto it.”