Sonic Revolution

A Mini Project Report
Submitted in Partial Fulfilment for the award of

BACHELOR OF TECHNOLOGY
IN
COMPUTER SCIENCE AND ENGINEERING
(Specialization in Gaming Technology)

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Abstract

Sonic Revolution is an audio/sound generating app that aims to help beginner game developers create their own copyright-free original in-game music and sound effects. It also has a web forum where users can upload their own sound effects.

The audio generation is done in a procedural manner where we have a concept of “tracks” and “tones”. A “tone” can be created by choosing a musical note, octave, and duration which is then added to a track. We can add multiple tones on a track and overlay multiple tracks to generate any kind of audio effect.

The companion website, Sonic Revolution Forum, allows users to share their own sound effects with other game developers where anyone can listen and download audio files uploaded by others.

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Introduction

A. Objective: -

To provide a simple application that allows video game developers their own sound effects without the complexity of learning audio engineering.

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B. Brief of existing work: -

Existing web applications like “ChipTone” achieve the objective of creating Sound effects

C. Limitations of existing work: -

- An overly complicated user interface.
- Not beginner-friendly.
- It has features that can only be used by professionals who have studied audio engineering.
- Too many obtrusive notifications and pop-ups.
- Does not have an open platform to share their own sound effects.

Proposed work

A. A brief of Proposed Approach: -

With the help of Sonic Revolution, we have made generation/creation of audio clips for game development and other purposes an easier task. The intuitive UI acts as an easy to use medium to help the user create an audio clip of one's choice with very little experimentation and experience.

The application and the website allow users to interact and share their creations. The users can upload their creations which can be downloaded and used for multiple purposes by other users as well. This helps in building a good community and creating interest in this industry.

B. Advantages of the proposed system:

i. It provides a simple and easy-to-use interface.

ii. It is easy for beginners to create sound effects.

iii. It makes unique audio by random generation.

iv. It gives the Game Developers a platform for sharing their own Sound effects with others.

Software and Hardware Requirements

Software Requirements:

- A modern web browser that supports the new collection types like Maps and Sets, preferably Chrome, Firefox, Safari, and IE 11 or above.
- A modern OS which is compatible.(Recommended Windows 10 or equivalent)

Hardware requirements:

- A device capable of running modern softwares like Chrome/Firefox/IE 11 or above.

- To use Chrome/Firefox/IE 11 Browser on Windows, you'll need:
    - Windows 7, Windows 8, Windows 8.1, Windows 10 or later
    - An Intel Pentium 4 processor or later that's SSE2 capable

UML Activity Diagram

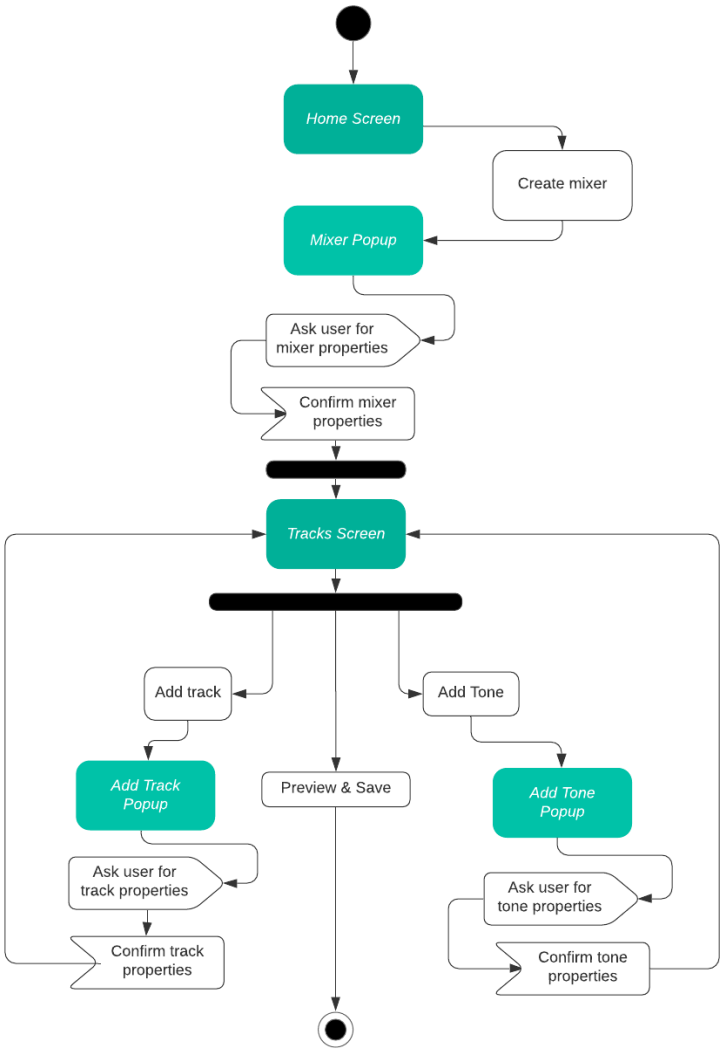

Figure 1: UML Activity Diagram

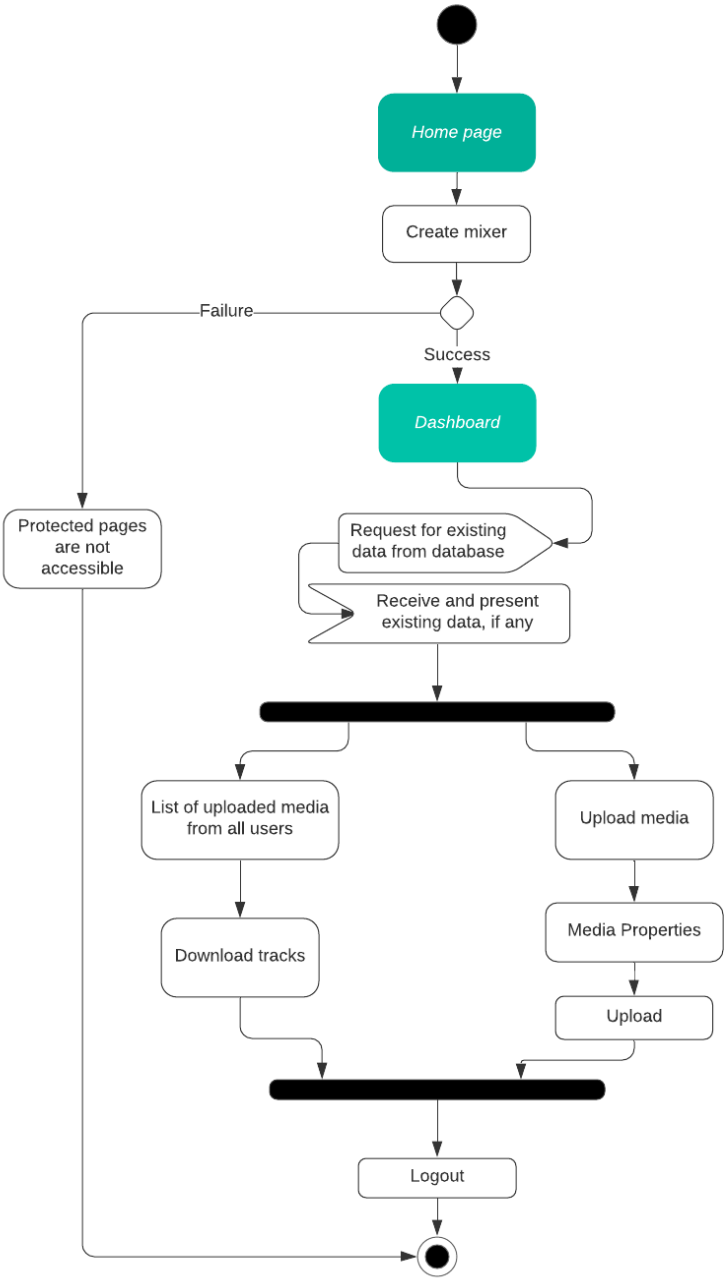

Figure 2:Website UML Diagram

Use Case Diagram

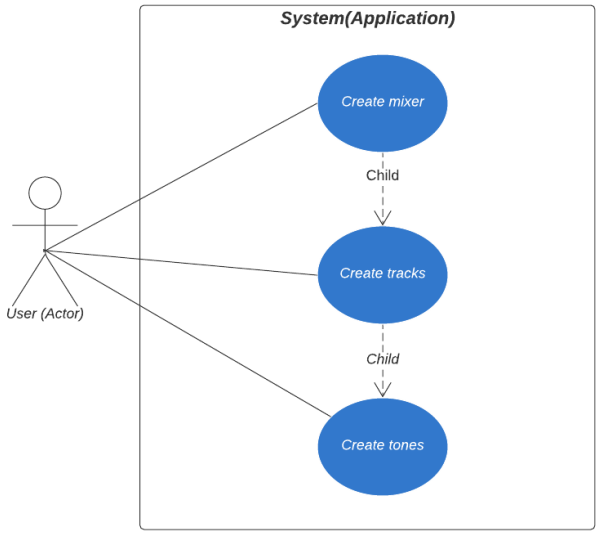

Figure 3: Use Case for the Software application

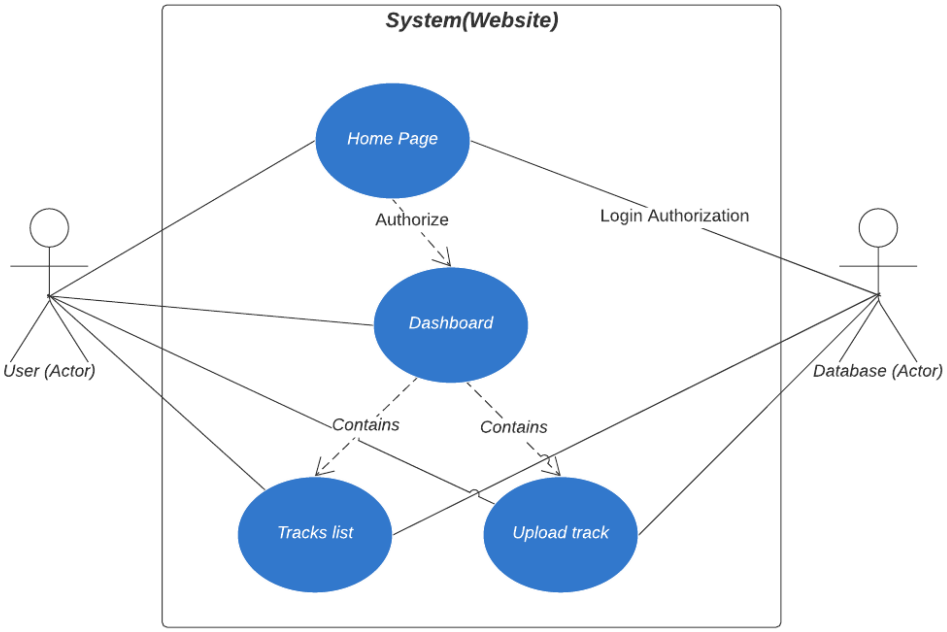

Figure 4: Use Case Diagram for website

Screenshots

