

Dodgeball Game Manager

Written by: Adam Flis (OSU #6):

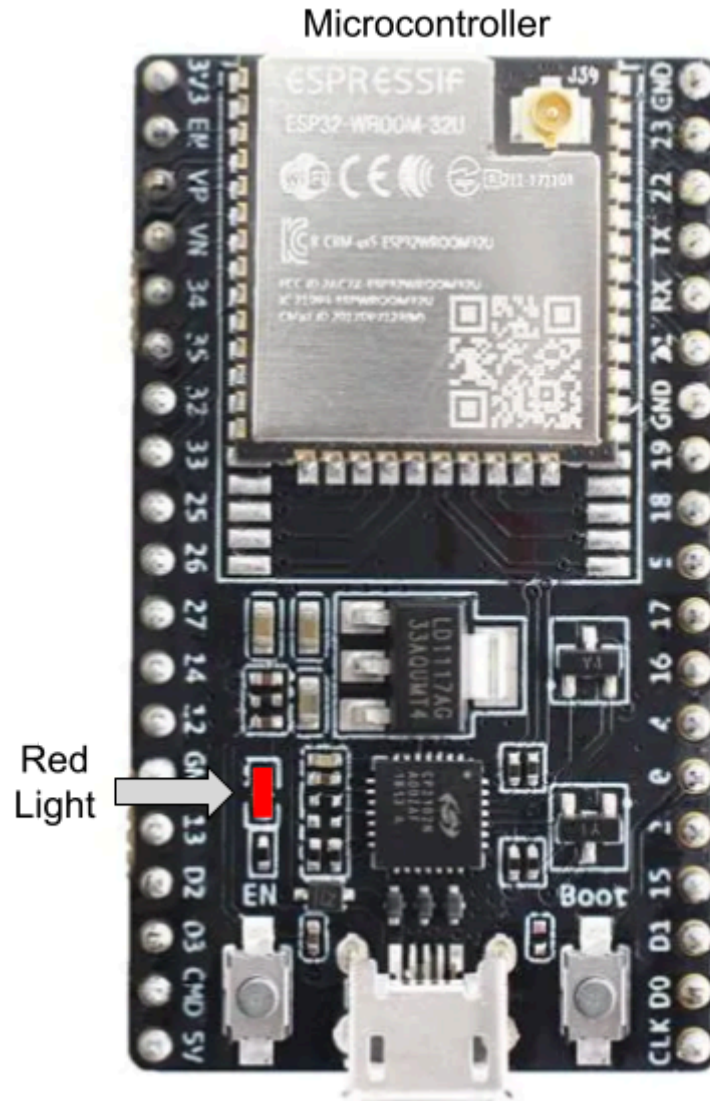
Founder & CEO of [Digital Sports Solutions LLC](#)

Power On	2
Connect to Dodgeball Game Manager	3
Open Application	4
Navigate the Application	5
1. Homepage	5
2. Team 1/Team 2 Side Page	6
3. Team1/Team2 Settings	7
4. Game Clock	8
5. Game Clock Settings	9
6. Timeout Popup	10
7. End Point Popup	11
8. Practice Mode	12
9. Settings	13
OBS Integration	14
Troubleshooting	14
Notable Features	14
Future Plans	14
Other	15



