**Project Title:** MusicApp - Android Music Application

**Team #:** Team

**Team Members:**

* Dang-Quang Nguyen
* Joshua Layokum

**Team Members Working on the Proposal:** Dang-Quang Nguyen

**State the Problem/Issue to Resolve:** The problem to be resolved is the lack of a comprehensive and user-friendly music application for Android devices. Existing music apps may lack certain features, have complicated user interfaces, or suffer from performance issues. Users often seek an all-in-one solution for managing their music library, discovering new songs, and enjoying personalized playlists [1].

**Survey of Previous Works:** A survey of previous works reveals various music applications for Android, including popular options like Spotify, Apple Music, and Google Play Music. While these apps offer extensive music libraries and features, they may require paid subscriptions for full access. Additionally, some users prefer open-source alternatives like VLC Media Player or Shuttle Music Player for their simplicity and customization options [2].

**Assumptions/Operating Environments/Intended Usage:**

* Assumptions: The proposed application assumes that users have Android devices running on versions 5.0 (Lollipop) or higher and access to the internet for streaming music.
* Operating Environment: The application will be developed for Android devices, compatible with smartphones and tablets.
* Intended Usage: Provide a seamless and enjoyable music listening experience for users, allowing them to discover new music, create playlists, and enjoy personalized recommendations.

**High-Level Description of the Solution:** Our solution is to develop MusicApp, an Android music application that combines a sleek user interface with powerful features for managing and enjoying music. The application will be designed using object-oriented principles to ensure scalability, modularity, and ease of maintenance. We will adopt an agile development approach, starting with user research and requirements gathering, followed by design, implementation, testing, and deployment. The application will leverage modern Android development frameworks like Kotlin and Jetpack to ensure compatibility and performance.

**Functionality:**

1. Music Library Management:
   * Import and organize music files from device storage.
   * Automatically fetch metadata and album artwork
   * Create custom playlists and organize songs by genre, artist, or album.
2. Streaming and Offline Playback:
   * Stream music from online sources like Spotify, SoundCloud, or YouTube Music
   * Support offline playback for downloaded songs and playlists.
   * Cache frequently played songs for quick access.
3. Personalized Recommendations:
   * Offer personalized recommendations based on listening history and preferences.
   * Generate curated playlists and radio stations tailored to user tastes.
   * Integrate with social media platforms for music sharing and discovery.

**Operations:**

* User:
  + Browse and search for songs, albums, and artists.
  + Create and manage playlists.
  + Discover new music through personalized recommendations.
* Administrator:
  + Manage user accounts and permissions.
  + Monitor app usage and analytics.
  + Resolve user issues and provide support.

**References:**

1. Gopinath, S. (2019). Design and Implementation of an Android Music Player Application. *International Journal of Computer Applications*, 180(45), 18-22.
2. VLC for Android. (n.d.). Retrieved from https://www.videolan.org/vlc/download-android.html.