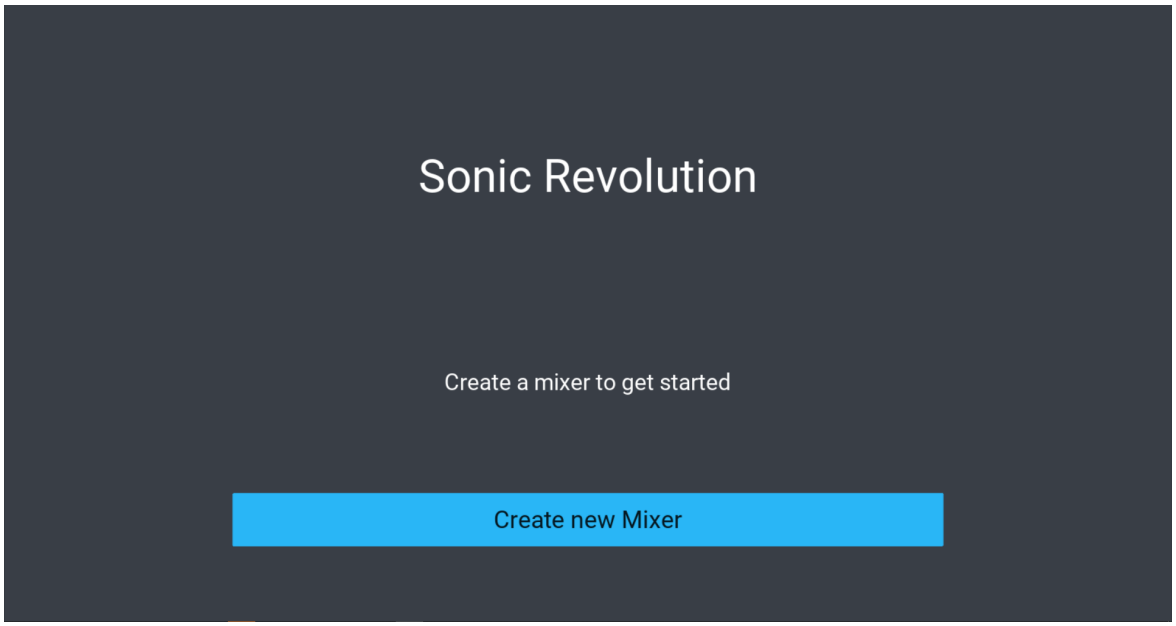

Figure 5: Main menu

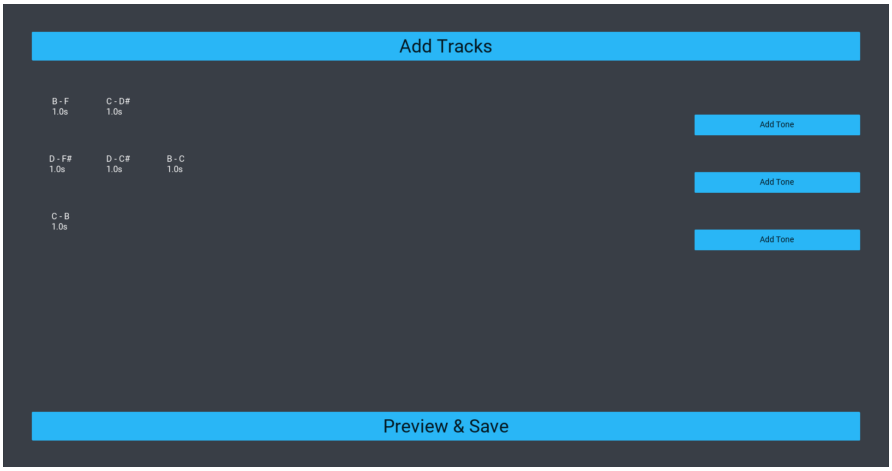

Figure 6: Audio Track menu

Figure 7: Generating Audio Track

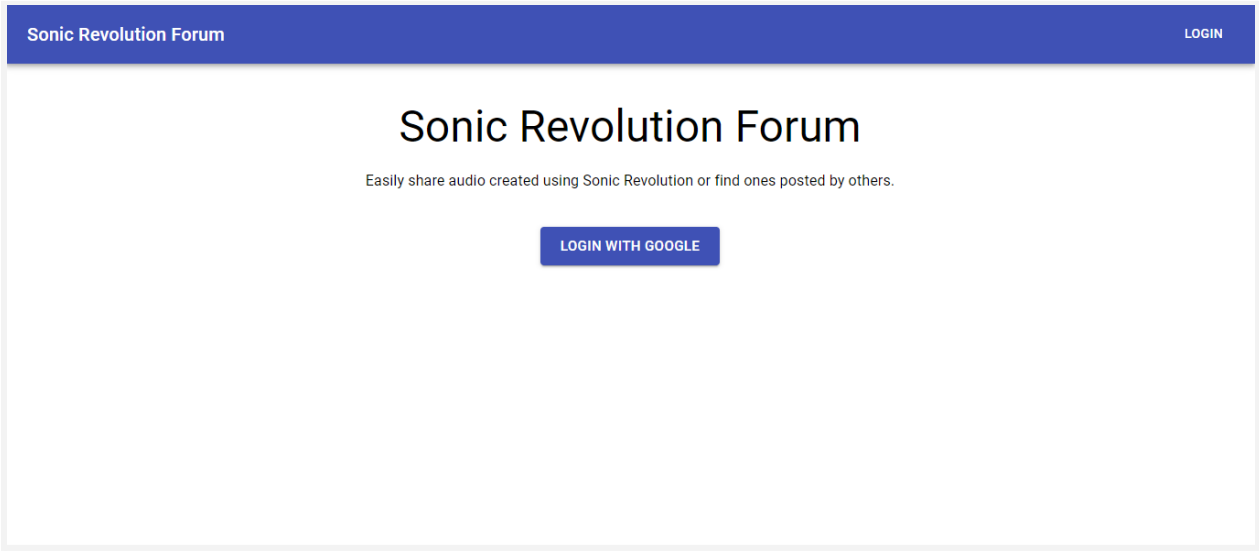

Figure 8: Website homepage

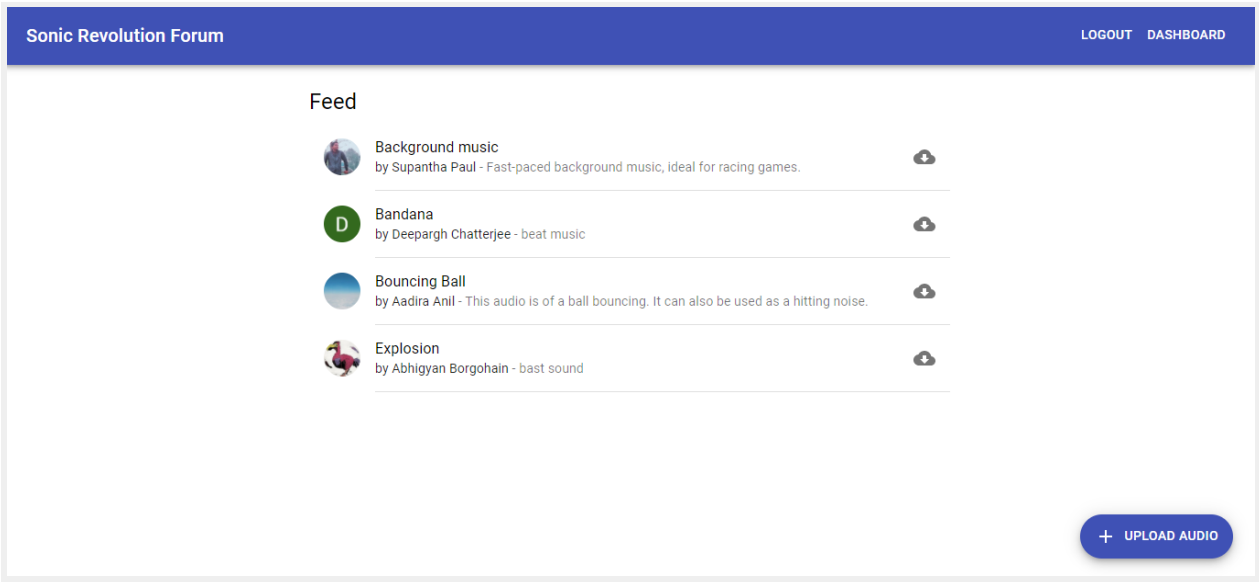

Figure 9: Website user dashboard

Conclusion

This report discussed the development and deployment of an application (Sonic Revolution) made using Kivy(Python library) & Tones(Python library), to generate sounds using different types of tracks and tones. The project uses assets like KivyMD to make an intuitive as well as a comfortable user experience while using the application. It also features a website for creators to share their work with other creators, which is made using React(JavaScript library) & Material-UI.

The project aims to provide an extraordinary experience to the user while using the application with a minimalistic, simple, and easy-to-use design. It achieves most of the scope of the given objective simply and efficiently, without any unnecessary or obtrusive elements.

References

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