

Motivation

- In America, about 20 kids per day die from sudden cardiac arrest (SCA) and 1/300 have an undetected heart condition that puts them at risk for SCA.
- SCA is the #1 cause of death of student athletes, yet the standard physical examination for young adults misses over 96% of those at risk.
- Our group, alongside Who We Play For (WWPF), look to assist thousands of athletes and young adults in preventing SCA by discovering prevalent heart conditions through the use of electrocardiograms (ECGs).

Project Goal

- **Our Goal is to work with WWPF to provide a large-scale web application that will be used by volunteers across America to efficiently manage heart screenings for thousands of student athletes each year.**

Project Purpose

- Our purpose is to detect harmful heart conditions, prevent SCA, and save the lives of student athletes.
- By developing this application for WWPF, we provide them the necessary tools to make ECGs more accessible and ultimately reduce SCA.

How It Works

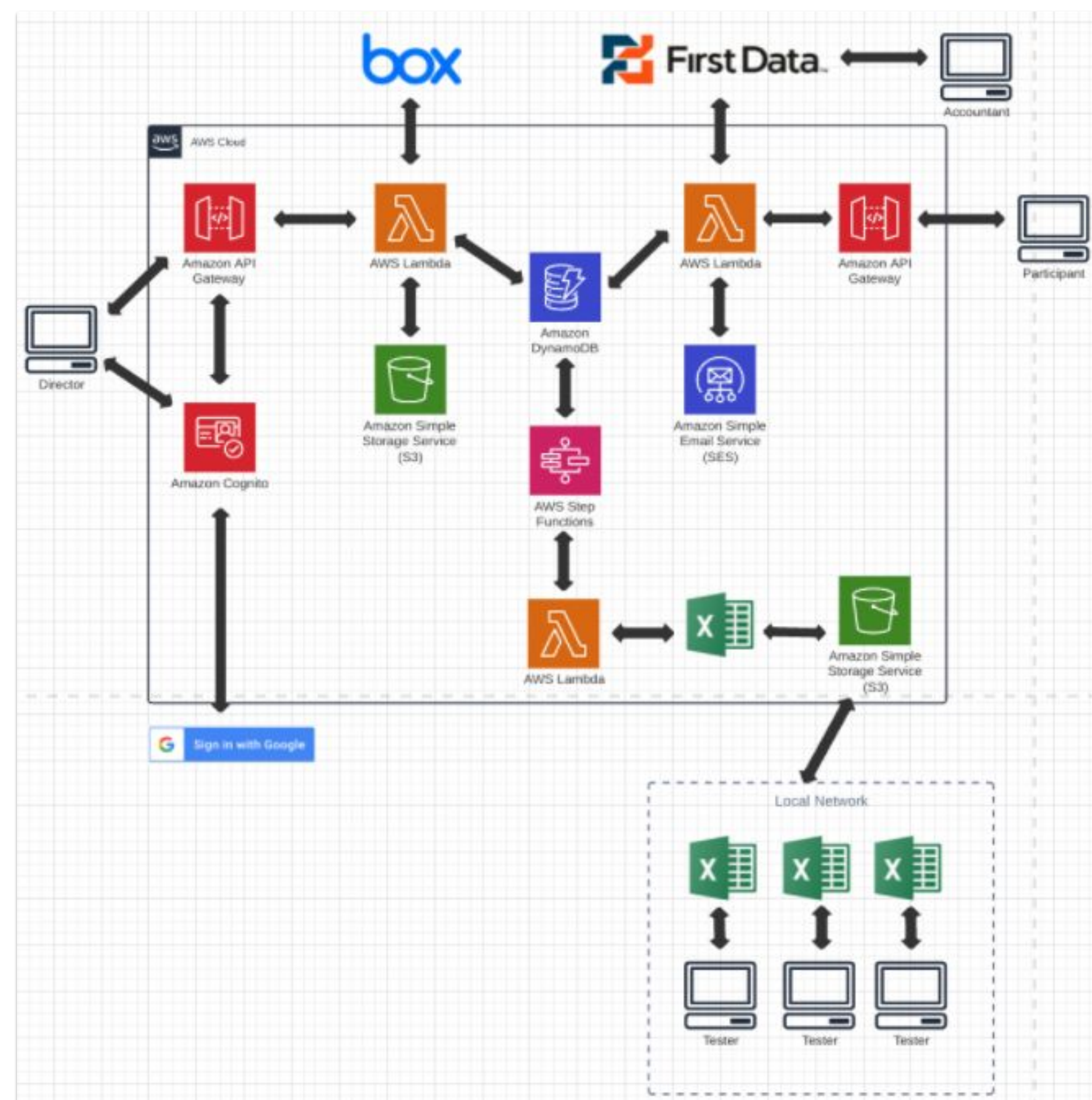
- **Event directors create and manage their events through a custom interface. Student-athletes register online via a public registration page or a private link and receive payment confirmation and a reminder for the event. If participants show up before registering online, they can register on-site by scanning a QR code. Who We Play For volunteers then conduct an ECG on the participant. The ECG data is then processed by external software to determine if there are any cardiovascular irregularities. Once that has been determined, participants receive an email with their results.**

