Practice 10k Music App

CS4624: Multimedia, Hypertext, and Information Access
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November 14th, 2023

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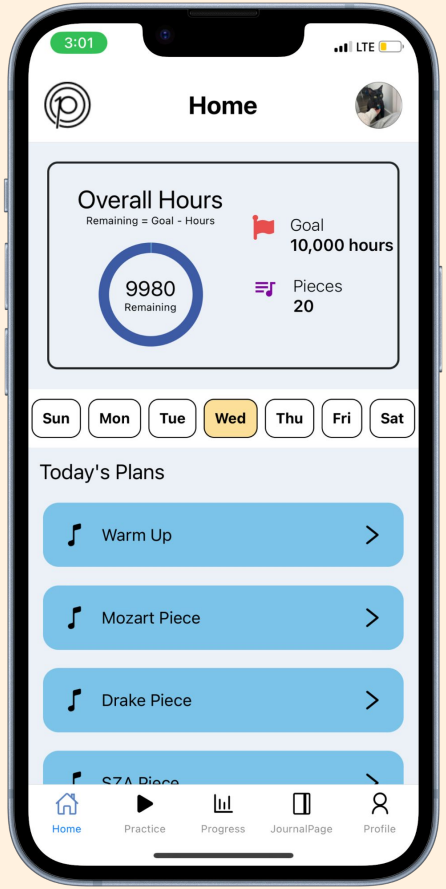