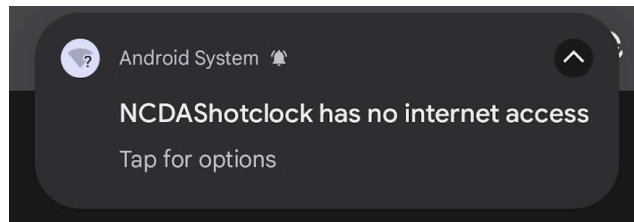
Power On

1. Plug the device's USB cable into the provided power bank
2. Make sure the red light on the microcontroller turns on

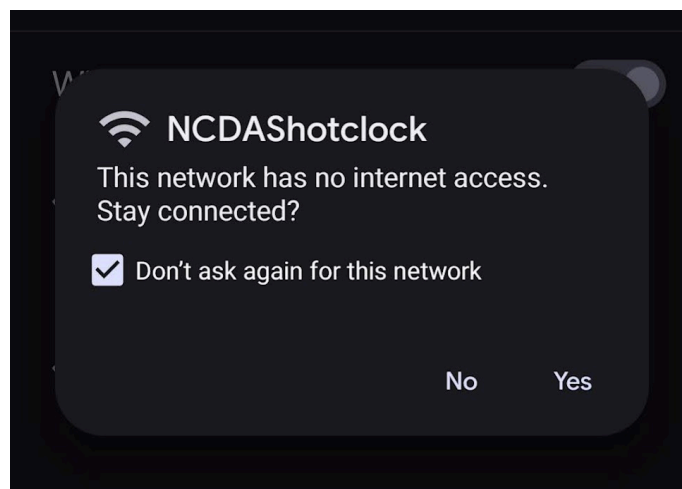


Connect to Dodgeball Game Manager

1. Navigate to your phone's Wi-Fi settings
2. Click on the Wi-Fi labeled "NCDAShotclock" (No quotes)
3. A password prompt will appear and enter "Dodgeball" (No quotes)
4. Click join or connect
5. Once connected your phone should recognize you have no internet access
6. If you have an Android phone you must follow these steps, otherwise go to "7"
 - a. A notification will appear saying you have no internet access, click on it



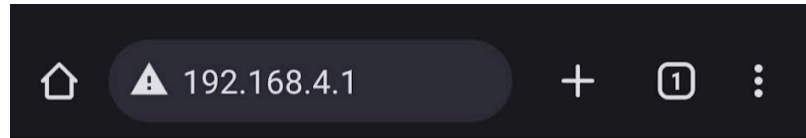
- b. A pop-up should appear, "Click don't ask again for this network checkbox", and click Yes.



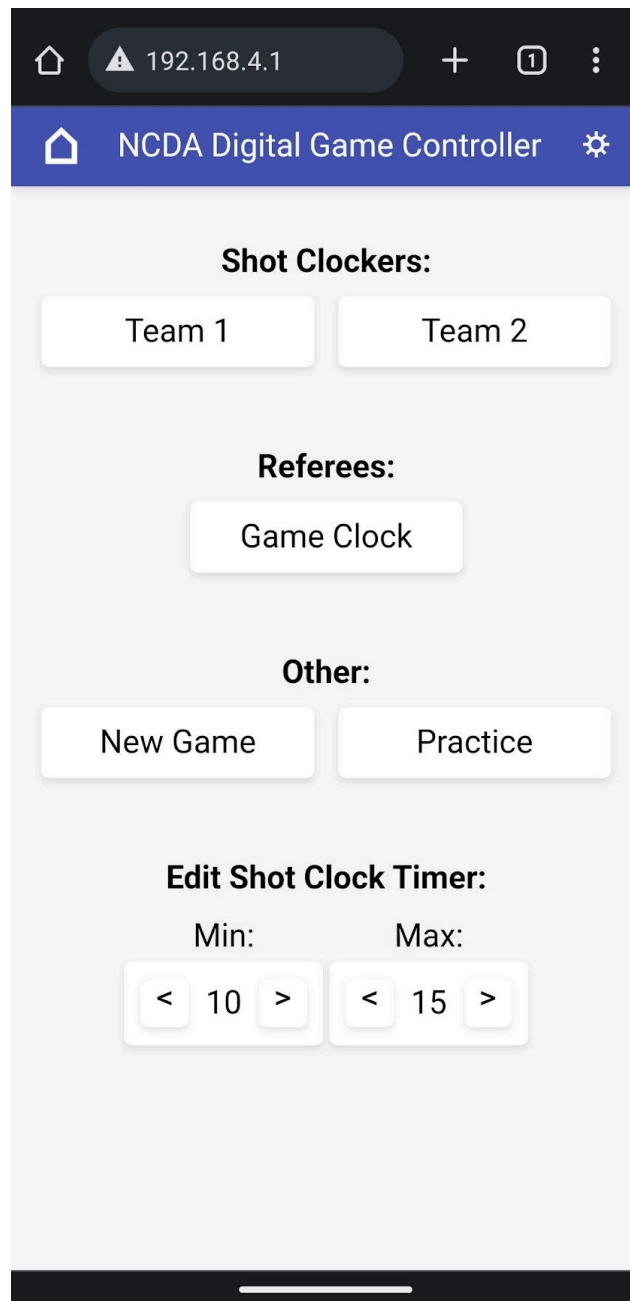
7. After that, you should be connected to the "NCDAShotclock" Wi-Fi network

