

Trivia Trek

by Homestead FBLA

Mobile Application Development 2019

<https://samrudhshenoy.github.io/triviatrek/>

<https://www.github.com/arthurlafrance/MustangGame>

Created by Arthur Lafrance, Raj Raghulan, and Samrudh Shenoy

**If you are viewing this file from Dropbox, please download the master zip to your Downloads folder and read the following content:*

[IMPORTANT NOTES]:

- ***When running, a network connection must be present, so that Trivia Trek can successfully access its online resources***
- ***Our app is thoroughly debugged and error-free, but should one be discovered:***
 - Restart the app if necessary
 - Please feel free to utilize the bug reporting system integrated into the app to alert us about the issue

Overview and Topic/Problem Correlation

Trivia Trek is designed to provide an entertaining and educational interface to test a member's knowledge in 5 distinct

categories of FBLA:

- Competitions
- Conferences
- Projects
- FBLA History
- Officers

However, rather than solely implementing a basic question-answer system, we integrated this traditional method into a digital board game to provide a more refreshing, entertaining, and engaging experience for the user.

This app was written in Apple's Swift language, version 4.2.1, using Xcode version 10. In addition, dependencies were installed using Cocoapods, written in Ruby. Finally, the app's backend was implemented via Google's Firebase database, with the accompanying code written in Swift as well.

Key Features

- Secure and powerful Firebase database to store necessary information both publicly and privately
- Documented and straightforward code
- Multiple tutorial/instruction pages within the app to help

guide users through its features when necessary

- Clean user interface designed with both visual appeal and convenience in mind
- Flexible infrastructure, allowing users to choose between different maps and avatars for a unique experience every game
- Feedback system to ensure that the user can notify developers of any comments or concerns, such as the discovery of a bug
- Full Facebook integration to allow users to connect to social media, as well as share their experiences via post, update, or story
- Date and score gathered over the course of games to provide the user with a timeline of their progress
- Customized avatar images offered by the app

Using the app

The following are the recommended methods to use Trivia Trek for various platforms.

Prerequisites

To view the code

Xcode (recommended, requires macOS)

- Can be downloaded from the Mac App Store

Standard text editor (e.g. [AppCode](#), [Atom](#), or [Sublime](#))

- Alternative if a computer with macOS is not available

To run the application on your computer

Device that runs macOS (natively or through a VM)

Xcode/iOS Simulator (Simulator is automatically installed with Xcode)

To run the application on your personal device

iOS 9.0 or newer

- Device that runs macOS
- Xcode
- Apple Developer Account
 - Available to create at developer.apple.com
- Cable to connect mobile device to computer (Lightning to USB-A/USB-C)

