



**Knight Foundation  
School of Computing  
and Information Sciences**

# Florida International University

Spring 2023 Senior Design Project

## SkillCourt

Students: Randy Alvarez

Mentor: Joseph Quinn, Gunmundur Oxndal (Product Owner)

Instructor/Faculty: Masoud Sadjadi, Florida International University

### PROBLEM

SkillCourt is a technology that enables soccer players to train and enhance their practical skills without requiring them to visit a soccer field. This system utilizes LED pads to simulate real match scenarios, and at the end of each sequence, it provides players with specific statistics to measure their performance. These performance stats are later viewed through the SkillCourt app.

This semester the team was tasked to further develop the app and the backend of the project. Getting the app to compile and run.

### SYSTEM DESIGN

The team is creating an app using Dart programming language in the Flutter framework. This enables the app to be used on both Android and IOS platforms, making it cross-platform compatible. In order to test the mobile app and receive all the incoming data from the virtual pad, it needs to be connected. Additionally, the app is linked to a website acting as a backend. The website has been written primarily using Typescript.

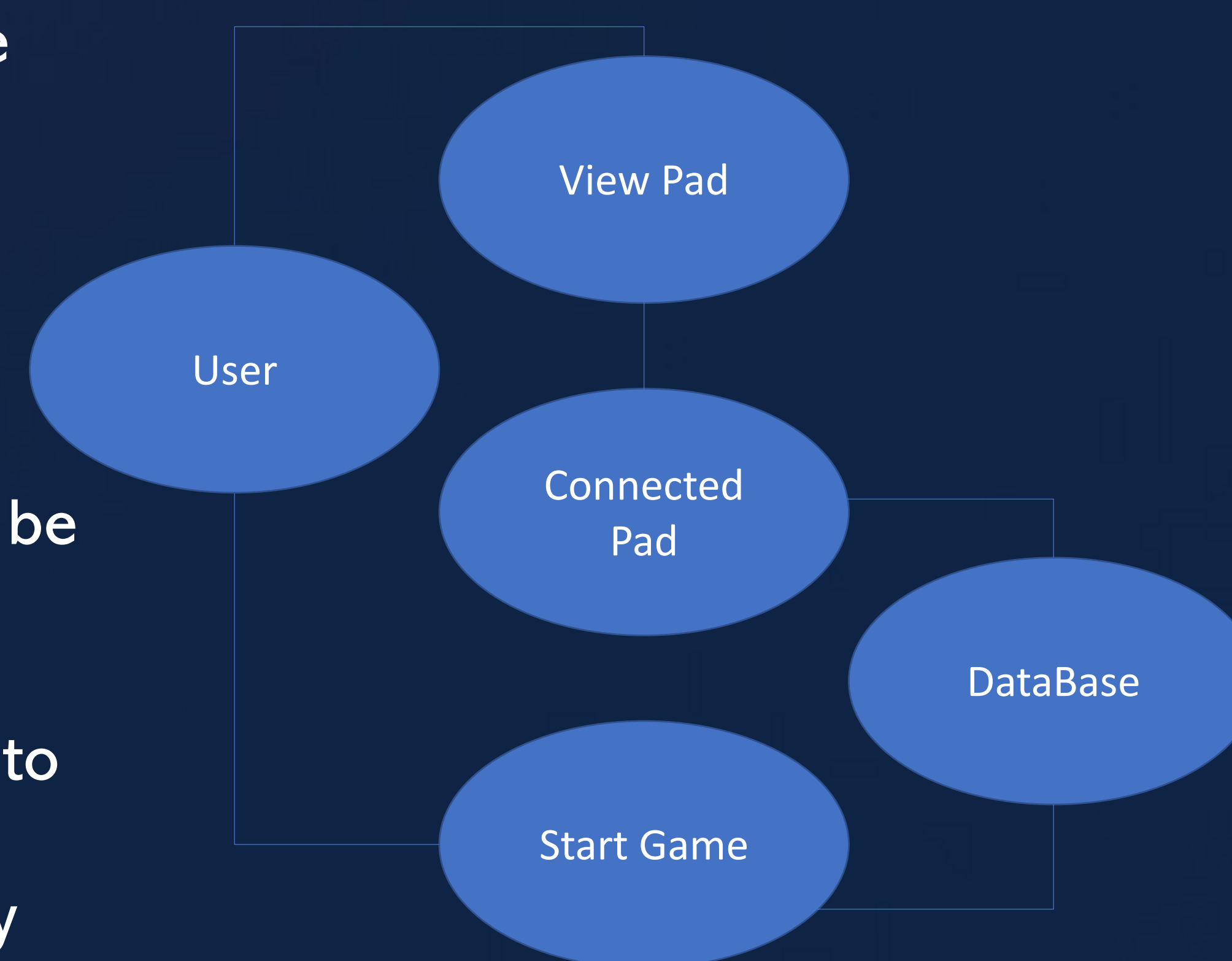
### SUMMARY

My main contribution to the project was fixing and updating the mobile app to compile and run. The app did not compile because it was using a deprecated flutter widget `PlatformButton()` instead of the new `TextButton()` widget. There were also a couple syntax errors and an unknown exception error. The IOS version also was changed from 9.0 to 11.0. The project uses a pre-commit git hooks script which was preventing everyone from pushing to the repo. This bash script used `dart fmt` command which was causing problems, it was changed to `dart format` command. I also attempted to implement a color picker widget, as shown above. Which the user would drag their finger across a color spectrum to select 5 relative colors. However, another member of the team was able to implement a simpler version of the color picker and that version was pushed to the repository.