Open Application

1. Once connected to the “NCDAShotclock” Wi-Fi network navigate to a web browser of your choice on the connected device
2. Type in the search bar “192.168.4.1” (No quotes)



3. If successful a webpage that looks like this should appear



Navigate the Application

1. Homepage

- a. Refresh page
- b. Open [settings](#) page
- c. Buttons to select what side your shot clocking for [Team 1 or Team 2](#)
- d. Button for the referee to control the [game clock](#) aspect of the device
- e. Buttons to start a new game (feature in development) or enter the [practice mode](#) (enables 1 user to control the game and all displays)
- f. Number fields to edit the min/max time for the counters
 - i. The default is 10 seconds (min) and 15 seconds (max)
 - ii. Min and max can't go above 99 and below 0
 - iii. Max can't go below min, if this occurs it sets min equal to max



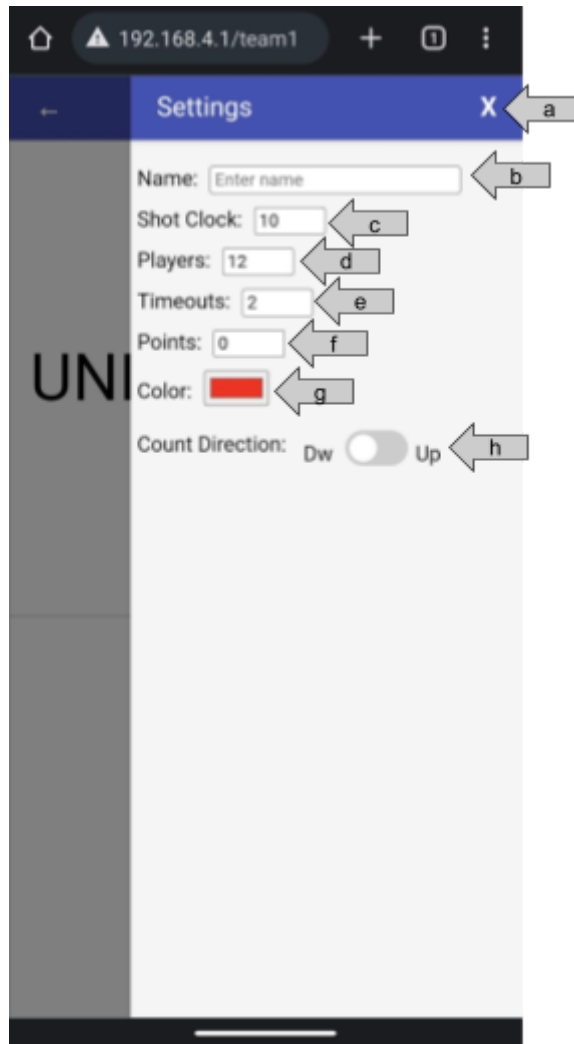
2. Team 1/Team 2 Side Page

- a. Back button to return to the previous page
- b. What side you're on Team 1 or Team 2
- c. Open [settings](#) popout
- d. Undo button to undo a reset call
 - i. Use if a “good” throw is called back
 - ii. Activates team buzzer
- e. Pause/resume button to:
 - i. Pause the timer if a team has less than 3 balls
 - ii. Resume the timer when a team has 3 or more balls
 - iii. The side timer does not blink or count if it's paused
- f. Side's current time
- g. The clock length slider adjusts the next reset time based on the values set on the homepage “d”.
 - i. Min (left) for when a team has 5 or fewer players
 - ii. Max (right) for when a team has more than 5 players
- h. Reset button to reset the side's clock to what “g” is on



