Practice 10k Music App

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Outline

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Description

● A Practice Music Mobile Application
  ○ Compatible on IOS & Android

● All-in-One Application for Practice Needs
  ○ Plans weekly practice sessions
  ○ Initiates/Records daily practice sessions
  ○ Tracks progress

● Concept created by VT Professors
  ○ Dr. Annie Stevens & Dr. John Irrera

Figure 1: Application’s Home Screen
Planning Portal Feature

Figure 2: Application’s Home Screen
Planning Portal Feature

Figure 3: Application's Add New Plan Modals
Practice Portal Feature

Figure 4: Application’s Practice Screen
Practice Portal Feature

Figure 5: Application’s Progress Screen
User Accounts Feature

Figure 6: Application’s Start, Login and Reset Password Screens
User Accounts Feature

Figure 7: Application’s Register Screen
User Accounts Feature

Figure 8: Application’s Profile Screen
User Accounts Feature

Figure 9: Application’s Edit Profile Screen
Figure 10: Application’s Journal and Practice Details Screens
Practice Timer Feature

Figure 11: Application’s Practice Timer Screen
Music Pieces Memory Feature

Figure 12: Application’s Add Previous Plan Modals
Tools

- Github: For an organized collaboration process
- Expo: For rapid visualization during application development
- Typescript: For code reliability with type checking
React Native
For cross-platform compatibility

Redux
For efficient local data storage

Firebase
For authentication and data management
Data Management

Collection of User Data
- Profile Picture,
- Name,
- Email,
- Date of Birth,
- Instruments
- Musical Level

Collection of Music Pieces Data
- Title
- Piece Name
- Composer Name
- Instrument
- Notes

Collection of Practice Plans Data
- Music Piece Detail
- Status
- Duration
- Practice Date
Future Development

- Add metronome and tuner on practice page
- Gamifying app
  - Challenge friends to practice
  - Profile badges
  - Add friends as practice buddies
- Potentially change backend
  - Switching backend to be an express.js api
  - Makes it possible to easily switch to MongoDB from Firebase
- **Ultimate goal is to deploy app to App Store and Google Play**
Takeaways

Challenges
- Learning new tools
  ○ Ex: firebase, redux, react native
- Reducing Firebase reads
  ○ Frequent calls to Firebase for practice data
- Defining and planning features based on clients’ needs

Lessons
- Plan the development order early
  ○ Adding practice data to the backend was one of the last items implemented
- Make sure to accurately estimate capacity for work
  ○ We were able to deliver the 5 promised deliverables
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References


