**Introduction**

1. Purpose: The purpose of this document is to be an outline for development of a music theory app.
2. Conventions: Having an understanding of music theory will be an advantage for understanding some concepts in this document.
   1. Interval: Distance between two musical notes.
   2. Scale: A series of intervals with musical significance.
   3. Mode: Essentially a type of scale.
   4. Chord: Three or more notes played together.
   5. Chord Progression: Series of chords.
   6. Key Signature: Dictates which notes will be used in a piece of music.
3. Intended audience: Beginner to intermediate musicians that want to practice music theory or ear training.
4. Scope: App will cover a broad range of music theory topics such as ear training and scale/mode identification.

**Overall Description**

1. Product Features:
   1. Ear training
      1. Interval identification
      2. Scale identification
      3. Chord progression identification
   2. Key signature identification
   3. Scale/mode creation
   4. Database that tracks user progress, i.e. will give feedback on how a user does in certain areas. For example, the database will track the rate of successfully identifying a minor second, tritone, phrygian scale, etc.
2. Operating environment: App will be developed in Android Studio in Kotlin.
3. Design implementation constraints: It may be difficult finding recordings of the needed audio samples.

**System Features**

1. Description and priority: This app will be for beginner - intermediate musicians that wish to improve their music theory and ear training skills. The ear training module will allow for interval, scale/mode, and chord progression identification. The user will be able to choose which interval, scale/mode, and chord progression to use.

The scale creation module will allow the user to select which scales they want to practice, then have a musical staff that allows the user to create the scale. Key signature identification will allow users to select which key signatures they would like to be tested on. Chord identification will allow users to select which chords they want to be tested on.

App will also keep track of successful identification for each identification. For example, the app will keep track of the success rate of successfully identifying an audio recording major second interval, a tritone, a minor scale, a I-IV-V chord progression, etc.

1. Stimulus: App will be manually opened by the user selecting the app. (The “standard” way of opening an app.)
2. Use cases: