Yuval Greenberg – 211994082

Orel Emuna – 208947036

**Detailed Requirements**

**Functional Requirements**

1. **User Registration and Profile Setup**
   * **Function**: Users can create an account and set up a profile with details like name, skill level, and preferred genres.
   * **Requirements**:
     + Account creation through email, social media, or guest login.
     + Users will input which chords they already know and their favorite music genres.
     + Store user preferences and progress.
2. **Learning Path Customization**
   * **Function**: Based on the user's input (known chords, genres), the app suggests a personalized learning path.
   * **Requirements**:
     + Suggest songs and exercises that match the user’s skill level and musical preferences.
     + Gradually introduce new chords as the user progresses.
     + Difficulty levels (easy, intermediate, hard) of songs with chord progression.
3. **Song Database**
   * **Function**: A diverse database of songs of various genres and difficulty levels.
   * **Requirements**:
     + Database includes song names, artist, chords, and genre.
     + Database tags songs by difficulty, chord complexity, and genre.
4. **Dynamic Chord Display**
   * **Function**: While the song plays, the app displays the chords the user needs to play in real-time.
   * **Requirements**:
     + Display current chord and next chord with a visual representation.
     + Real-time updates in sync with the song.
     + Option to adjust tempo for easier practice.
5. **Progress Tracking and Goal Setting**
   * **Function**: Track user progress over time and help set clear learning goals.
   * **Requirements**:
     + Record completed lessons, songs, and learnt chords.
     + Provide feedback and show the percentage of the song learned.
     + Set goals like "Learn X new chords" or "Complete Y songs."
     + Display milestones and achievements.
6. **Integration with Music Streaming Services**
   * **Function**: Integrate with Spotify for real-time song playback.
   * **Requirements**:
     + Sync song progress with the app.
     + Display real-time chord changes during song playback.
     + Option to pause, play, or skip songs directly from the app.

**Non-Functional Requirements**

1. **Performance**
   * **Function**: Ensure fast response times for user interactions and minimize delay in loading songs, chords and data.
   * **Requirements**:
     + Response time for any action (e.g., loading a song or calculating progress) should be under 2 seconds
     + The app should handle multiple simultaneous users without performance degradation
2. **Gamification Features**
   * **Function**: Gamification to motivate the user, similar to Duolingo’s approach.
   * **Requirements**:
     + Points, badges, and rewards for completing tasks.
     + Daily streaks or challenges to keep the user engaged.
3. **Scalability**
   * **Function**: Allow the app to handle a growing number of users, songs, and progress data without affecting performance.
   * **Requirements**:
     + The system should scale to support 200 users and 500 songs without performance issues.
4. **Compatibility**
   * **Function**: Ensure the app is compatible with current mobile operating systems and third-party services.
   * **Requirements**:
     + The app should support the latest versions of iOS and Android.
     + It should work seamlessly with external services like Spotify for integration.

**Stakeholders**

1. **End Users (Guitar Learners)**
   * **Role**: Primary users of the app who will learn to play.
   * **Functions**:
     + Set up their profile and preferences.
     + View and track progress.
     + Follow learning paths, practice with songs, and complete exercises.
     + Set personal goals.
2. **Administrators**
   * **Role**: Manage app content, user accounts, and overall app maintenance.
   * **Functions**:
     + Manage song database, add new songs, categorize, add/remove songs, and update chords and genre information.
     + Ensure the song database is accurate, diverse, and well-organized.
     + Monitor user activity and progress.
3. **Developers (Orel and Yuval)**
   * **Role**: Design, develop, and maintain the app.
   * **Functions**:
     + Code the app features (learning paths, chord display, progress tracking, etc.).
     + Implement the real-time chord display, gamification features, and music streaming integration.
     + Ensure the app is responsive and works on both iOS and Android.