

Learn Music With... SIMPLY MUSIC



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Version 1.0
January 25, 2025
Software Requirement Specification

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1. Introduction: Purpose

The project being built is a music-learning application that will help users learn how to play different instruments and improve their musical abilities. The app will offer interactive lessons with tailored feedback for everyone, whether you're a beginner or an aspiring musician. By using technology to create a flexible, self-paced learning environment, the project aims to increase the accessibility, enjoyment, and convenience of learning music. In particular, for people lacking the time, resources, or proximity to lessons, this app tackles the business issue of limited access to high-quality and affordable music education.

2. Stakeholders

- Musicians/Producers
- Hobbyists
- Music teachers
- Music students
- Streaming services

Personas

RAHAD Phillips

Music Educator



Quote

"Learning songs keeps me happy and I want others to have the same enjoyment"

About Me

Gender: Male

Age: 24

Location: Austin, Texas

Occupation: Small music studio teacher

Education: Bachelor's degree in Music and Business Administration

Motivation:

Rahad loves teaching music and collaborating with local artists, which led him to open his studio. He offers lessons, recording sessions, and a space for jam sessions. He heard about the app through a fellow studio owner who uses it to help their students learn in their free time. In his downtime, Rahad also enjoys experimenting with new instruments.

Personality:



Goals:

- Help beginners learn music skills, such as reading sheet music.
- Make learning fun through interactive lessons.
- He would love to pick up new instruments and master them to widen his teaching variety.

Needs:

- Easy-to-use interface and UI which allows him to find every perk of the app without difficulty.
- Interactive tools with visual and audio feedback to make learning more immersive.
- A community area so he can share things with his students or make sheet music for others.

DARIN TEMPROSA

Music MBA Student



Quote

“I’m excited to further my education in music!”

About Me

Gender: Male

Age: 23

Location: Washington DC

Occupation: Music Teacher

Education: University of Pennsylvania

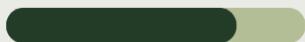
Motivation:

I would use this app to help me further my education in music. I had always loved music, ever since I joined band in middle school throughout high school so I decided to major and further his education in music. I heard about this app through other users who recommended it.

Personality:

Introvert  Extrovert

Feeling  Sensors

Intuitive  Thinkers

Perceivers  Judgers

Tech Savvy  Tech Averse

Goals:

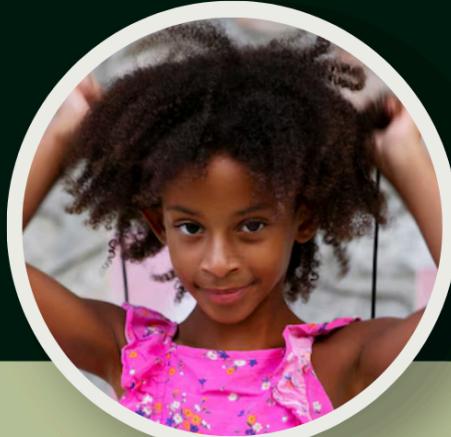
- Share my music with my students
- Compose music on the go/or at home easily
- Come up with ways to be creative

Needs:

- Ability to write music/play it back
- Ability to for my students to use it as well
- Ability to download the music sheet and mp3 sound

GINA Jefferson

Second-grader at Ridgefield Elementary



Quote

"I can't wait to show mom and dad my new song!"

About Me

Gender: Female

Age: 7

Location: Chattanooga, Tennessee

Occupation: Student

Education: Enrolled in elementary school

Motivation:

Gina finds difficulty in sticking to one hobby. She's always making new things, searching for her special talent. She wants to do something that she's both naturally good at--and has fun doing. After scrolling through the app store, she's decided to try and make music.

Personality:



Goals:

- Wants an engaging hobby that she can spend hours doing
- Hopes to learn how to play fun songs, like the ones she hears on TikTok
- Wants to quickly gain an understanding of how music works

Needs:

- A safe environment with no inappropriate content
- Tutorials within the app
- A variety of sounds, colors, and an easy-to-use interface in order to keep attention

3. Constraints

Time constraints:

- This product should be completed by the end of the semester.
- Key milestones will need to be hit on weekly due dates.

Monetary Constraints:

- This project has a budget of \$0, so all resources should be free or open-source.

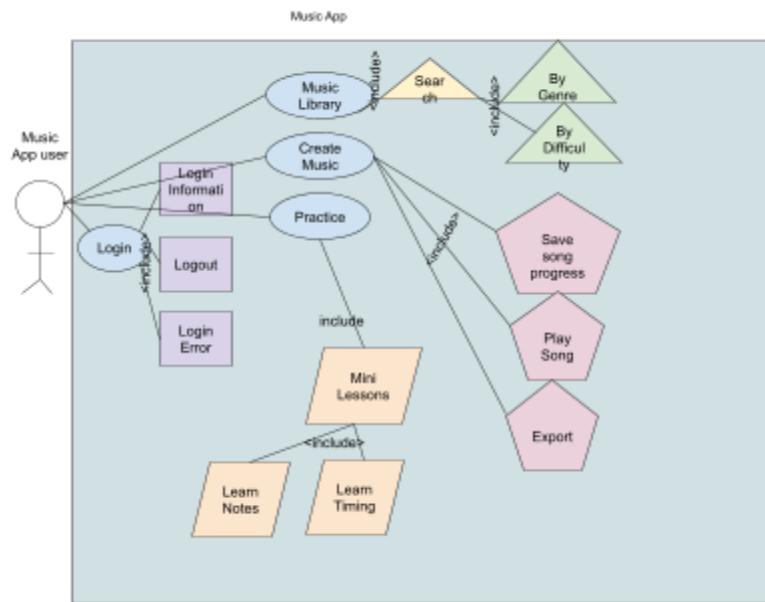
Technical constraints:

- The application should be fully coded with java.

