

STATTS

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The Project

Many people have had a part-time job that they thought they could make more efficient. Several companies are looking for ways to do more with fewer people, and the way they are accomplishing that task is by working smarter, not harder.

My job is to create an app that makes my job more efficient.

Job Description

Head Basketball Scorekeeper

Job Tasks: Keep track of the score and stats during an assigned basketball game. Assist in collecting scoresheets from other scorekeepers so final scores and player stats can be uploaded to the official website.

Fayette County Youth Basketball Association

Background: Fayette County Youth Basketball Association is a non-profit association dedicated to providing Fayette and surrounding counties a fun learning and playing environment for youth basketball. They compete using Georgia High School rules to prepare athletes in moving forward in their school programs.

Personal Painpoints

Pre-Game

Waiting for Scoresheets

Most coaches spend the majority of their time before games with their team preparing for the game. Several times, coaches have waited to turn their sheets in just before the game starts.

In-Game

Constantly Double Checking Totals

Because the scorebook acts as the official score, I have to make sure the totals add up. Taking the time to count someones personal points can take attention away from the game.

Post-Game

Reviewing Score Before the Next Game

On average, there is less than 5 minutes before games. Not only do I have to make sure both scoresheets are accurate, I have to make sure that I have the scoresheets for the next game and that they are filled out correctly.

Research Method

IDEO Design Thinking
Human Centered Design Approach

1.

Empathize
Interviews, Empathy Maps, & User Personas

2.

Define
Problem Statement, Goal Statement, & User Flow Chart

3.

Ideate
How Might We's & Sketches

4.

Prototype
Low & High Fidelity Prototypes

5.

Test
User Testing (Prototypes and System Usability Scale Questionnaire)

Empathize: Interviews

Interview Goals

1. Learn more about scorekeeping and how it varies between different leagues, age groups, and people.
2. Learn about similarities and differences among scorekeepers in how they approach their job.
3. Understand how scorekeepers feel while working and what areas they feel need to be improved or reworked.

Participants

Age/Sex: Males and Females between 16 and 30 years old

Location: Residents of Fayetteville & Peachtree City, GA

Extra: At least 1 year of experience being an FCYBA scorekeeper for any age group and/or anyone who has experience being a scorekeeper elsewhere (AAU, High School, etc.).

Schedule

Dates: Tuesday August 31st & Wednesday September 01st - 2021

Time (CST): Tuesday 11:00am - 1pm | Wednesday 6:30pm - 8:30pm

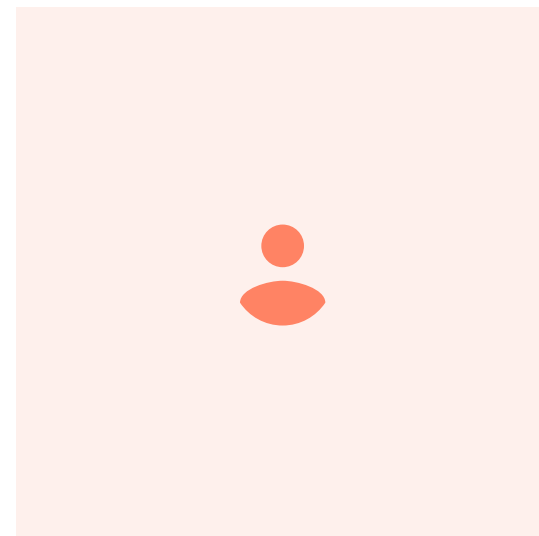
Location: Zoom (Meeting ID: 826 0527 0215)

Interview Timeframe: Approximately 45 minutes

Sample Questions

1. What does a typical workday look like as a scorekeeper?
2. What is your process for verifying scores/stats?
3. What challenges have you faced when reviewing your scoresheets between or after games?
4. What is the most time-consuming step in reviewing or calculating scores?
5. Describe a time when a Junior scorekeeper turned in scoresheets that were incorrect or required you to recheck their work.