Figure 1: Application's Home Screen

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

Deliverables

Planning/Practice Portal

User Accounts

Practice Plan History

Practice Timer

Music Pieces Memory

Planning Portal Feature

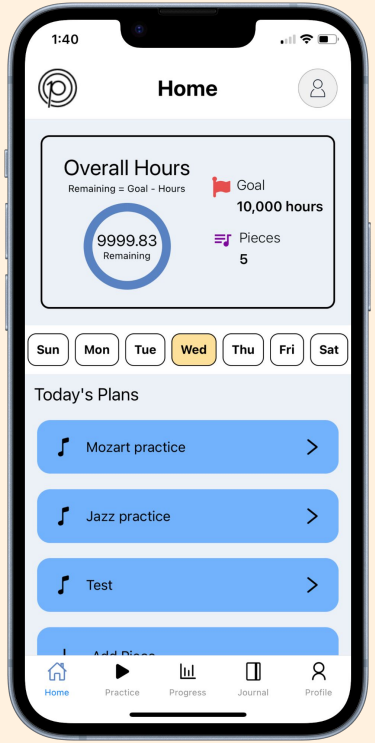


Figure 2: Application's Home Screen

Planning Portal Feature

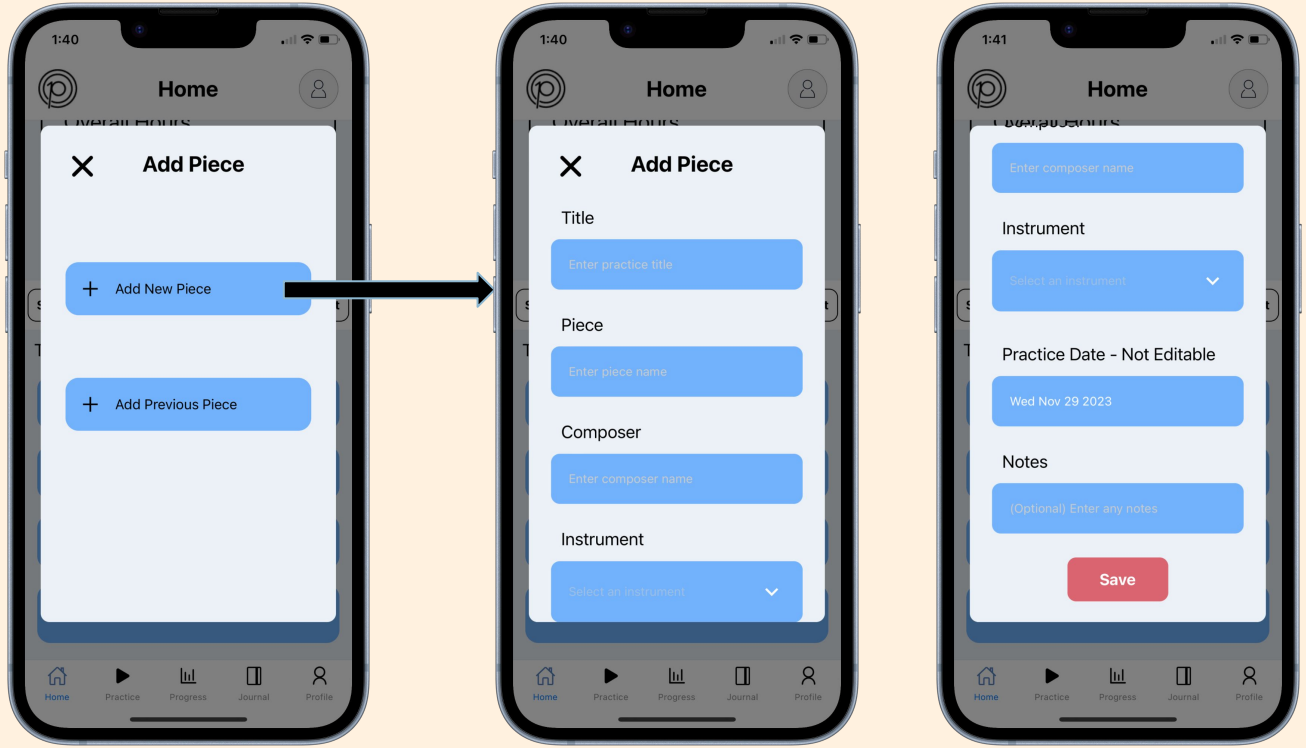


Figure 3: Application's Add New Plan Modals