Features

- **Participant**
 - **Receive automated receipt and reminder emails for event registration.**
 - **Cancel via unique code provided after sign-up.**
 - **Periodic updates to volunteers' questionnaire spreadsheets on-site from cloud storage.**
- **Director**
 - **Create, delete, edit, and finalize events manually or automatically.**
 - **Export sign-in and questionnaire spreadsheets.**
 - **Generate registration links for online sign up or on-site sign up via QR code.**
 - **Private event functionality.**
- **Accountant**
 - **Filter past payments by participant, guardian, email, phone number, event name, or date.**
 - **Export daily summary of payments to excel spreadsheet with all merchant information.**
 - **Authorize refunds, cancel registration, and mark participants as absent.**

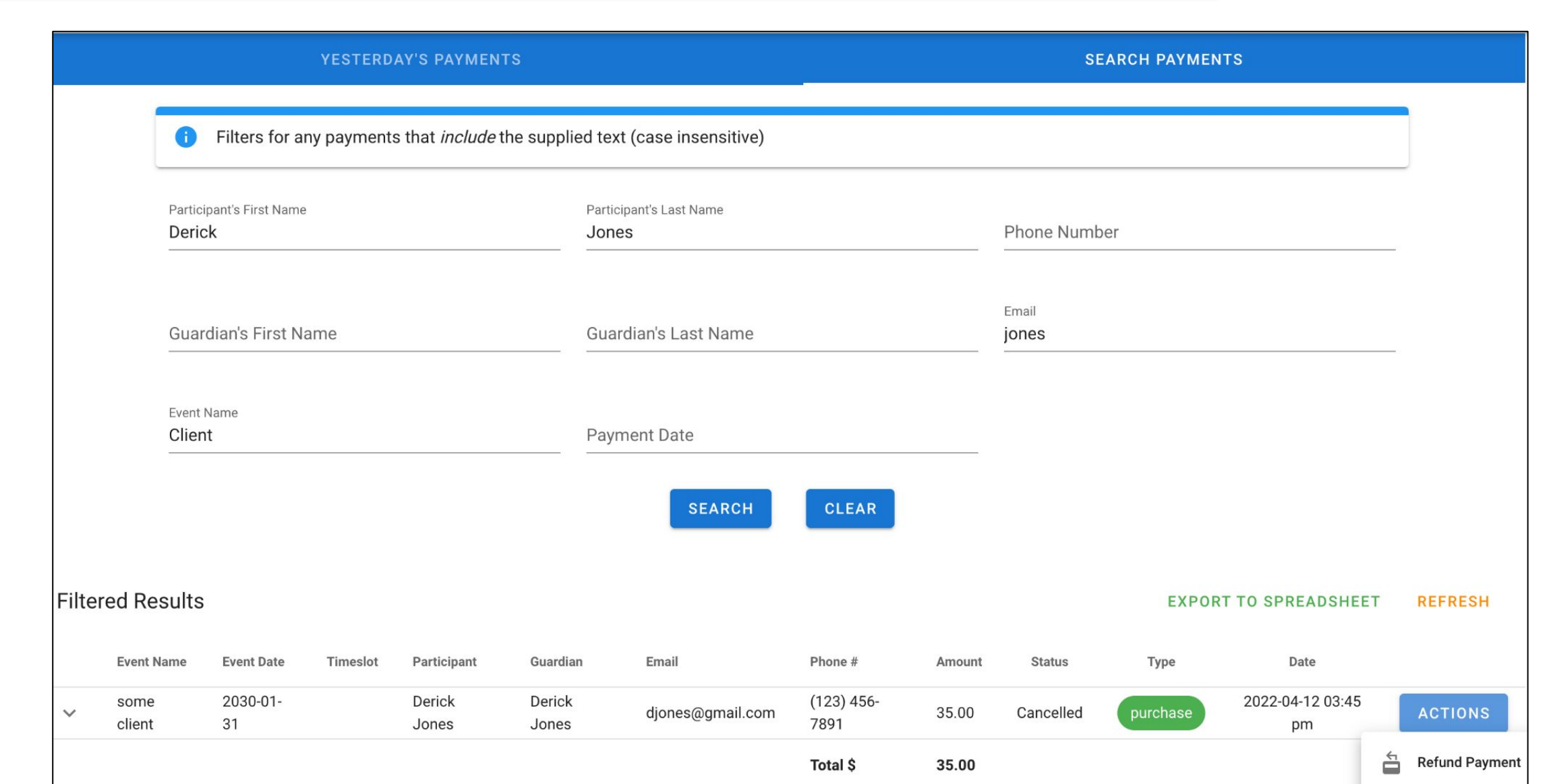
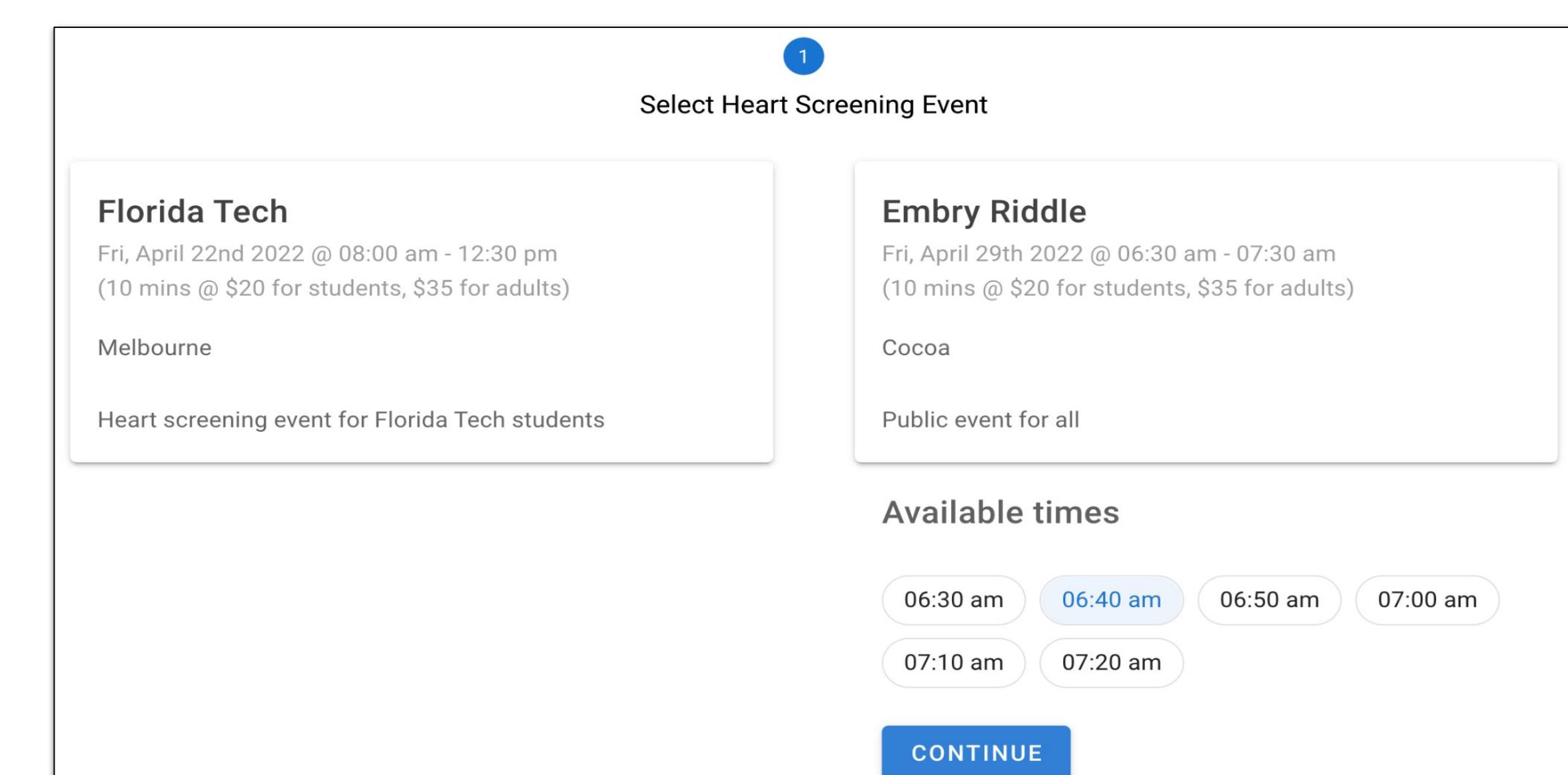
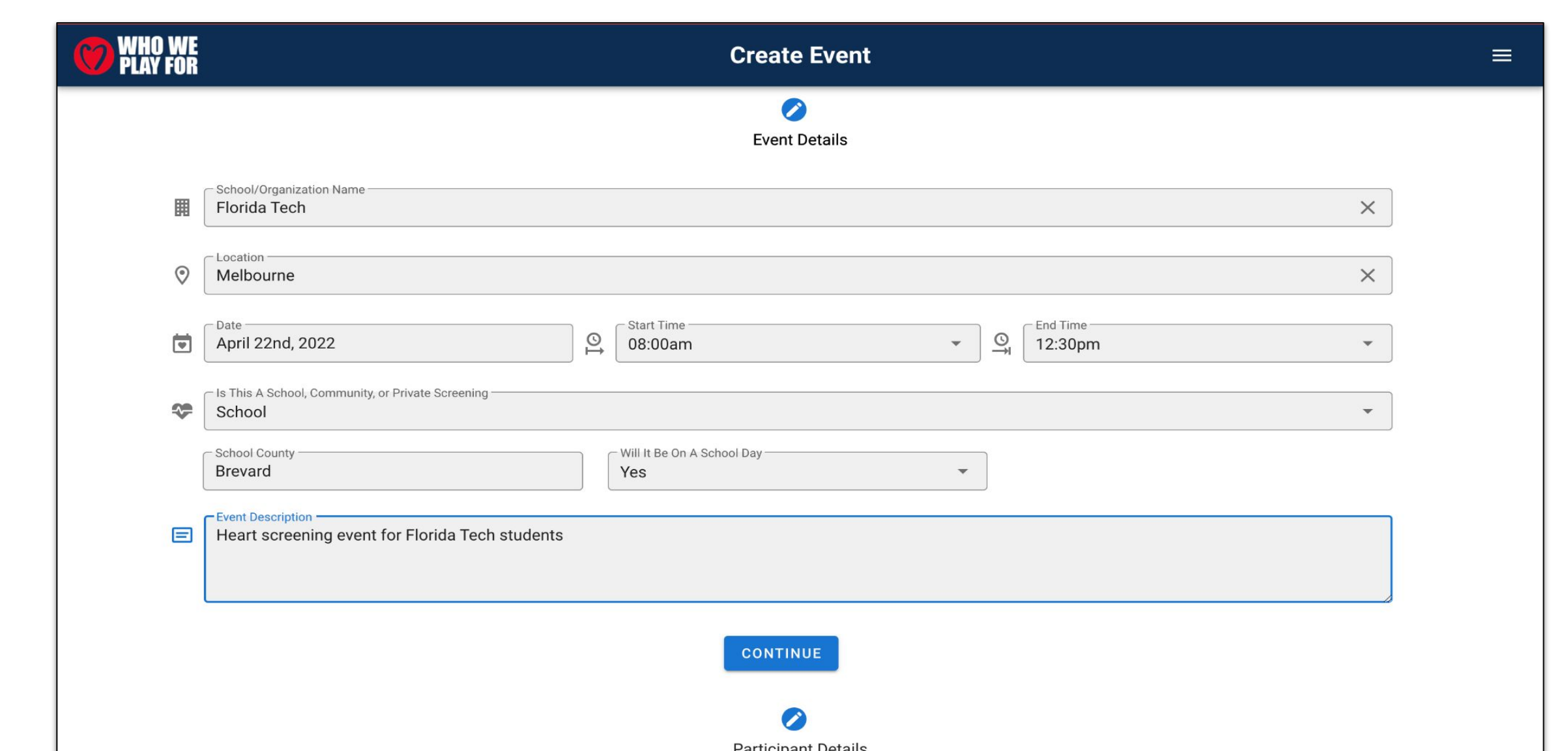
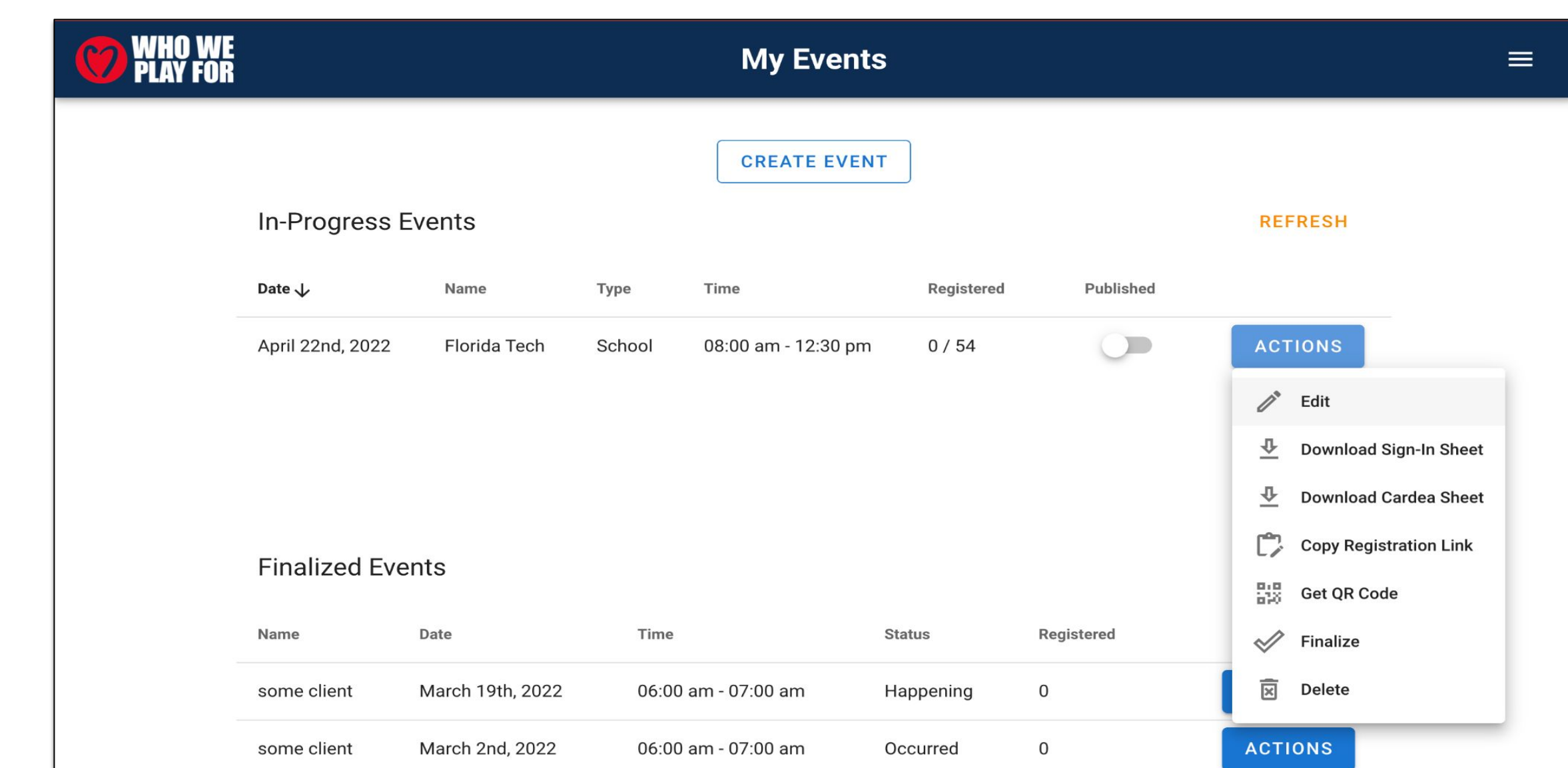
System Architecture

- **Stack/Frameworks:** Amazon Web Services, Terraform, Vue.js, Node.js.



User Interfaces

- In order from top to bottom: director dashboard, director event creation, participant registration page, and accountant search tab.



Acknowledgments

- **Dr. Eraldo Ribeiro and Dr. Philip Chan for academic guidance.**
- **Evan Ernst and Klynton Holmes for the opportunity to work with Who We Play For.**