

Architecture and Design: Skull King

Purpose

The Skull King Scorekeeper application is designed to function as a companion app to the card game Skull King. This product has been designed so that it will be assisting the player with different rules of the game, understanding how the game flows, keeping track of the player's scores, and streamlining the betting and score keeping process as it can sometimes be difficult to do so. The purpose of this document is to outline different features of the design of this product, while also articulating the aspects that will be included in our architectural layout so that the reader can understand how this product will come to fruition.

Design - [link to figma](#)

Scorekeeper has been designed to be as seamless as possible, with every page flowing exactly how the card game itself is played. On application opening, the user will be able to select whether or not they want to continue a game that has been saved locally on the device, or if they would like to start a new game. Upon starting a new game, the user will be able to enter in the names of their friends that are playing and then move on to the round pages. Here, as each round progresses they will be able to intuitively enter in the bets and then the actual scores of each player through the course of the game. At the end of each round the user will be shown the current score tallies so that everyone can know where they stand, and how much they need to gamble to win big in later rounds. This will continue for 10 rounds and then the user will be shown the final results screen. Aside from these main pages, we want to add user-friendly pages that help display the rules of the game, modify previous incorrect scores, and show cheat sheets that can assist in gameplay.

While there will be a way to modify incorrect values, in order to help the players as much as possible, there will be relatively few ways to jump around the different application pages during the game so the user doesn't get lost on incorrect pages when there is a specific flow to every game of Skull King. We wanted users to be able to pause the game and return to the same state, so there will be a menu option that allows the users to save their game state so that they can return to it upon application restart through utilization of the continue button from the landing page.

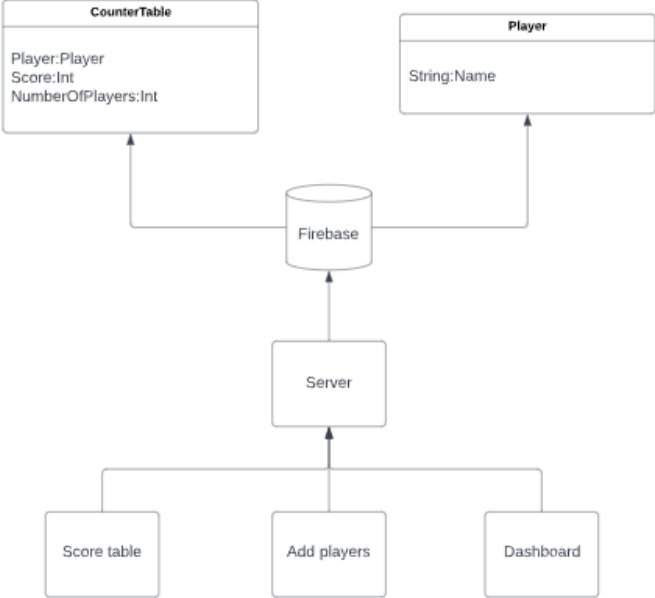
Architecture - [link to the architecture](#)

The Scorekeeper application's architecture has been designed to allow as much access to the game as possible to users across multiple different technological

spectrums. In order to provide this product to as many people as possible, we have decided to create the front-end of the product using a popular mobile application development language called Flutter. This language was chosen as it allows us as the developers to create, maintain, and modify one codebase that allows the application to be provided on both IOS and Android devices. Therefore this application won't be limited to select individuals based on their hardware choices. Multiple members of our team have some experience programming on projects that utilize Flutter, so we decided that it would be appropriate for our team to use that language for development as we saw relatively few downsides to using it.

The back-end will also be an important feature of our design. In order to streamline the back-end development process we have decided to employ the use of Firebase for both our user authentication and database management. The plan is to use the feature Firebase has called Firestore for our database functionality which is similar to that of MongoDB. Combining the user authentication side of Firebase with that database feature of Firestore, we should be able to accomplish all the needs that a Skull King Scorekeeper application would need.

MVP Architecture Diagram



Challenges

Various challenges will arise as we create this application but one that we foresee that will require some time will be the synchronization of the front-end and the back-end. Once both of these architectures are created, the first thing we need to prioritize is getting them to work together. Another challenge we need to tackle quickly is coordination between the developers on the project. Doing so will allow us to streamline the application creation process and provide the best application possible.

Conclusion

We have taken considerable time and energy in designing the entire flow of the Skull King Scorekeeper companion app to ensure that it is not only engaging and intuitive to use, but so that it also doesn't interfere with the social aspect of the game and connecting with friends through betting and pirate strategy. To enable a superior user experience we have designed the app with multiple features including being able to continue a previously started game, modifying previous round scores and bonus points, easy access cheat sheets, and more. We have also taken into consideration a handful of architectural design choices including using Flutter so that the user's specific mobile device doesn't hinder them from connecting and having a great time. We hope that this app will someday become a staple in every serious Skull King player's phone for game nights.