Practice Portal Feature

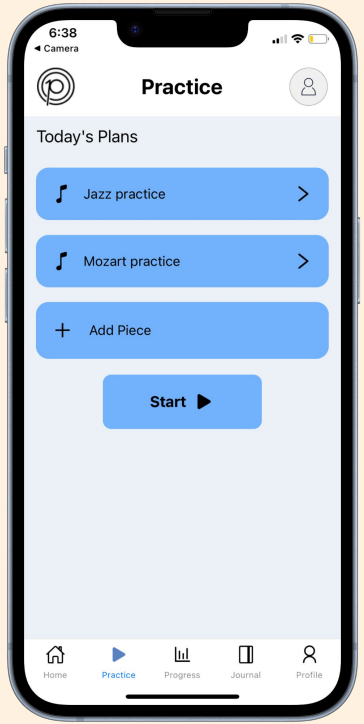


Figure 4: Application's Practice Screen

Practice Portal Feature

Figure 5: Application's Progress Screen

User Accounts Feature

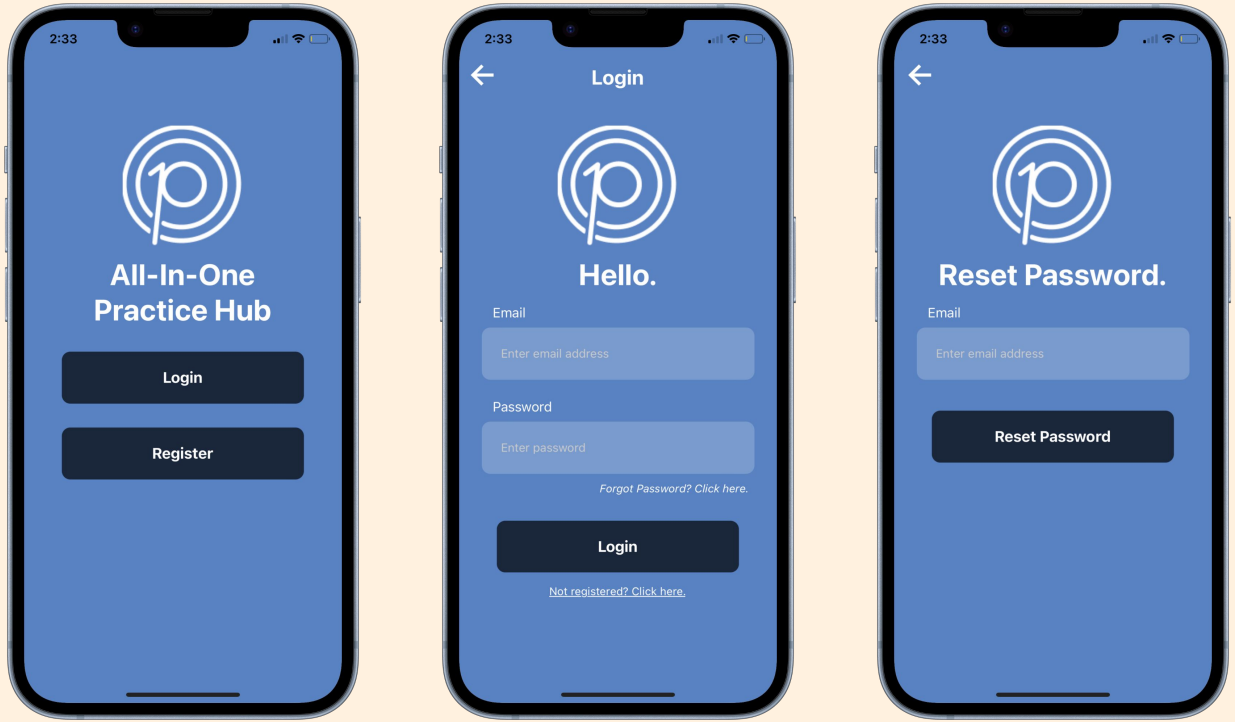


Figure 6: Application's Start, Login and Reset Password Screens

User Accounts Feature

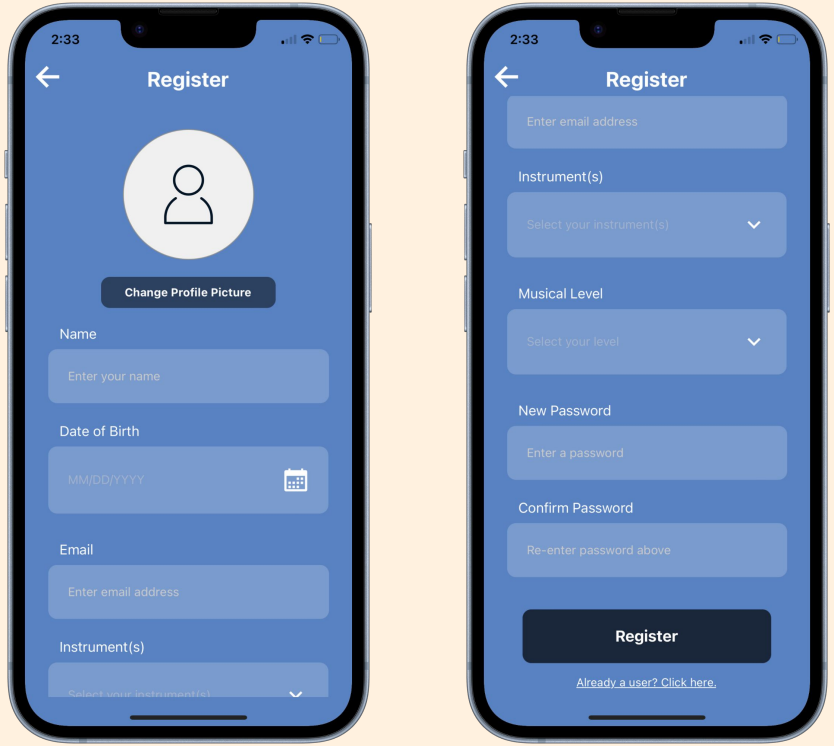


Figure 7: Application's Register Screen

User Accounts Feature