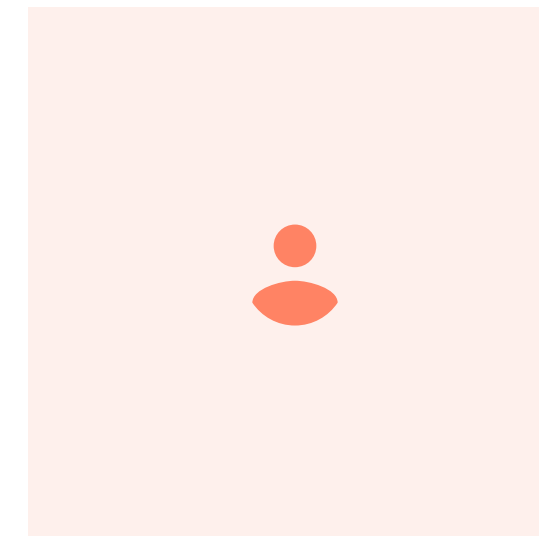
Empathize: Empathy Maps



Evan W.

FCYBA Head Scorekeeper (4 years)

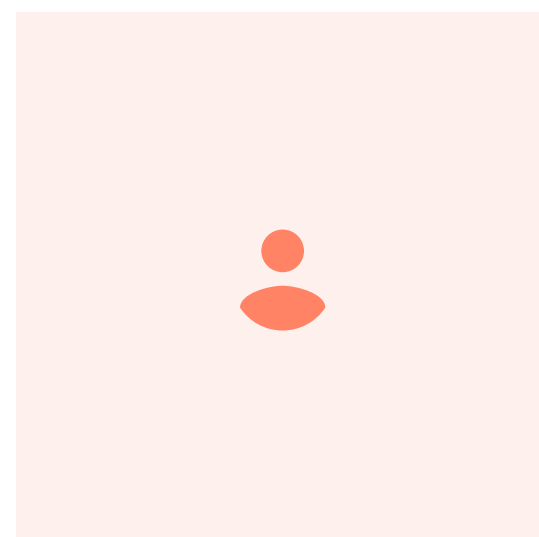
S: "I have to keep up with 6 different binders filled with papers for each age group"
 D: Collects all scoresheets and checks to verify totals
 T: "How can I verify scoresheets more efficiently?"
 F: Like a Leader



Darius T.

FCYBA Scorekeeper (2 years)

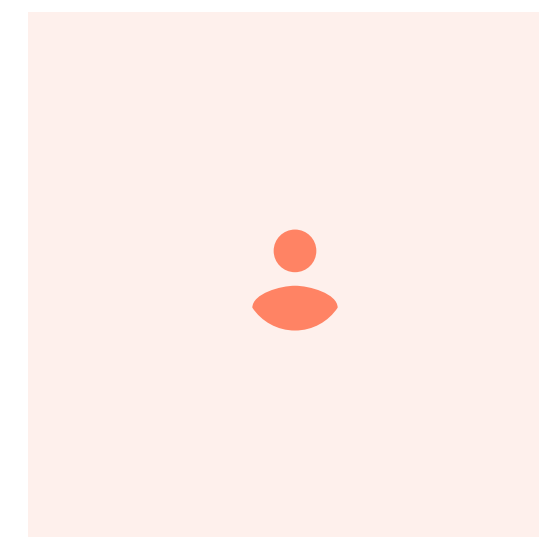
S: "I count, then recount, and recount again"
 D: Writes the color of the teams jersey to identify teams
 T: There is too much to keep track of in between games.
 F: Focused



Ashley T.

PTCYBA Scorekeeper (3 years)

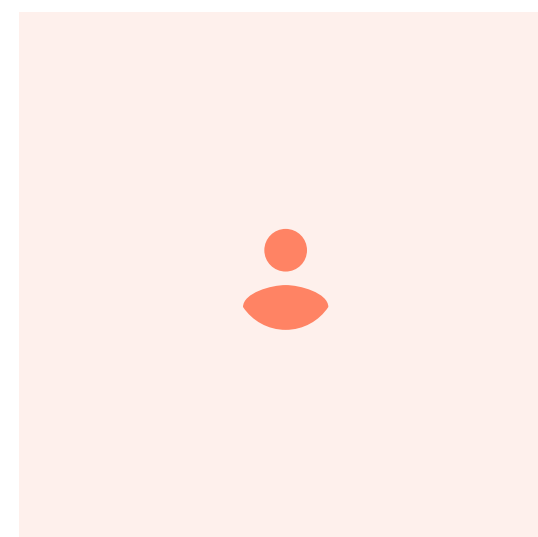
S: "I like how we use scorebooks, but there isn't much flexibility in how we can organize the pages."
 D: Tracks down coaches to get their scoresheets before games
 T: What do other leagues do about verifying scores?
 F: Busy



Malik F.

