ukuApp - An Android Learning Environment for Beginner Ukulele Players

Maria Nestor, Adrian Iftene

Abstract

ukuApp is an application made for helping beginners who study the ukulele, an application that has a tuner and a component for learning the basic chords. Moreover, it has an integrated feature where each user can contribute known songs along with their chords. The application is designed to minimize the number of applications needed for learning this instrument, by having integrated the most important parts for a beginner to start with.

Keywords: ukulele, Android, Learning.

1 Introduction

1.1 What are ukuleles?

A *ukulele* is a four-string musical instrument, similar to a guitar. The origin of this word comes from Hawaiian, and is translated to "jumping flea". This instrument was brought to Hawaii by the Portuguese immigrants. The locals were fascinated by the rapid finger movements of the players and came up with the name "ukulele", where "uku" translates to "flea" and "lele" to "jumping" [1].

Nowadays, ukulele's popularity comes from famous songs such as *"Somewhere over the Rainbow"*[1], *"I'm Yours"*[2], *"Hey, Soul Sister*[3],

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[1]Performed by Israel Kamakawiwo'ole - https://www.youtube.com/watch?v=V1bFr2SWP1I&ab_channel=MountainAppleCompanyInc

[2]Performed by Jason Mraz - https://www.youtube.com/watch?v=EkHTsc9PU2A&ab_channel=JasonMraz

[3]Performed by Train - https://www.youtube.com/watch?v=kVpv8-5XWOI&ab_channel=TrainVEVO

and from their exposure by known singers such as *Elvis Presley*, *Jake Shimabukuro*, or *Israel Kamakawiwo'ole*.

The ukulele is a member of the lute family of instruments, the same as the Mandolin, Banjo, or Cobza. It is made of wood or plastic, and it resembles a small acoustic guitar, which sets it apart from other instruments in its family. The exception is the pineapple ukulele, which has the shape of a lute. The ukulele has four strings and comes in different sizes. The common ukuleles are soprano (known as standard ukulele), concert, tenor, and baritone.



Figure 1. Most common types of ukulele[4]

1.2 Similar Applications

Ukulele Tuner protect[5] – This application serves as an essential tool for ukulele enthusiasts, offering a versatile tuner with a range of tuning options, such as D-Tuning, Low G, and Standard, among others. Beyond its tuning capabilities, it provides a comprehensive chord

[4]Image source: `https://mississaugafineartsacademy.com/ukulele-lessons-mississauga/`

[5]`https://play.google.com/store/apps/details?id=com.myrapps.ukuleletools`

library, catering to the needs of ukulele players at any skill level. Its user-friendly interface makes it not only simple to use but also indispensable for achieving pitch-perfect sound quality.

Pocket Ukulele[6] – This application has a large collection of ukulele chords, making it an invaluable resource for musicians of all levels. With its intuitive interface and user-friendly design, it caters to both beginners and advanced players alike. Featuring over 5000 ukulele chord diagrams, it serves as a comprehensive tool for learning new chords or refreshing one's memory of familiar ones. Its simplicity and effectiveness make it an indispensable companion for anyone looking to enhance their ukulele skills.

Ukulele Tabs[7] – This is the mobile application of the website Ukulele Tabs and Chords[8]. It stands as the most extensive repository of ukulele tabs and chords, frequented by thousands of players seeking musical inspiration. One of its standout features is its open platform, allowing any user to contribute to its vast collection of songs. This collaborative approach enables users to learn their favorite tunes while also offering a platform to share tabs and chords for songs not yet included in the collection. Through this interactive community, players can both enrich their musical repertoire and assist others in their musical journeys.

2 Application Architecture

The ukuApp application has 18 activities and 3 dialogs. They are structured into four main modules: tuner module, community module, lessons module, and test module. To reach them, the user meets the *Main Activity*. This activity contains a TextView having the title of the application (*ukuApp*) and four buttons to access, in order: (1) the tuner module, (2) the community module, (3) the lessons module,

[6] `https://play.google.com/store/apps/details?id=com.ukulelechords`
[7] `https://play.google.com/store/apps/details?id=com.ukuleletabs`
[8] `https://www.ukulele-tabs.com/`

and (4) the test module (see in Figures 2 and 3 the main and tuner activities).

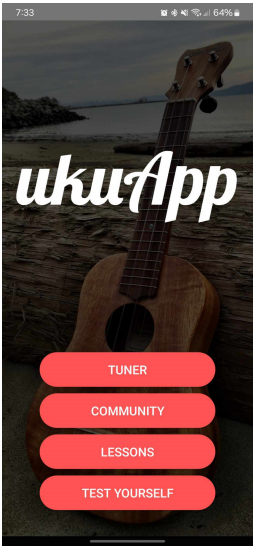


Figure 2. Main Activity

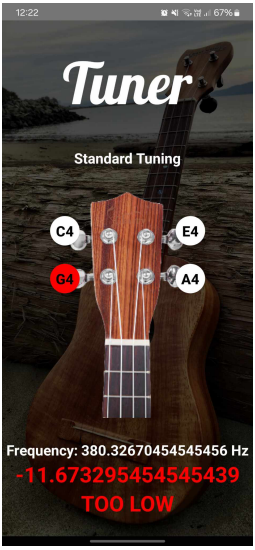


Figure 3. Tuner Activity

The DiagramDialog is made to show the image resource of the chord (see Figure 4). The user can see how their fingers should be positioned on the ukulele and can then play the chord. The InfoDialog is created to explain the CardViews' functions for the users to understand what every button does (see Figure 5).

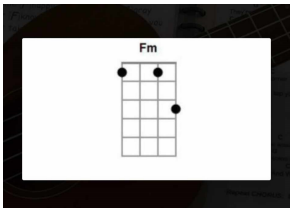


Figure 4. Diagram Dialog



Figure 5. Info Dialog

For testing this application, a Google Form was created. The role of this form is to collect suggestions from real users, to make this application better and more user-friendly. This form has multiple-choice questions (mostly) and open questions. This form was applied to persons having experience in ukulele and/or guitar or no experience at all. In this testing process, five persons participated, between 18 and 44 years old, two males and three females. 20% of the respondents have already some experience, and the rest of 80% have no experience at all. They appreciated the applications and come with two interesting suggestions: (1) in the Lessons Module, an indicator for when the mic is working; (2) in the Community Module, for each song to add the chords used. Overall, the application has fulfilled its mission. Its functionalities were helpful for beginners (based on their reviews and the reviews coming from those with experience). The application is intuitive and useful for the target users.

3 Conclusions

The *ukuApp* application gives the possibility for anyone to learn the ukulele without a professor. It brings together three important areas in the learning process so that the user has everything they need at their fingertips for their journey. The user can tune their instrument using the integrated tuner, they are assisted in the process of learning the most important chords using the lessons and test areas and can learn their favorite songs or can contribute with one in the community zone. So, the user has the opportunity to learn this beautiful instrument – the ukulele.

This application can be extended in each of the zones. In the future, it can have more types of tunings that can be helpful even for those who already have experience in playing the ukulele. The lesson area can be extended with more chords, and the test one can be developed for users to create their personalized test. The community can also be further developed in a social application so that any user can help directly any other user in their ukulele learning journey.

References

[1] S. Webster. *Why is the Ukulele Called the Jumping Flea?*. Mixing a Band, 2023. https://mixingaband.com/why-is-the-ukulele-called-the-jumping-flea/.

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