Viewing the code

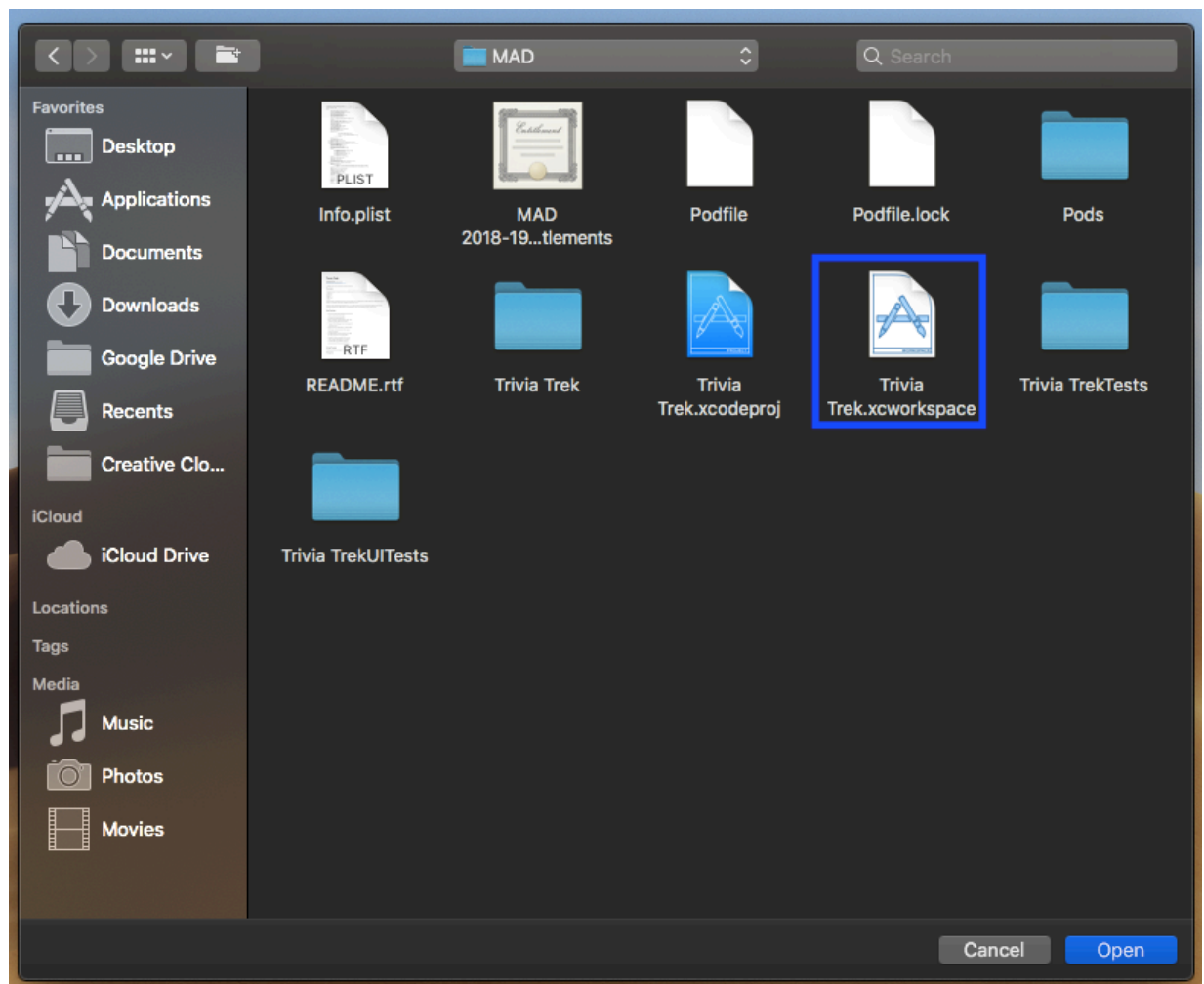
Assuming the prerequisites are met, the following details how to

open and view the application's source code:

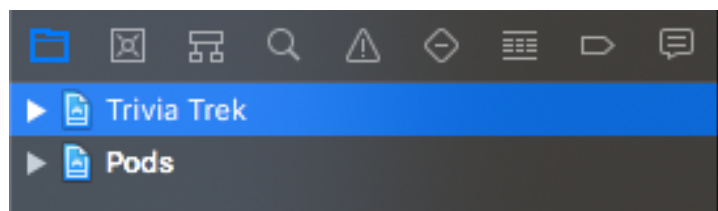
Open Xcode and select "Open another project..."



Locate and enter the submission folder, and select the white "TriviaTrek.xcworkspace" file



After opening the workspace, select the uppermost blue “Trivia Trek” file. You may see red stop signs indicating the presence of errors.