GHSA Scorekeeper (4 years)

S: "I have a hard time remembering to keep up with possessions"
 D: Verifies with the other team's scorekeeper in between quarters
 T: Did I switch the possession arrow at halftime?
 F: Important



Alexis S.

AAU Scorekeeper (9 years)

S: "The biggest challenge is when coaches don't have all their players in the book before the game starts"
 D: Works with coaches/teams from different states
 T: Why don't we have an official scoresheet?
 F: Always on-the-go

Define: Project Overview

Problem Statement

Scorekeepers need a more efficient way to perform their job tasks (track the game's score, tally player statistics, communicate with coaches and referees, etc.) because their job performance is crucial to the game at play and without them, the games would not be organized or tracked officially.

Goal Statement

My scorekeeping app will let users perform their jobs more efficiently, which will affect basketball leagues by improving its internal structure. I can measure effectiveness by comparing the time it takes for scorekeepers to tally scores and stats and prepare for their next game.

Define: Current User Flows



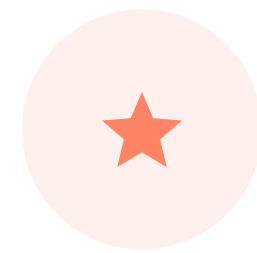
FCYBA

Get binder, Review games, Get sheets (from coaches), Game, Review scores, Coaches sign sheets, Review scores, Place sheets in binder, (return to step 3), Turn in binder



PTCYBA

Review games, Get sheets (from coaches), Coaches sign sheets, Game, Review scores, Turn in sheets (return to step 2)



GHSA

Get book, Track other teams players, Verify names/numbers, Referees sign the book, Game, Review Score, Turn in book



AAU

Review games, Get sheets, Game, Review score (return to step 2)

HMW:

Speed up pre-game procedures

Reduce extra steps and inputs

Rough average of all surveyed scorekeepers

Ideate: **How Might We**



Reduce time spent recounting the score and stats after each quarter?

Make scorekeeping less stressful for first time users?

Improve communication between Senior and Junior scorekeepers?

Create a universal score system between different leagues? (recreational, amateur, etc.)



Minimize the number of people needed to verify scores?



Extend accessibility to accommodate a wide range of users?