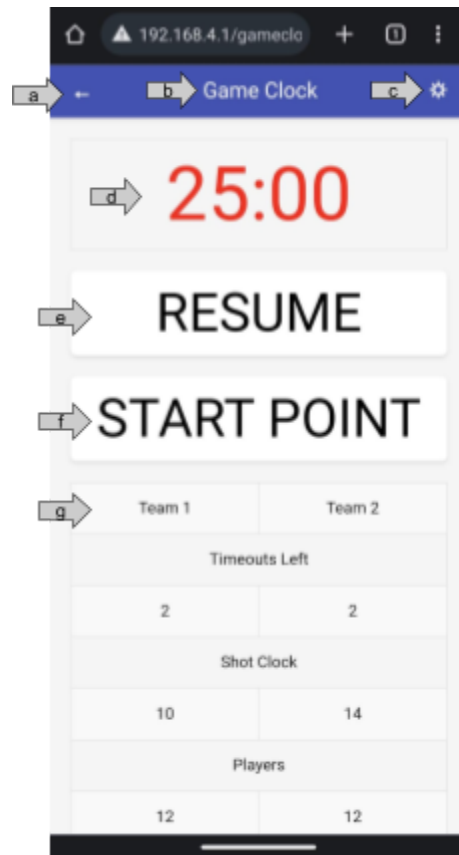
3. Team1/Team2 Settings

- a. Close settings popout
- b. Text box to change the team name
- c. Edit shot clock count
- d. Edit the number of players remaining
- e. Edit the number of timeouts left
- f. Edit the number of points
- g. Clock Color
 - i. Change the display color of the sides clock
- h. Count direction slider
 - i. Dw (left), counts down
 - ii. Up (right), counts down



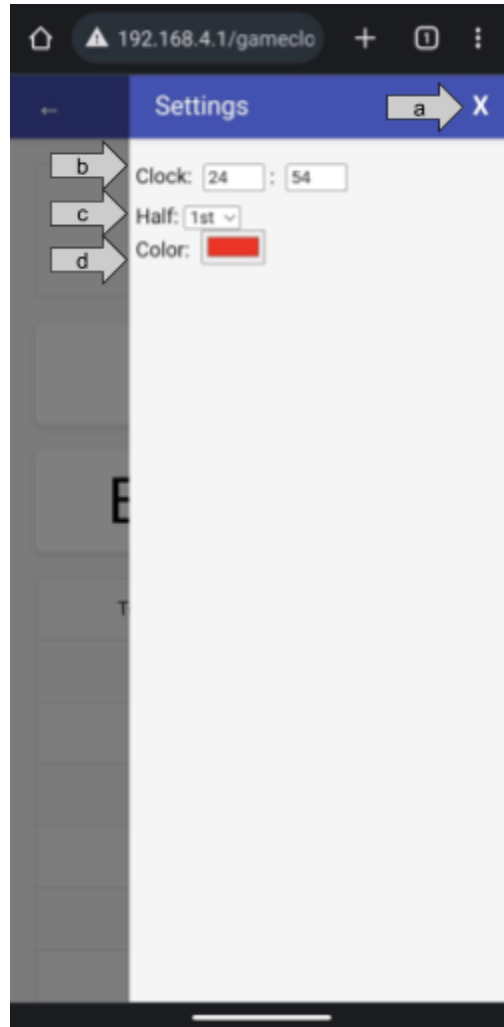
4. Game Clock

- a. Back button to return to the previous page
- b. Page title
- c. Open [settings](#) popout
- d. Current time displayed
- e. Resume/Timeout the game clock
 - i. A point must be active to resume
 - ii. Resumes game clock
 - iii. The timeout button appears when the clock is running
 - iv. If a timeout is running button becomes an end timeout button
 - v. Activates a buzzer
 - vi. Bring up a [popup](#)
- f. Start or end a point
 - i. Starts/Pauses clock
 - ii. Activates a buzzer
 - iii. Brings up a [popup](#)
- g. Information table: Team 1/Team 2, Timeouts left, Current shot clock, Number of players left, Points