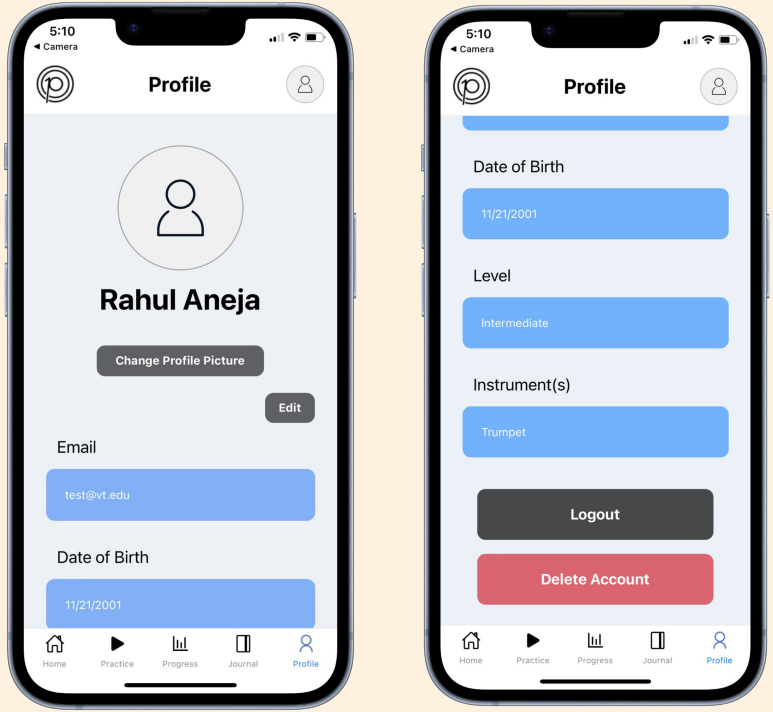


Figure 8: Application's Profile Screen

User Accounts Feature

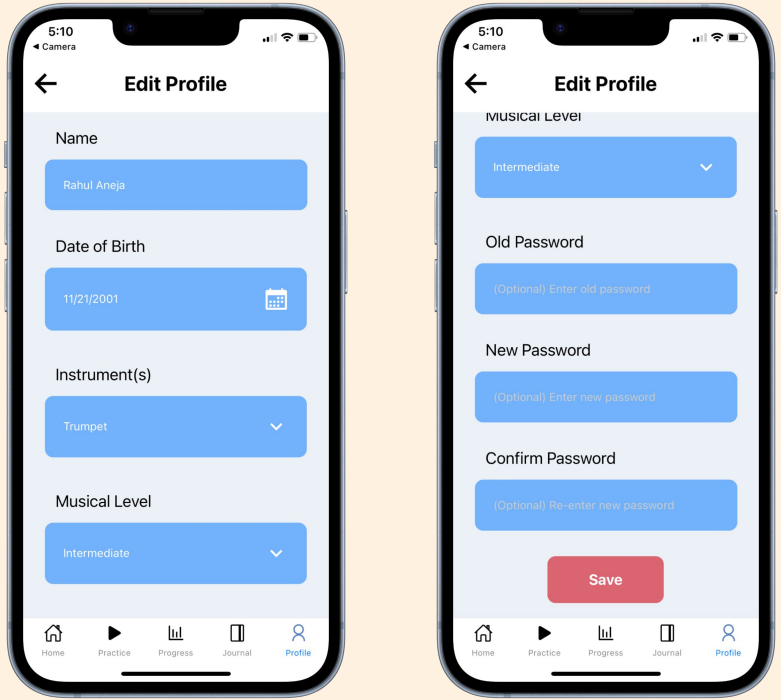


Figure 9: Application's Edit Profile Screen

Practice Plan History Feature

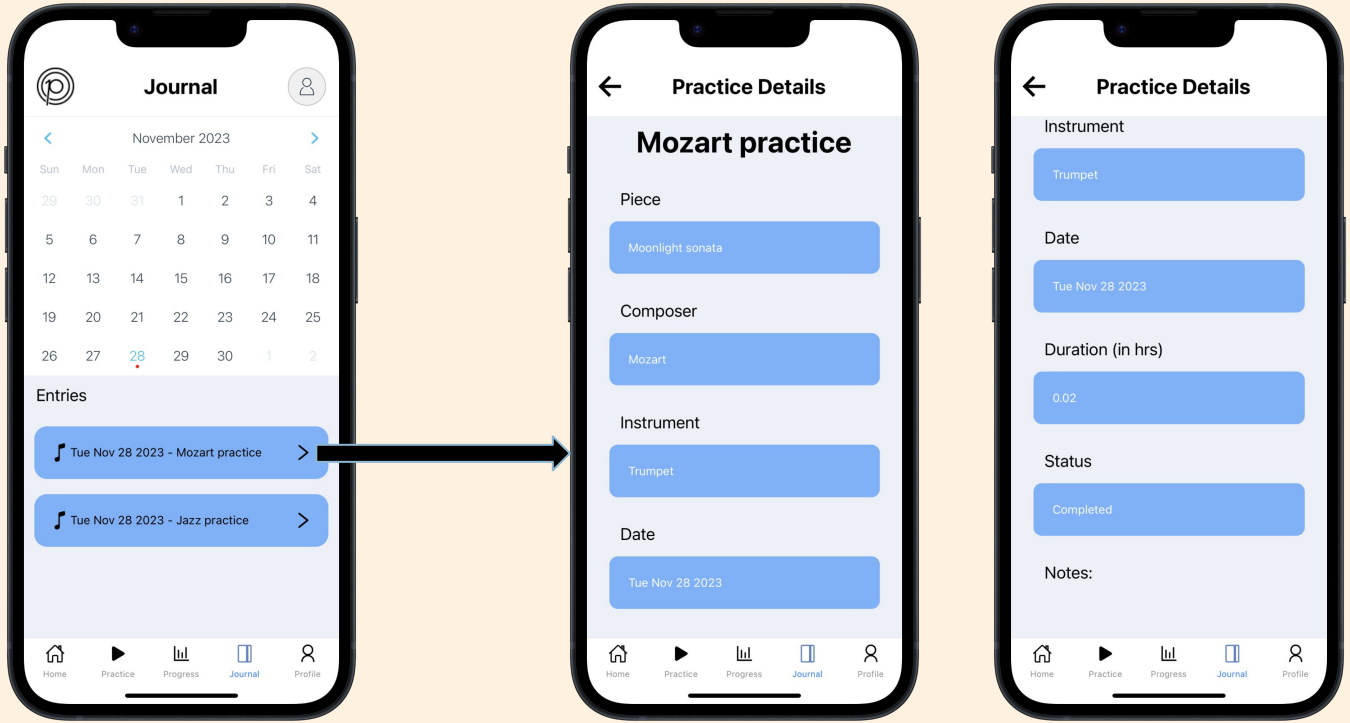


Figure 10: Application's Journal and Practice Details Screens

Practice Timer Feature

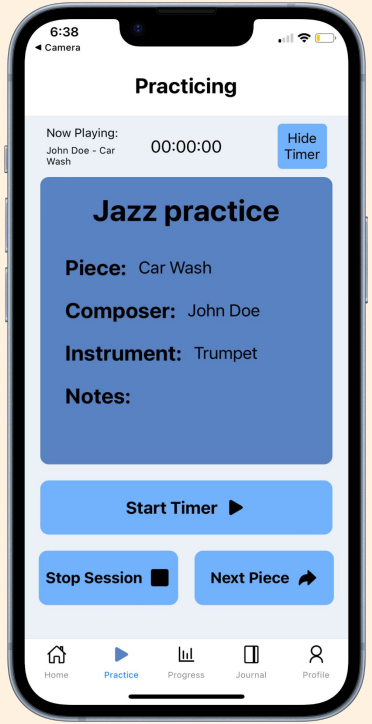


Figure 11: Application's Practice Timer Screen