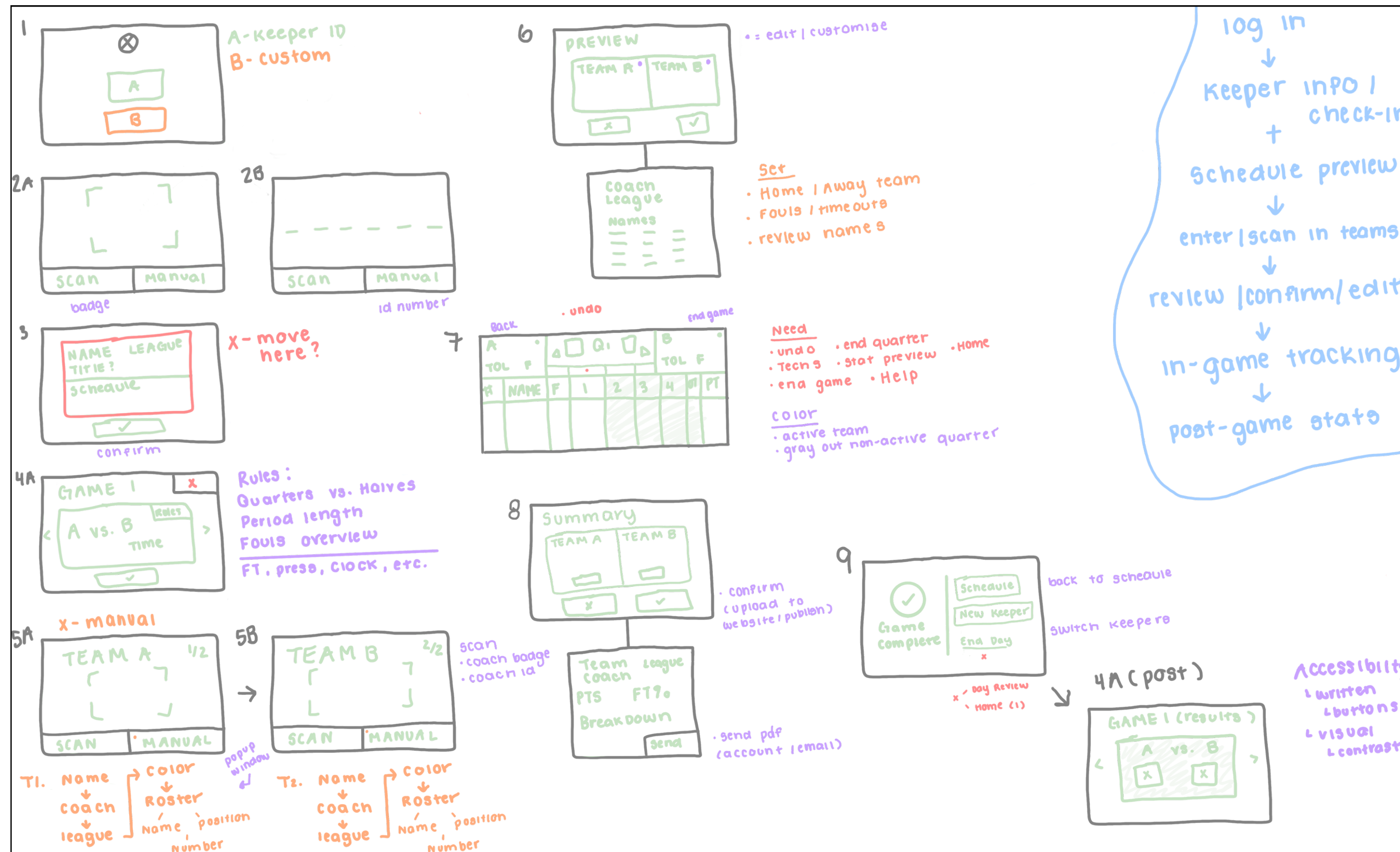


Reduce time spent before games tracking down scoresheets (or waiting on coaches to provide their player lists)?



Improve means of collecting and storing scoresheets throughout the season?

Ideate: Rough Sketches



HOME	← 10	G1	12 →	AWAY
#	~	22	222	22
		2		22

HOME		H5	Q#	AB	AWAY			
TOL	TF	←		▷	TOL	TF		
#	NAME	F	Q1	Q2	Q3	Q4	OT	Points

Scorebook Screen

Sample Flow Screens

The Prototypes

Pre-Game Prototype

Prototype [Link](#)

Walkthrough [Link](#)

In- and Post-Game Prototype

Prototype [Link](#)

Walkthrough [Link](#)

The Features

Primary Features

Home Screen:

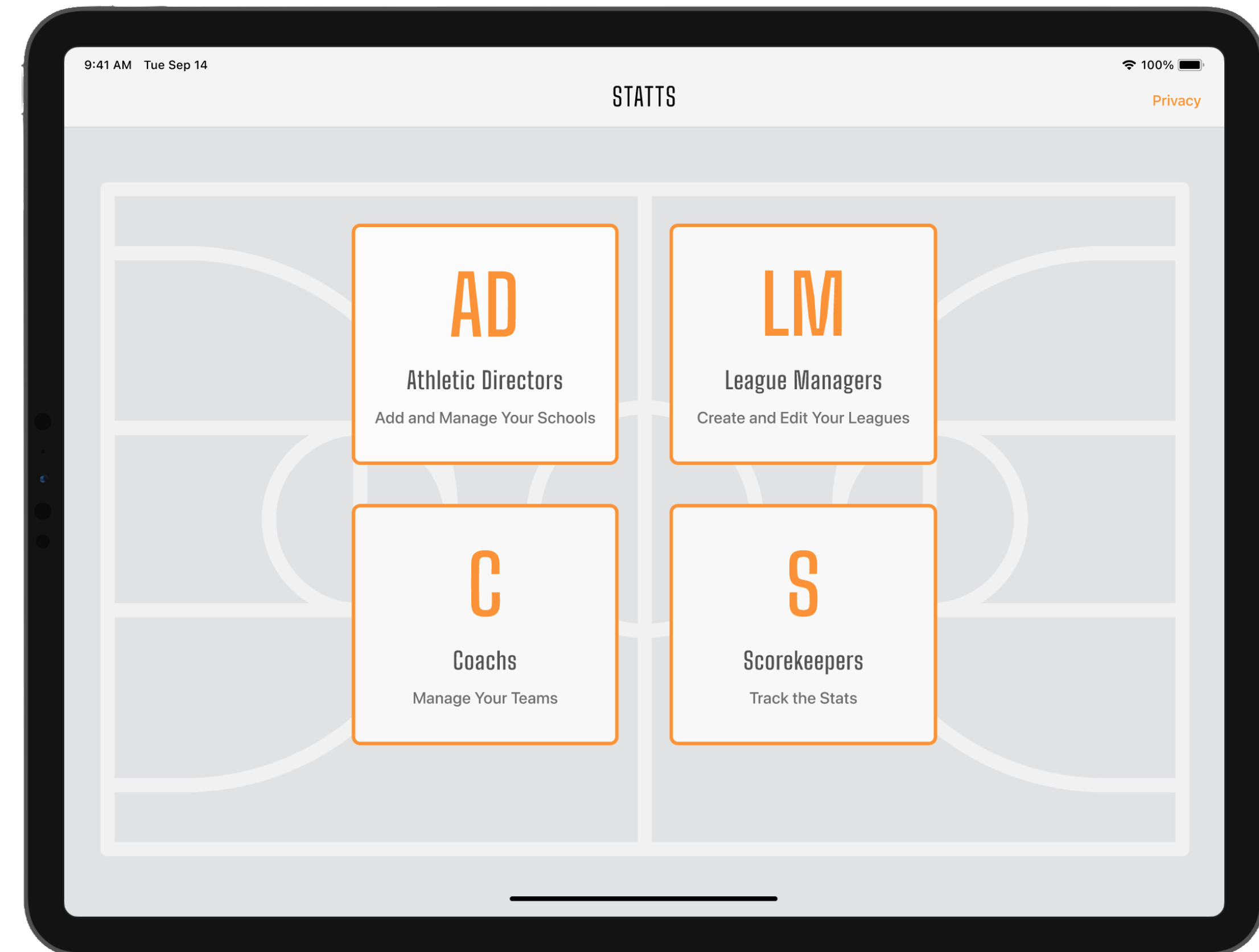
- League Managers, Athletic Directors Coaches, Scorekeepers (all enter data that heavily relies on each other)

