FTC Match Analyzer

Figma Project: https://www.figma.com/design/
Run Prototype: https://www.figma.com/proto/

This is a scoring and performance analysis app intended to be used by FRST Tech Challenge (FTC) teams (I myself did FIRST robotics for 5 years and this is something I would've loved to have as an aid for scouting at competitions). The app allows team to record their own match performance and analyze their own strengths and weaknesses (both at competitions and at home). The app will also let you compare your data to live event data or data from past events from the FTC Event API. The goal is provide teams with accurate insights to support their own progression and also as a supplement during alliance selection.

There will be three main screens: Scoring, Team Data, and Event Data.

MATCH SCORING
- Run full practice matches where scoring each phase of the match is locked behind the timer to simulate competition runs. These practice matches get saved to local memory and the app provides data analysis from these practice runs.
- Run test matches that are untimed and all scoring options are available at any time. The user can choose to save these matches too, but will be warned that this can skew the data analysis.
- The app stores all this data in non-volatile memory

TEAM DATA ANALYSIS
- View detailed statistics with as average score, phase-specific point average, and use the points scored to figure out where the robot is spending most of its time on field.
- Suggest where your team is strong and what characteristics to look for in alliance partners to compliment weaknesses
- Can choose to filter out entire sessions or specific matches from the analysis (can also delete sessions/ matches…warn the user of destructive actions)
- Incorporate an API query option to load your team's data from a recent event to incorporate into the analysis

EVENT DATA ANALYSIS
- This queries the FTC Event API for a single past or ongoing event (the API lets you pull for a single event at a time).
- View summary data for all teams at the event, with ratings for estimated quality as an alliance partner, and drill down options for detailed team performance data (pretty much the same as the team analysis screen, but using the API to get it for all the teams)
- Identify potential alliance partners by comparing your own team's performance characteristics and field usage with other teams to find complementary strengths.