4. Overall Description

This product is a music app designed to allow users to develop their musical skills and create music directly within the app. It will be available on laptops and mobile devices, providing access to a library of diverse instrument sounds and supporting user-recorded audio input. The app will also include a range of tutorials to guide users through different aspects of music creation.

5. Business Use Cases



6. Functional Requirements

LLJV Requirements pt 2

7. Non-Functional Requirements

Look and Feel Requirements

- The app should be intuitive, easy to use, and accessible to the average user. All elements should be clearly visible.

Usability Requirements

- The app should be easy to learn, navigate, and use in any location, whether or not the user has access to Wi-Fi.

Performance Requirements

- The app should operate smoothly and quickly, with no bugs. Users should be able to complete all tasks the app promises without issues.

Maintainability and Support Requirements

- Users should be able to report errors through an external messaging service. The team will address these issues as quickly as possible and make necessary revisions to the app.

Security Requirements

- The app should not collect any personal data from users or their devices. It should also allow users to keep their profiles and songs private.

Cultural Requirements

- The app should be respectful of different cultures and identities. It should be careful when labeling genres, ensuring it does not misrepresent or offend any culture's music. The app should be inclusive of musical creations from various cultural backgrounds without discrimination.

Legal Requirements

- The app should avoid using copyrighted music. It will screen user-submitted songs and audio files to ensure no one is uploading someone else's copyrighted work.

8. Definitions and Acronyms

1. **Stakeholders:** The individuals or groups that have a concern in a project.
2. **Usability:** The ease with which users can learn to use the app and perform desired tasks effectively and efficiently.
3. **Bug:** A flaw or error in the software that causes it to function incorrectly or unexpectedly.
4. **Copyrighted Music:** Music that is legally protected from being reproduced or distributed without permission.
5. **App Interface:** The visual elements of an application that users interact with.
6. **Prototype:** An early version of the app, created to test and demonstrate key features.
7. **UI:** User interface.
8. **UX:** User experience.
9. **Feasibility Study:** An analysis to assess the practicality of a project, to evaluate if the plan could be successful.
10. **Deployment:** The final release of an app, where it becomes available for download and use by the public.

9. Competitive Analysis

Garageband	
Strengths	Free for iOS users, intuitive interface, high-quality sound library, robust virtual instruments, and seamless Apple ecosystem integration.
Weaknesses	Limited to Apple devices, lacks advanced mixing/mastering tools for professionals, and limited file compatibility.
Audience/Focus	Casual music creators, hobbyists, and beginners with access to iOS devices.

FL Studio Mobile	
Strengths	Cross-platform compatibility, professional-grade features, customizable workflows, and a powerful mixing engine.
Weaknesses	Expensive compared to alternatives, steep learning curve for beginners, and reduced feature set compared to its desktop counterpart.
Audience/Focus	Intermediate to professional users seeking portability for professional-level music production.

BandLab	
Strengths	Completely free, cloud collaboration tools, social networking features, and simplicity for beginners.
Weaknesses	Limited professional features, dependent on internet connection for collaboration, and less robust instrument library compared to others.
Audience/Focus	Beginner to intermediate creators interested in collaboration and social sharing.

Summary

	Strengths	Weaknesses	Audience/Focus
GarageBand	<ul style="list-style-type: none"> - Free - Easy to use - High quality - Virtual instruments 	<ul style="list-style-type: none"> - Only available on iOS - No advanced tools - Limited file compatibility 	<ul style="list-style-type: none"> - Casual creators
FL Studio Mobile	<ul style="list-style-type: none"> - Professional - Customizable workflow 	<ul style="list-style-type: none"> - Expensive - Learning curve 	<ul style="list-style-type: none"> - Intermediate to pro users
BandLab	<ul style="list-style-type: none"> - Free - Cloud collaboration - Social network aspect - Simple 	<ul style="list-style-type: none"> - Needs internet - Less instruments in the library 	<ul style="list-style-type: none"> - Beginner to intermediate

Using this competitive analysis we have built an idea of what component would create a successful music app. GarageBand is an excellent application, and we should take the highest inspiration from them while tweaking a few of their weak points. The highlights of the app are the sheer variety of instruments, audio-recording tools, effects to enhance sounds, and the track panel which hosts all of these tools. The variety in GarageBand allows it to serve a large variety of creators. The tools are there for a user to create a more professional sound, while the app still holds its simplicity for less-knowledgeable users. We will remake this format, and allow it to be compatible with all kinds of devices while enhancing the interface to be even easier for users to pick up.

10. References

No documents were referred to in the creation of this document.

11. Appendices

A. Development Roadmap

Phase 1: Research and Planning

Finalize requirements, define core features, and conduct a feasibility study.

Phase 2: Prototype Development

Develop a basic UI/UX design and implement core functionalities.

Phase 3: Testing and Feedback

Conduct usability testing and refine features based on user feedback.

Phase 4: Final Development and Deployment

Implement advanced features, optimize performance, and launch the application.