Keeper Log In:

- Scorekeepers would have their own badge with a QR code (and keeper ID) for their own login.

Schedule

- Shows scheduled games for their assigned league(s). (Full Season Schedule)



Welcome Screen

The Features

Primary Features

Game Preview:

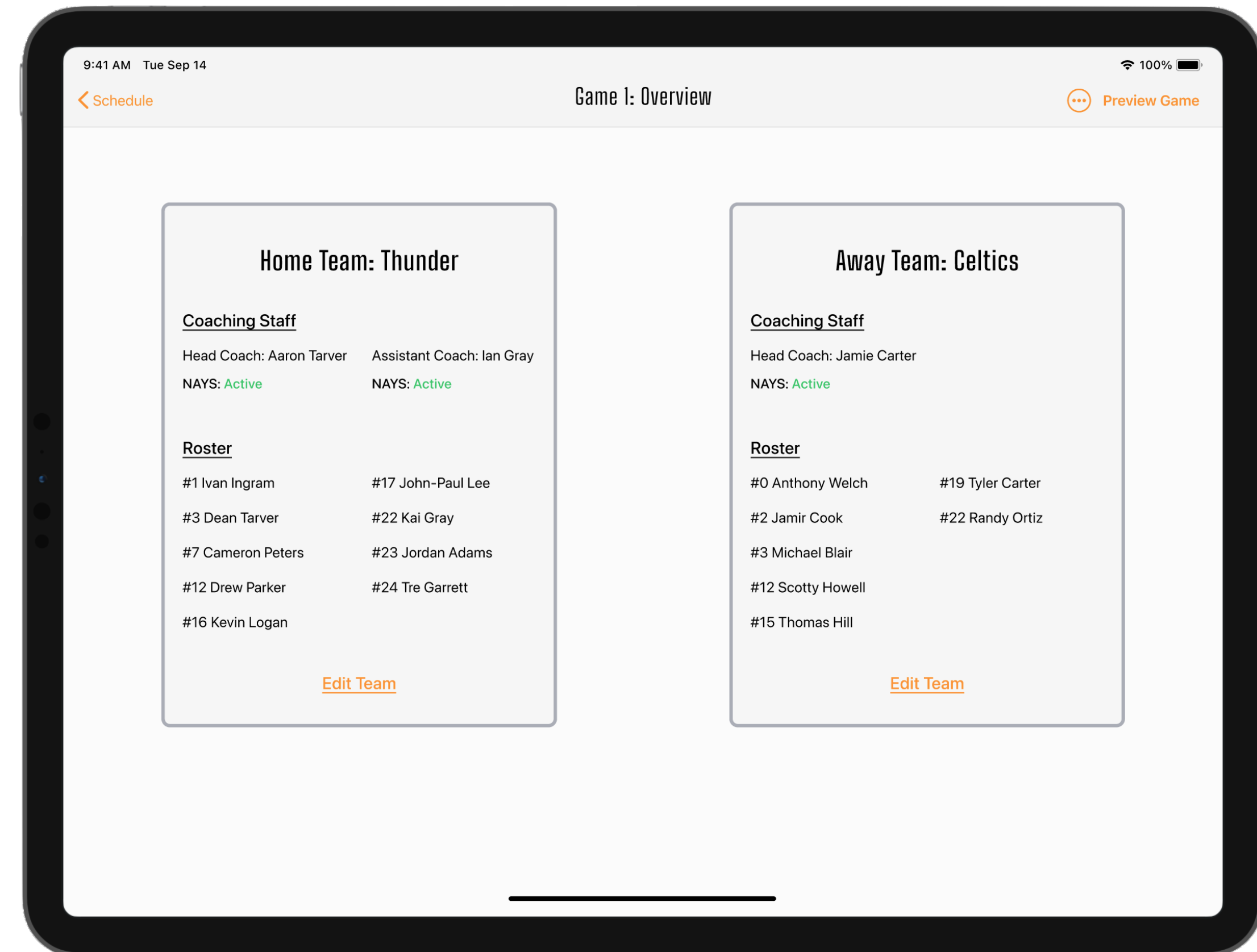
- Shows the Game Number, Location, Time, Home and Away teams, and Special Notes (ex. player is suspended or Coach is limited)

