ChordCraft

Software Requirements Specification

Team Oracle

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1. Introduction

Purpose

Many people have a desire to learn an instrument but do not know where to start in that process or have a convenient library of music to learn. Instructors and physical instruments are time and money commitments that some people cannot afford. The objective of our product is to give these people a way to learn an instrument and give them instructions on how to play music. An app would be an inexpensive and low-pressure way to begin playing an instrument. The app shall have sheet music for users to learn and give them instructions on how to play it. The app shall also have a virtual instrument that the users can learn to play with.

2. Stakeholders

Client

User

Stockholders

Gail Skyworth

Age: 79

Hometown: Tucson, Arizona

Profession: Piano Teacher

Tech Savviness: Poor

Bio: Gail is a retired grandmother who has always been passionate about music. She learned piano and guitar to pass the skills down to her two sons. Now she spends her free time teaching piano to those seeking lessons. She struggles with applications and is hoping to find something that she can operate just as easily as her younger students.

"Life isn't about getting and having, it's about giving and being." - Kevin Kruse

Goals: She is looking for a better way for her students to practice outside lesson time.

Frustrations: She wants to ensure a user-friendly application that can be operated by younger users without causing frustration or burnout.

Toby Benson

Age: 24

Hometown: New Brunswick, New Jersey

Profession: Accountant

Tech Savviness: Well accustomed

Bio: Toby is a graduate of Rutgers University with a bachelor's degree in finance. He has never had formal musical training but has always had an interest. He is now seeking a way to learn as he has settled into his career. He has a lot of experience with online platforms and is considered "tech-savvy" by relatives.

"Challenges are what make life interesting and overcoming them is what makes life meaningful." -Joshua J. Marine

Goals: Learn a basic comprehension of music and gain the skills to play a couple of his favorite songs on acoustic guitar.

Frustrations: Complete lack of knowledge of the subject

Blake Pearson

Age: 44

Hometown: Columbia, South Carolina

Profession: Entrepreneur

Tech Savviness: Expert

Bio: Blake is a successful businessman looking for an investment opportunity. He has a basic knowledge of music and wants to cultivate a platform that will be used by families, including his own. He has commissioned software before for previous projects and is aware of the needs such a project would have.

"The best time to plant a tree was 20 years ago. The second best time is now."
-Chinese Proverb

Goals: Find a successful investment opportunity that could also be used by himself and his children.

Frustrations: His support is reliant on financial success

3. Constraints

Schedule Constraints

The project will be completed in a 2.5 week period.

Budget Constraints

The project has a budget of $0.
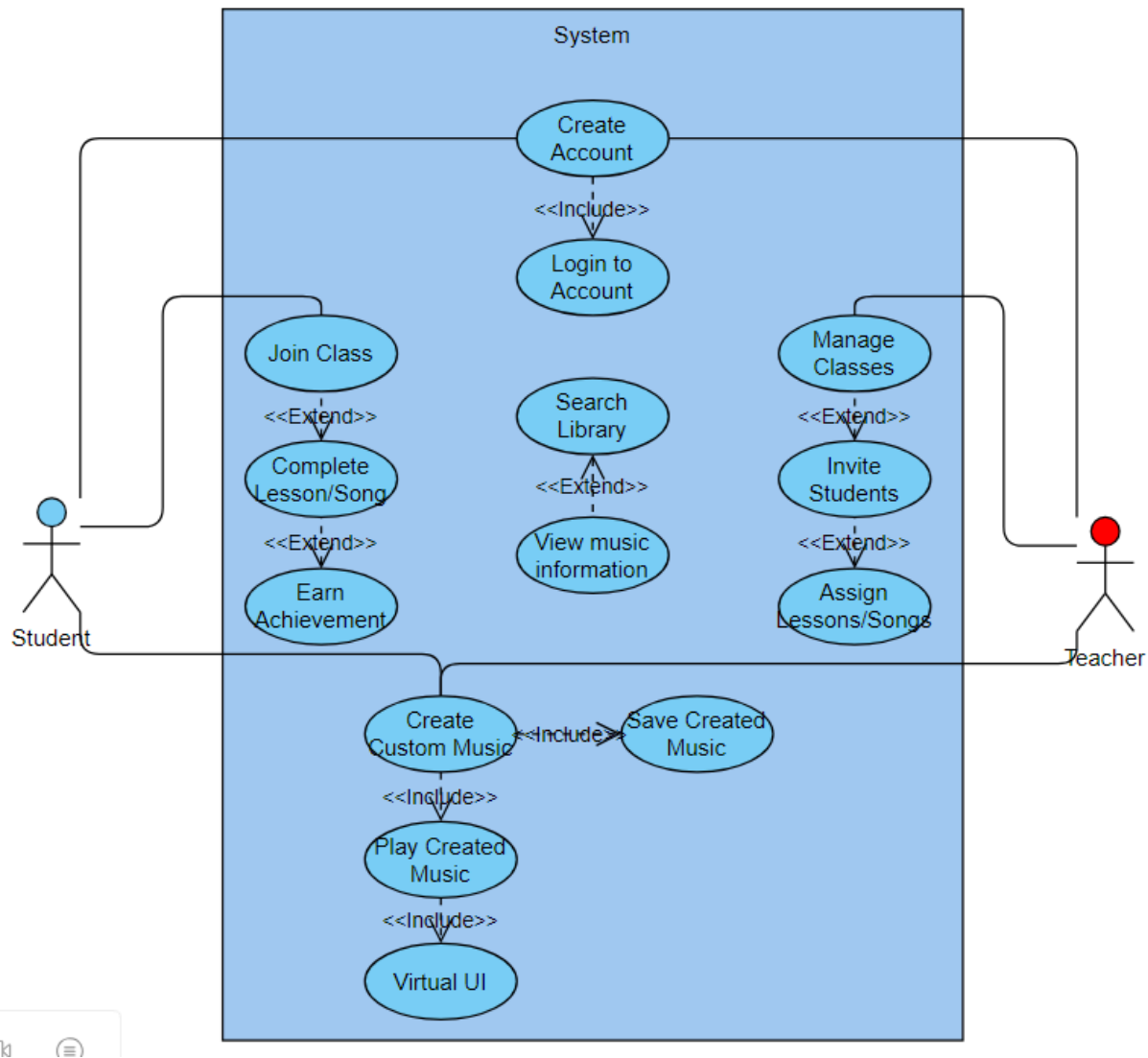
Technical Constraints

The app shall be coded in Java.

The app shall be available on computers.

4. Overall Description

The system will be an app that will teach users how to play guitar. The app shall have a library of sheet music that the user can learn to play. It must be able to play the music so that the user can hear how the music is supposed to sound and give instructions to the user on how to play. The app will teach the user on a virtual fretboard to demonstrate finger placement and the proper strings.

5. Business Use Cases

6. Functional Requirements

Requirements Spreadsheet

7. Non-functional Requirements

See page 2 of Requirements Spreadsheet

9. Competitive Analysis

Considering the strengths and weaknesses of MuseScore, Flowkey, and Flat, it's important for our app to adopt the strengths of the competition but also build on their weaknesses. The strengths of the competitors like MuseScore and Flowkey lie in the fact

that there's a wider range of instruments the user can learn ranging from piano to other string instruments like the guitar. MuseScore and Flat's capacity for having an active online community also allows for a wider library of sheet music to be available to users. A strength of all 3 would be their cross platform capabilities along with their user friendly interfaces. As a drawback, products like MuseScore and Flowkey require additional subscriptions to gain access to more advanced features that the user might find helpful, in contrast to Flat which is a fully free app. It's also important to bring in the learning portion into the apps, so simply having just pause/start capabilities like Flat might not be the most useful for users wanting to learn.

Feature	App: MuseScore	App: Flowkey	App: Flat
Core Functionality:	Allows users to read and create sheet music	Teaches piano through interactive lessons and tutorials as well as interactive sheet music	Offers interactive sheet music with pause/start capabilities
Library:	Access to over 1.5 million pieces of sheet music for most instruments	Moderate library of modern and classical pieces, many different genres	Moderate library of modern and classical pieces spanning various genres
Instrument Coverage:	Supports most instruments like piano, guitar, etc	Piano ONLY	Supports most instruments like piano, violin, harp, etc
Learning Capabilities:	Includes playback, highlighting notes, tempo adjustments, etc	Visual aids, step by step tutorials, microphone to listen	Pause start capabilities with sheet music
User Interface:	User friendly, requires sign in, interface is easy to navigate	User friendly, requires sign in, beginner friendly interface	User friendly, requires sign in, useful for experienced musicians
Community	Active online	No community	Active online

Features:	community for sharing music	features	community for sharing music
Pricing:	Free, but there is a premium subscription for more advanced tools for $8.33/month	Subscription based (3 plans for $9.99, $14.99, & $22.49), free 7 day trial included	Free to use
Platform Support:	iOS, Android, macOS, Windows, Web	Web, iOS, Android	Web, iOS, Android