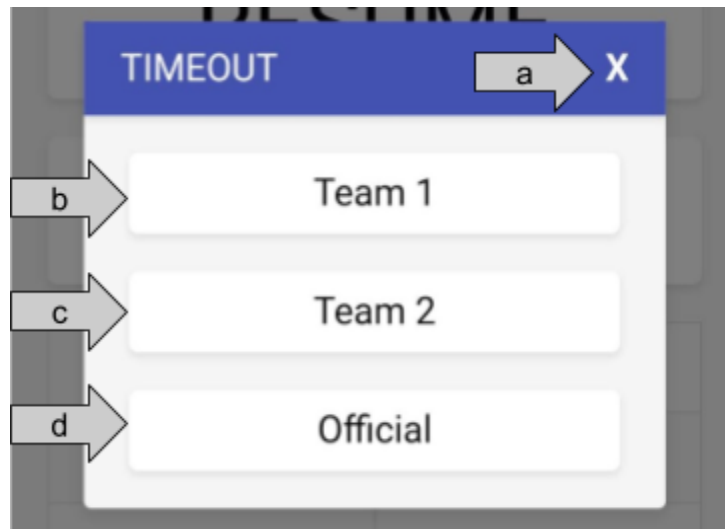
5. Game Clock Settings

- a. Close settings popout
- b. Adjust the game clock timer
 - i. Left box minutes
 - ii. Right box seconds
- c. Change half: 1st, 2nd, OT
- d. Clock Color
 - i. Change the display color of the game clock



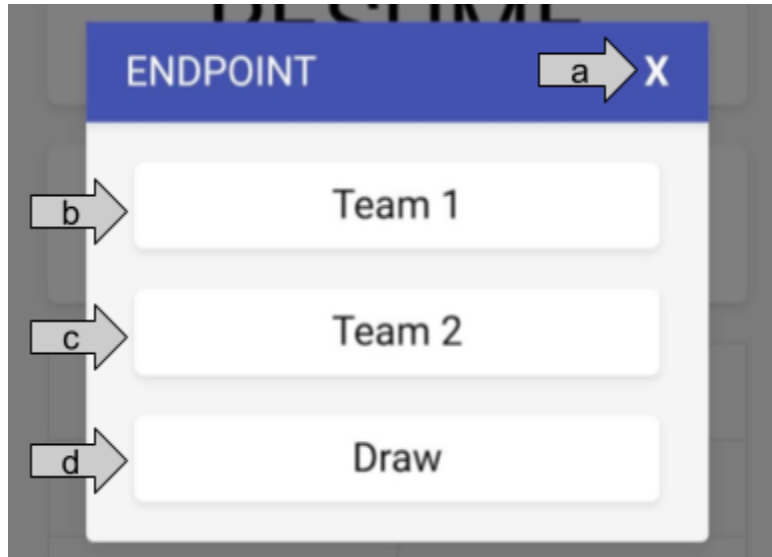
6. Timeout Popup

- a. Close the popup
- b. Call a timeout for Team 1
 - i. Only available if the team has a timeout
 - ii. Starts a 30-second timer
 - iii. Resets team 2's shot clock
- c. Call a timeout for Team 2
 - i. Only available if the team has a timeout
 - ii. Start a 30-second timer
 - iii. Reset team 1's shot clock
- d. Call an official timeout
 - i. Starts a timer that counts up
 - ii. Resets both shot clocks