Add Teams:

- Coaches also have their own badge with a QR code (and coach ID) that is linked to their all their teams.

Game Overview:

- Shows both teams, their coaches (certification status), and players for referees and coaches to review (if needed).



Game Overview Screen

The Features

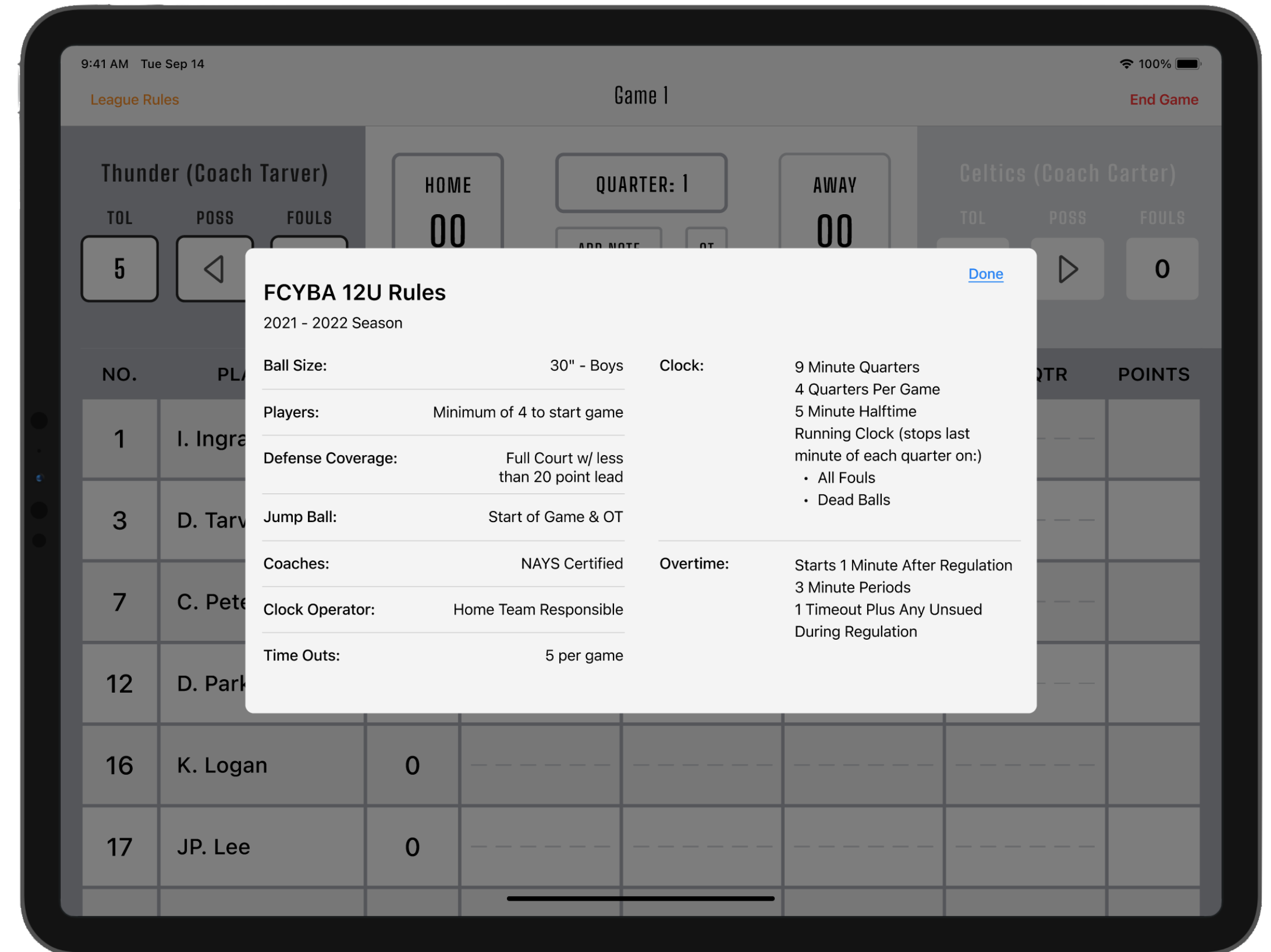
Primary Features

Teams Identification:

- Scorekeepers can toggle between teams and the scorebook changes to the corresponding color (can be changed).