Music Pieces Memory Feature

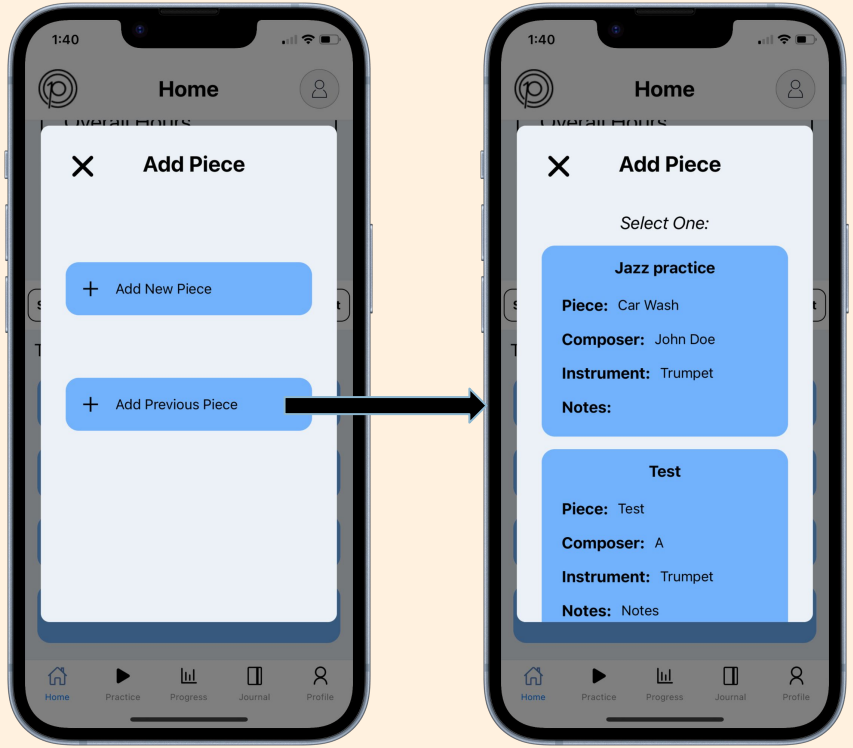


Figure 12: Application's Add Previous Plan Modals

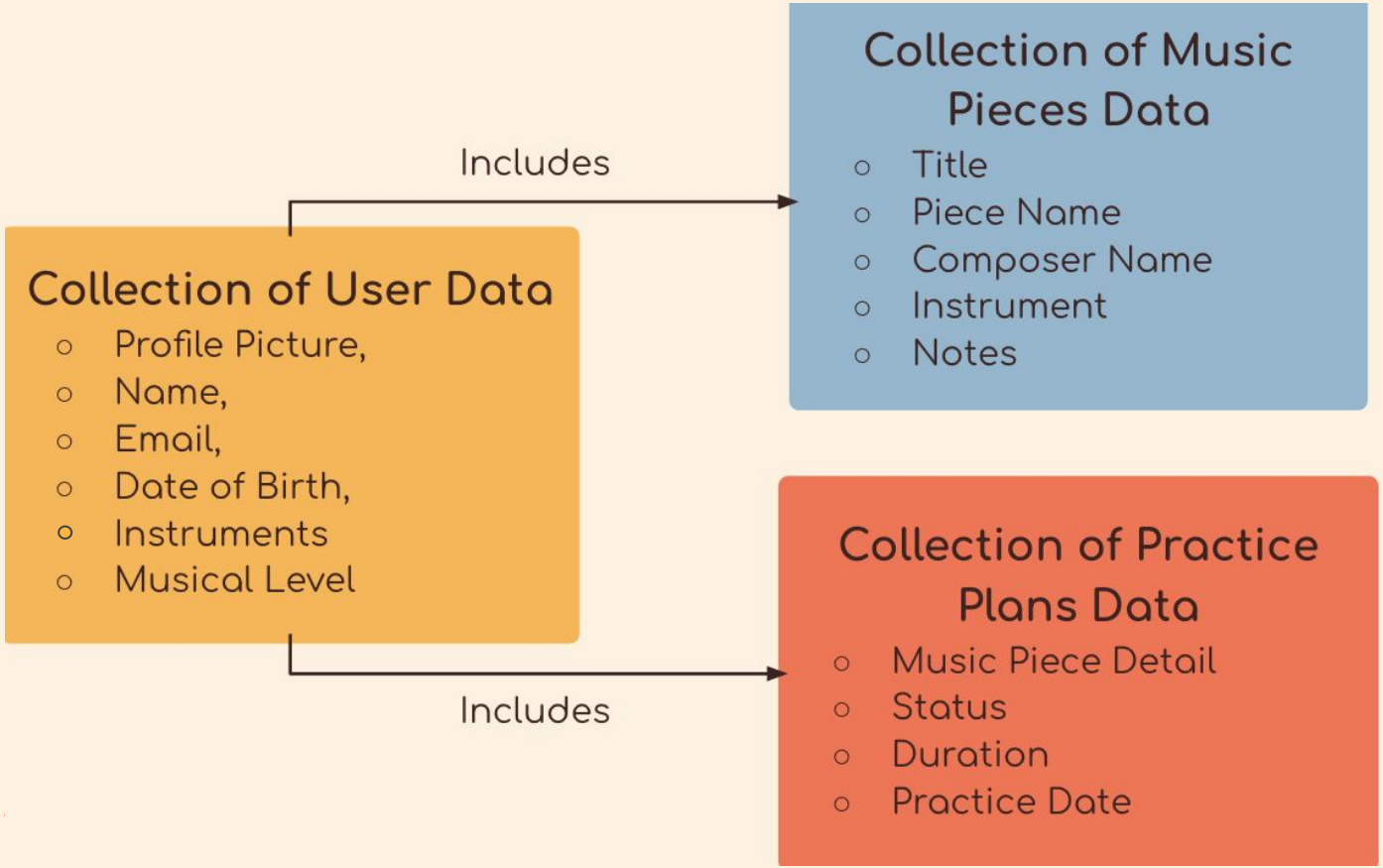
Tools

Github	For an organized collaboration process
Expo	For rapid visualization during application development
Typescript	For code reliability with type checking

Tools

React Native	For cross-platform compatibility
Redux	For efficient local data storage
Firebase	For authentication and data management

Data Management



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

Acknowledgements

Dr. Annie Stevens

Percussion Professor at Virginia Tech

Ben Winters

Technical Consultant

Dr. John Irrerea

Assistant Professor of Violin at Virginia Tech

Dr. Mohamed Farag

Computer Science Professor at Virginia Tech

References

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