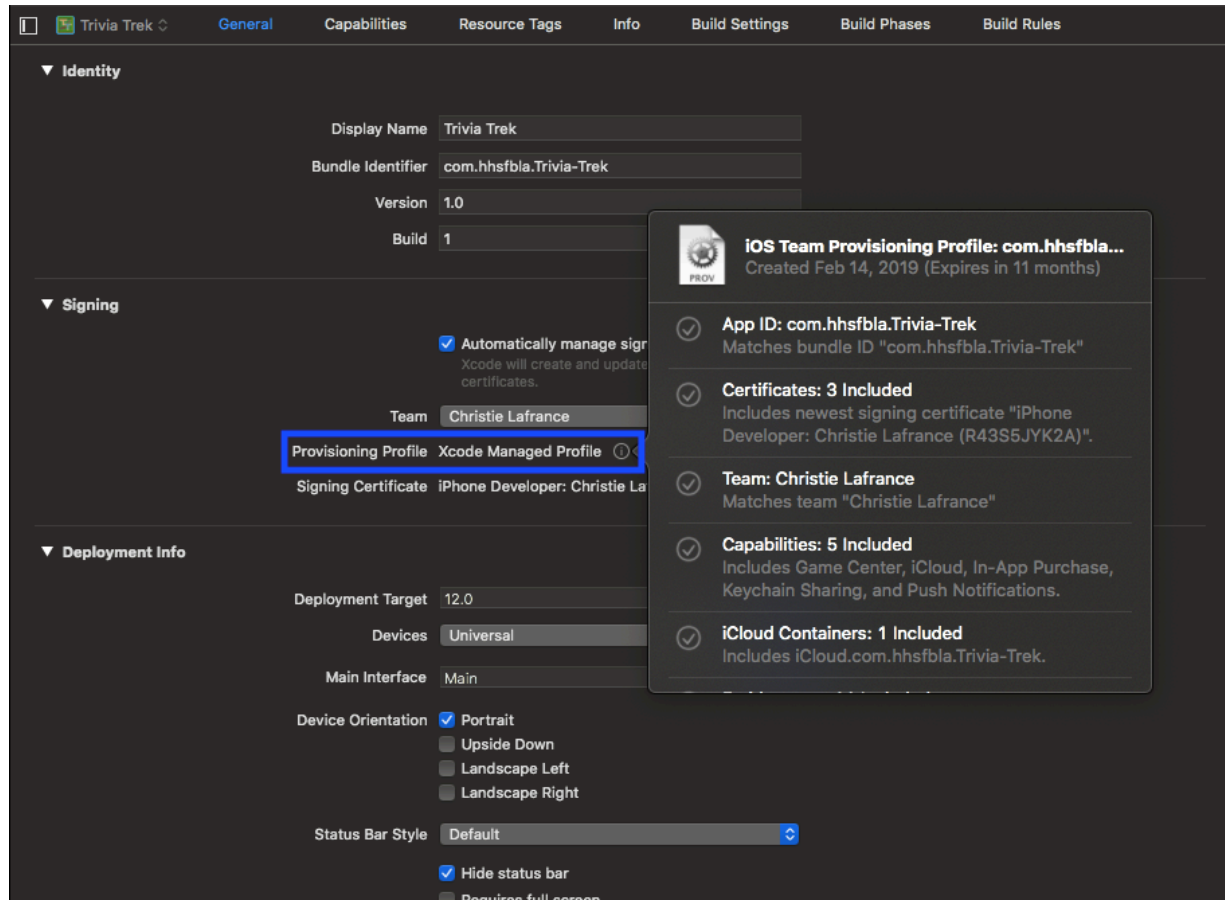


Change the provisioning profile to your own developer account (if you wish to run the application on an iPhone).

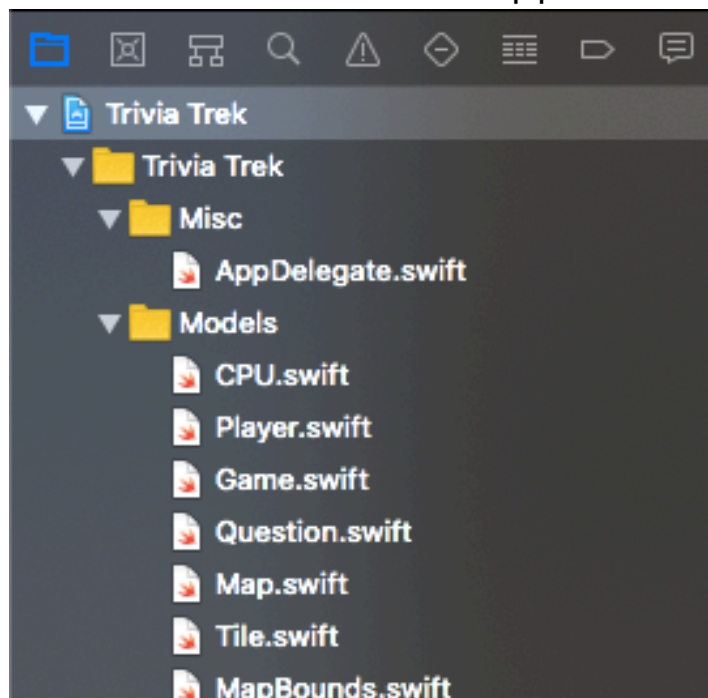
It may say “Failed to create provisioning profile.”