Rules:

- Keeps the league rules on the same page (previously rules were a separate sheet of paper or based on known rules by coaches or referees - GHSA, AAU, etc.)



League Rules Popup

The Features

Primary Features

Automatic Updates:

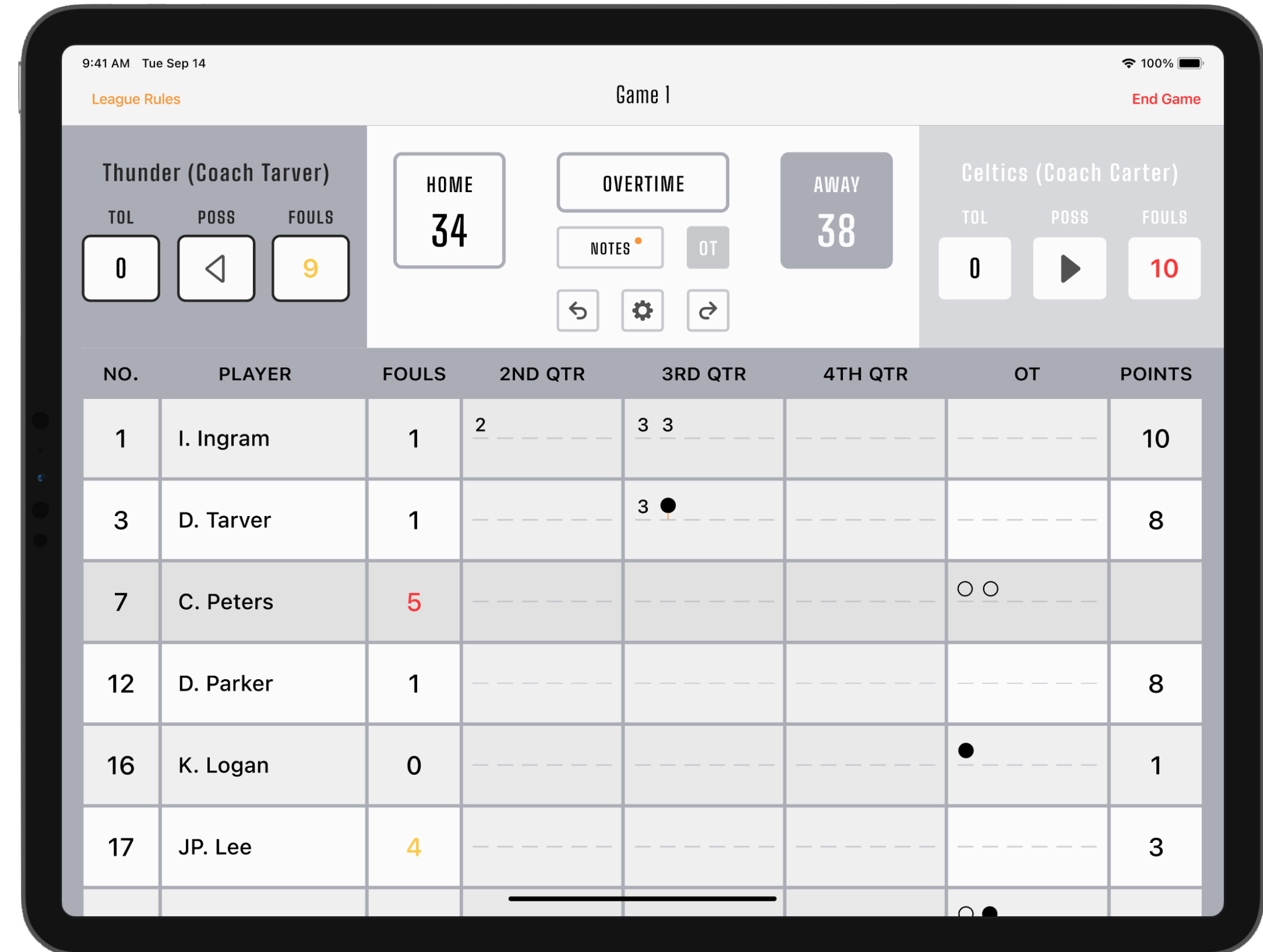
- Timeouts, Fouls, and Points are all tracked in multiple places. One input will update any corresponding sections.
- After a quarter ends, the scorebook updates and inactive quarters are grayed out