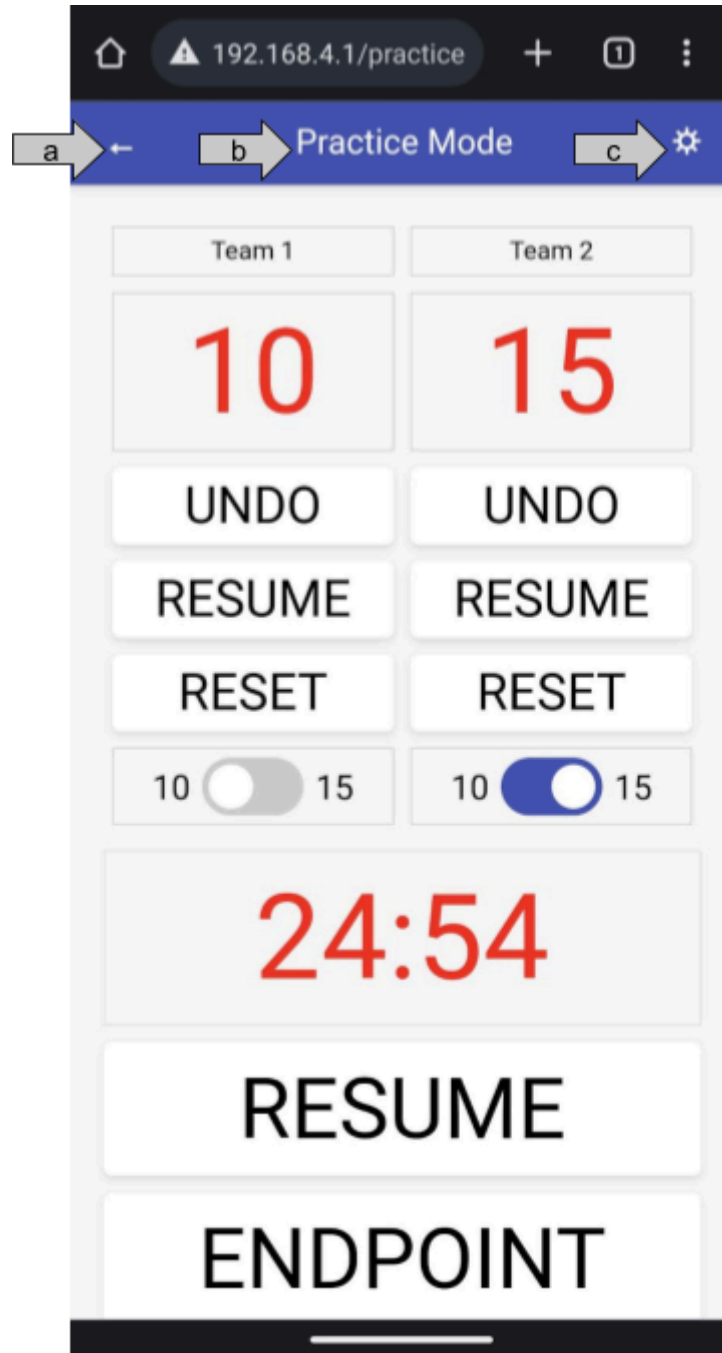
7. End Point Popup

- a. Close the popup
- b. Awards team 1 a point
- c. Awards team 2 a point
- d. Draw a match