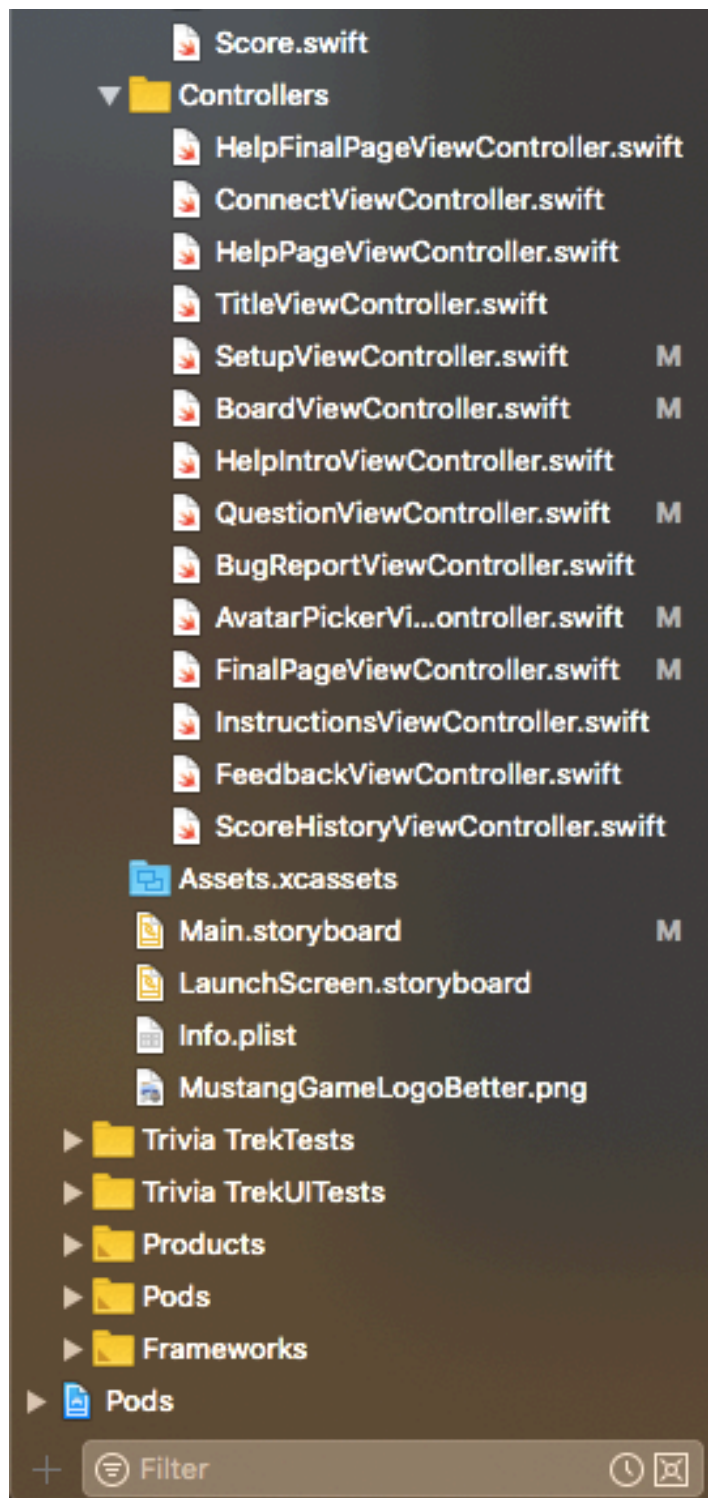
Edit the bundle identifier by adding a number to the end and

click "Try Again."



You can now view all the application's classes and storyboards.