Color:

- Yellow and Red are used to identify important stats that should be taken into account.
 - Yellow: Fouls (Bonus)
 - Red: Double Bonus, Player has fouled out the game, and Zero timeouts remaining

Post Game:

- The winning team is highlighted for easy reference. The Scorekeeper schedule is updated so that completed games are marked and displays the final score.



Post Game Summary

The Features

Secondary Features

Scorekeeper Schedule:




- Hide completed games
- Message Head Scorekeeper
- Share Schedule


Team Setup

- Add Signatures
- Cancel Games

Scorebook:



- Possession Arrow
- Timeouts
- Fouls
- Quarter Changes

Hide Completed Games	
Message Evan	
Share Schedule	

Add Signatures	
Cancel Game	

Thunder
Full Timeout (3 Left)
:30 Timeout (2 Left)

#1 I. Ingram (Thunder) Player Foul 1st Quarter
Personal Foul
Flagrant Foul
Technical Foul

POSS	POSS
	

Proceed to Quarter: 2?	
Cancel	Continue

The Features

Tertiary Features

Scorebook:

- Add Notes
- Settings

Cancel!
New Note
Add

12U | Thunder vs. Celtics
Quarter: 1

Title

Details (optional)

Cancel
Settings
Done

Active Team Color ● Navy Blue >

Inactive Team Color ● Pale Blue >

Font Size

A |-----●-----| A

Display Team Jersey Color?

Yes No

Display Font

Default San Serif Serif

Pen Color & Size

Input Type

Pencil Keyboard







2

Enter a Manual Edit

Reflect: System Usability Scale









Participants are asked to score the following 10 statements with 1 - 5 on a range of Strongly Agree to Strongly Disagree:

1. I think that I would use this app frequently.
2. I found the system unnecessarily complex.
3. I thought the system was easy to use.
4. I found the pre-game checklist unnecessarily complex.
5. I found the automatic tracking functions were well integrated.
6. I thought there was too much inconsistency in this system.
7. I would imagine that most scorekeepers would learn to use this system very quickly.
8. I found the team setup difficult to navigate.
9. I felt very confident using the system.
10. I needed to learn a lot before I could start using this system.

	SUS Average	Above/Below 68
User 1	82.5	
User 2	85	
User 3	87.5	
User 4	67.5	
User 5	62.5	
	77	

Reflect: Effectiveness

Goal Statement: I can measure effectiveness by comparing the time it takes for scorekeepers to tally scores and stats and prepare for their next game.

	Pre-Game (Before)	Pre-Game (After)		Post-Game (Before)	Post-Game (After)	
FCYBA	4:48mins	2:45mins		5:16mins	2:46mins	
PTCYB	2:14mins	1:36mins		3:21mins	2:03mins	
GHSA	3:25mins	2:10mins		3:04mins	1:34mins	
AAU	4:00mins	2:02mins		2:17mins	1:49mins	

Scorekeepers were asked to time their processes and were later timed with a mock setup