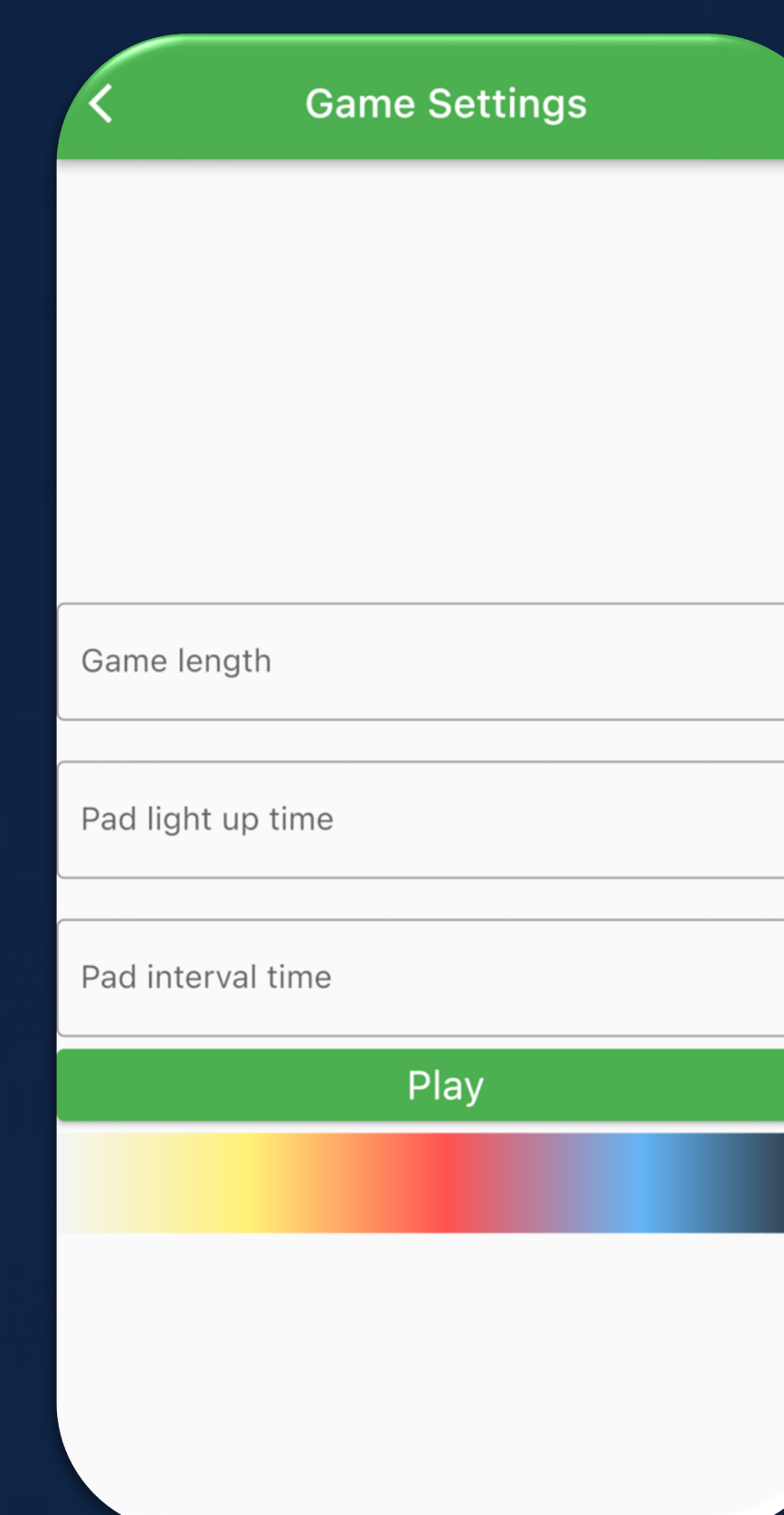
### CURRENT SYSTEM

Currently the app compiles and runs on both Android and IOS emulators. Login page is functional, and the Game Settings page is functional. The bottom navigation bar however is not. A color picker widget was also built by Mark. In the future this widget will be used to change the font color on the app by the user.

### USE CASE DIAGRAM



### SCREENSHOT



1 Color Picker Widget

### REQUIREMENTS



•Java JRE > 1.8



•Git  
•Git-flow-avh or another git-flowplugin for Git



•Flutter SDK



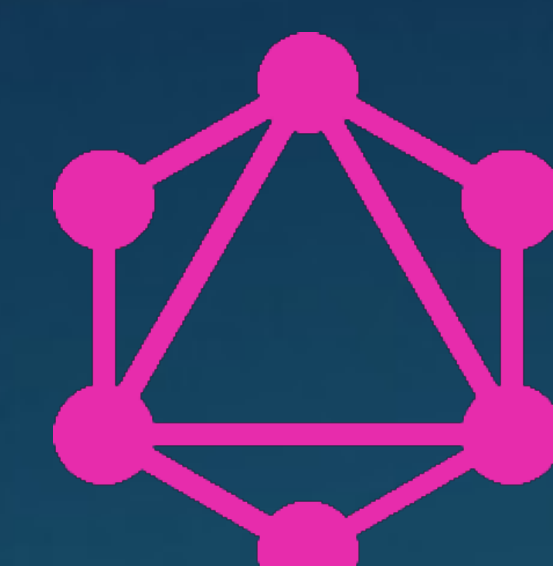
•Android Studio or Xcode with an installed phone emulator



•(Optional) Visual Studio with Flutter Plugin  
•(Optional) Python 3 to run the pad emulator script.

### IMPLEMENTATION

The application is designed to be installed on both IOS and Android devices. To make it work seamlessly on both platforms, we utilized the flutter plugin in VS Code to work with Flutter. On the other hand, the system for the website is being developed using various technologies such as Typescript, NodeJS, GraphQL, for the API. To ensure consistency and scalability, the website is being run within Docker containers.



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