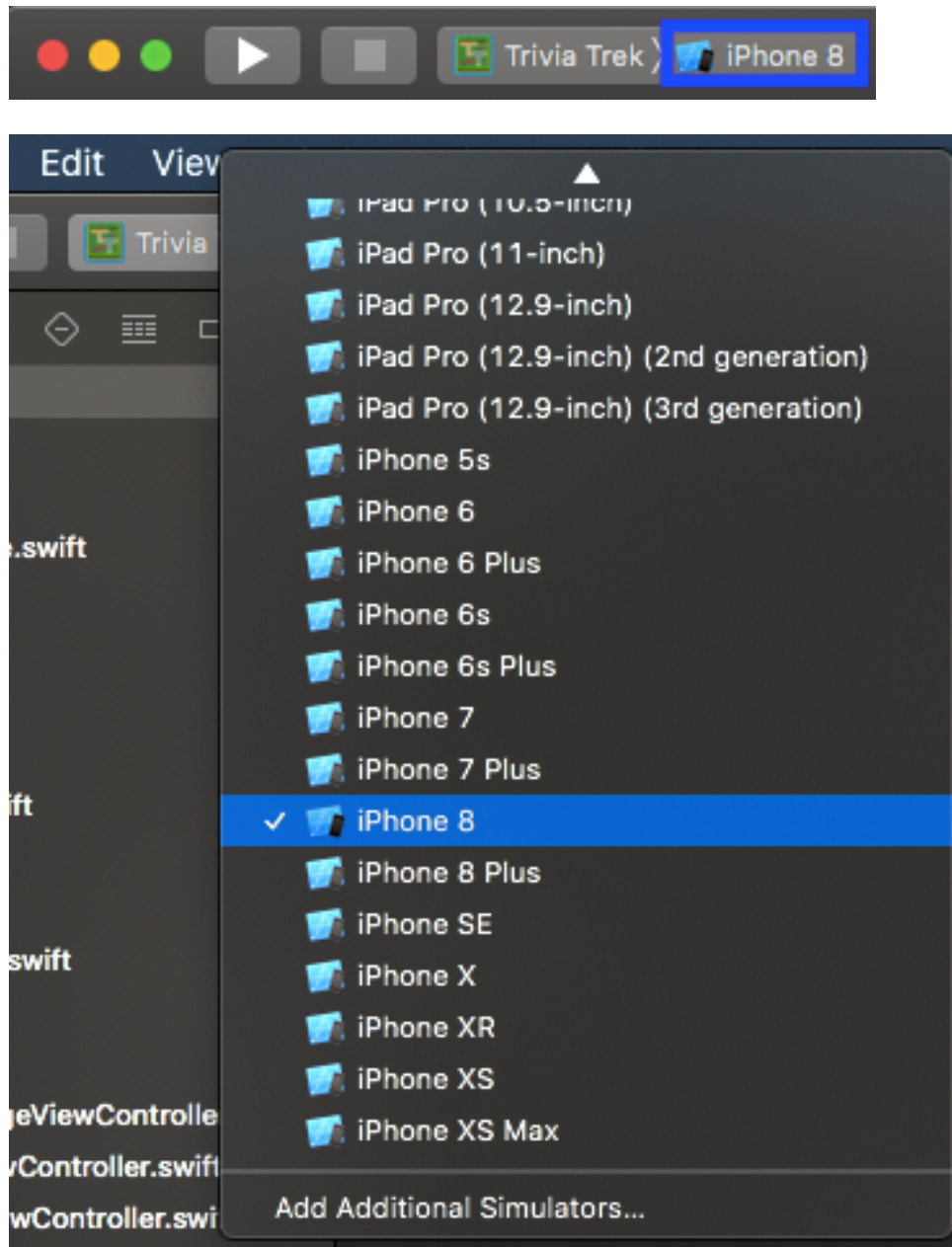




Make sure the iOS Simulator is testing the app on an iPhone 6 or newer.

*Note: It is recommended to run Trivia Trek on the iPhone 8


simulator




To directly download the app onto your phone, plug your own phone into the computer and select your phone as the desired target to download the app on your phone.