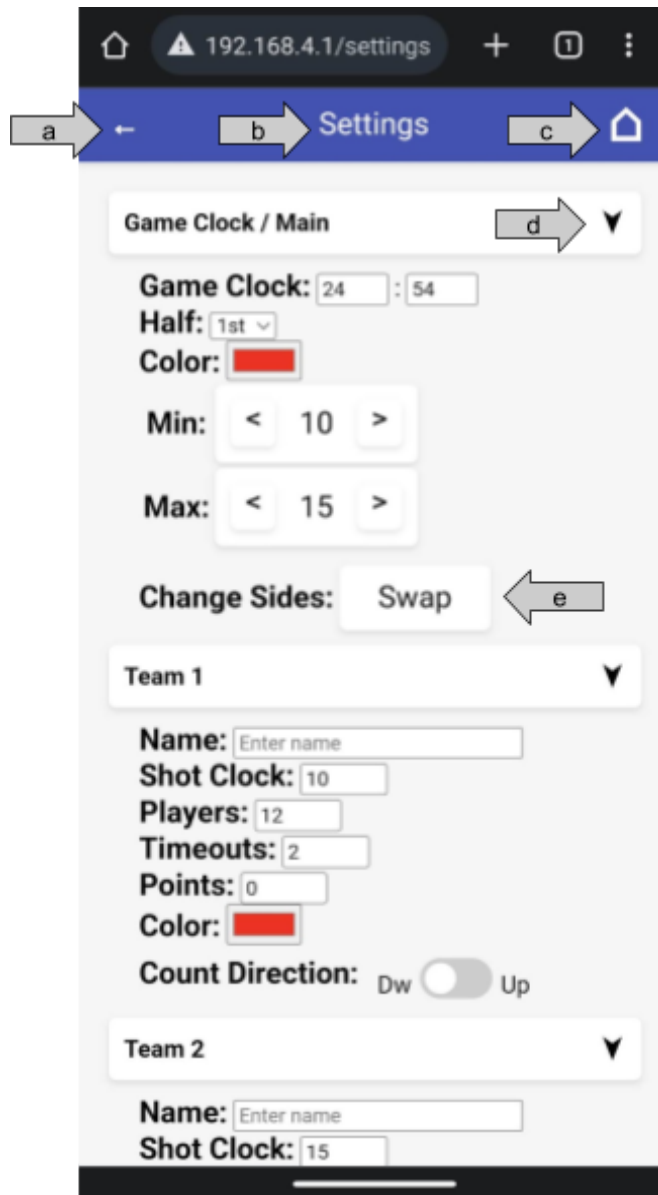
8. Practice Mode

- Back button to return to the previous page
- Page title
- Open [settings](#) page
- Buttons and sliders function the same as if their pages were separate



9. Settings

- Back button to return to the previous page
- Page title
- Return to the home page
- Collapse settings category
- Swap which display and buzzer is Team 1/Team 2
- All features under the other category are under development



OBS Integration

1. Plug in a Wi-Fi adapter to your device
2. Navigate to your device's Wi-Fi settings and connect to the NCDAShotclock network using the instructions above: [Connect to Dodgeball Game Manager](#)
3. Download the OBS_Integration.exe from this link: [GitHub](#)
4. Create a folder on your desktop called data
5. Right-click on the folder and go to the properties
6. In the General tab there should be a line called location, write that down as it's needed later
7. Launch the ".exe" file and a command prompt should appear
8. Type in the location you saved from step 6 but add \data afterward
 - a. This will be the folder where the program saves files to and where OBS reads those files in from
9. Next double-check you are connected to the game manager and press enter
10. The program should start executing and listing for updates from the server
11. To stop the program press "cntr+c" or click the "X" on the command window
12. If you get a message "Connection to the server closed. Reconnecting" don't worry the program should automatically reconnect.

Troubleshooting

1. If you can no longer access the page, it means you got disconnected from the network, if this happens see below:
 - a. Return to your phone's Wi-Fi settings
 - b. Click on the "NCDAShotclock", click disconnect, and then click connect.
 - c. If that didn't work click forget this network and repeat the "Connect to Shot Clock" instructions
2. If the webpage stops loading it means the device crashes, not sure what is causing this issue. Will be fixed in the final version.
3. If weird logic things occur when buttons are clicked please refresh the application

Notable Features

1. Removes inaccuracy of human counting
2. Supports up to 4 users at once
3. Dynamically updating web application
4. The side's display blinks when a violation/balls over occurs
5. Extremely portable
 - a. Carry using a handle
 - b. USB battery bank powered

6. Large and bright
 - a. 3D printed digits
 - b. WS2812b LEDs used for illumination
7. Affordable
8. Color chooser

Future Plans

1. Connection status on webpage/alert if disconnected
2. Storing yellow/red card information
3. Logger for stoppages and reasons for each one
4. Implement more game logic
5. Stat tracking

Other

1. Please join the discord server below to receive updates and provide feedback.
This project is still in the early stages of development so any feedback or feature requests are appreciated.
 - a. [Digital Sports Solutions LLC](#)
2. Code: <https://github.com/Adam-Flis/NCDA-Shotclock/tree/main>