Note: You must have an Apple Developer ID and you may have to approve the application on your iPhone




Device

✓  Samrudh's iPhone

Build Only Device

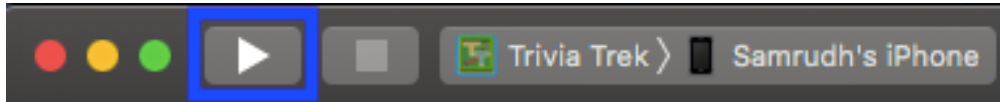
 Generic iOS Device

iOS Simulators

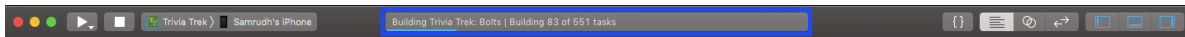
-  iPad (5th generation)
-  iPad (6th generation)
-  iPad Air
-  iPad Air 2
-  iPad Pro (9.7-inch)
-  iPad Pro (10.5-inch)
-  iPad Pro (11-inch)
-  iPad Pro (12.9-inch)
-  iPad Pro (12.9-inch) (2nd generation)
-  iPad Pro (12.9-inch) (3rd generation)
-  iPhone 5s
-  iPhone 6
-  iPhone 6 Plus
-  iPhone 6s
-  iPhone 6s Plus
-  iPhone 7
-  iPhone 7 Plus
-  iPhone 8
-  iPhone 8 Plus
-  iPhone SE
-  iPhone X
-  iPhone XR
-  iPhone XS
-  iPhone XS Max

Add Additional Simulators...

To run, press the Run button or press Command+R



The build & run status is indicated on Xcode's menu bar



After the application opens, you will be directed to the home screen after the loading screen passes.

Feel free to browse the app!

App Walkthrough

*For visual references of these pages, please refer to the included app screenshot .pdf files

Pages

- Title Page: The main menu screen containing all main navigation options which is presented upon app launch (after the loading screen)
- Setup Page: Game configuration page which opens after the Play button on the title screen is tapped
- Game Page: Gameplay screen, which launches when the Ready button on the setup page is tapped
- Progress Page: Table view of all games played, including dates as well as recorded score
- Basic Help Pages: 4 adjacent pages which present the user with a brief overview of the application which open when the Help button on the title screen is tapped

- Detailed Instruction Page: A scrolling page which presents the user with detailed app usage instructions, and opens when the Full Game Tutorial button on the last basic help page is tapped
- Feedback Page: A page where the user can input the details of a bug they find into our database (in the case that one is discovered) which pops up when the Report a Bug button on the title screen is tapped, or when the Submit Feedback button is pressed on the game end screen
- Final Page: The page which pops up after a user has successfully completed the game, with options to share their score on Facebook, submit any feedback, or return to the main menu
- Facebook Pages: Pages respective to the Facebook feature accessed when a user presses a login or share button on the screen.

Game Mechanics

The game board is comprised of 40 equidistant spaces, and is designed to resemble a choice of either a spring or winter setting, which can be selected by the user. The player moves around the game board, from the start to the finish, by answering questions. Questions are shown, along with 4 multiple choice answers, in a window which pops up at the appropriate time in the game. Based on the answer chosen by the user, the question window will either show the user that they are correct,

or reveal the correct answer if the user answers incorrectly.

Movements are dependent on an answer streak, which is built by answering questions correctly and consecutively. The answer streak is the current number of questions that the user has gotten correct in a row, and is broken when a user incorrectly answers a question. If a user correctly answers a question, their avatar moves half as many spaces as the length of their current streak, rounded up. Should they answer incorrectly, they are not penalized; rather they will simply not advance on the board. Thus, **a lesser score is a better score.**

Backend Implementation

Database

Trivia Trek's database uses Google's Firebase framework to host and access information about the game's question and feedback data. It is hosted on Google's FCM backend servers, with all necessary queries integrated into our application's code in Swift.

- Several screenshots of our backend set up in Firebase are provided in the screenshots folder for reference.

Authors

Arthur Lafrance ([arthurlafrance](http://arthurlafrance.com)) - App structure, game technicality, and backend

Raj Raghulan ([rajraghulan](http://rajraghulan.com)) - Graphic design and animations

Samrudh Shenoy ([samrudhshenoy](http://samrudhshenoy.com)) - App structure, game mechanics, social media integration, and tutorials

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Note: Trivia Trek gains access to basic and publicly available social media information and email through a user log-in, but in no way stores or shares such information.