PocketSports: A Digital Coaching App

Garrett Gmeiner: ggmeiner2021@my.fit.edu
Tyler Ton: tton2021@my.fit.edu
Parker Cummings: pcummings2021@my.fit.edu
Taylor Carlson: tcarlson2021@my.fit.edu

Faculty Advisor: Fitzroy Nembhard fnembhard@fit.edu

Clients: Brad MacArthur bmacarthur@fit.edu

Date(s) of Meeting(s) with the Client for developing this Plan: 1/22/2025
Date(s) of Meeting(s) with the Advisor for developing this Plan: 01/21/2025

Goal and motivation:

- Up-and-coming sports need bigger platforms
- Many apps only focus on one end of coaching (practice plans/drills, goal setting, etc…)
  - Increases the need for multiple apps per team
- Reduce the need for multiple apps
- Fitting multiple sports on a single app
- Making it affordable for smaller teams/ communities
- Increasing limited competition for expansion/ market share

Approach (key features of the system):

Coaches

- Users can Set and Track Goals Effortlessly
  - Create and manage goals for individuals and teams with ease, enabling clear, actionable objectives and tracking progress through engaging interactive visuals. Monitor achievements over time to make informed decisions and drive performance.
- Users can Design Practice Plans
  - Plan your practices with precision using animated field and court views. Create detailed drills and plays that are easy to visualize and understand. Our drag-and-drop feature allows you to build and organize your practice sessions seamlessly. Share your comprehensive practice plans with your team to ensure everyone is on the same page and ready to excel.
- Users can Execute and Analyze Practice Plans
  - Implement practice plans confidently and monitor progress in real-time. Record player statistics and track time spent on each drill to gain valuable insights into individual and team performance. Use this data to assess progress toward goals, identify areas for improvement, and refine strategies for better results.

Players

- Users can Create Goals and Monitor Progress
  - Elevate performance seamlessly, blending goal-setting and progress tracking. Set ambitious targets and monitor achievements with a sleek, interactive dashboard. Enjoy real-time updates and dynamic visuals that keep motivation high and provide sharp insights for continuous improvement. Reach new heights and stay ahead of the game!
- Users can Be Ready to Practice
  - Stay organized with a calendar view that lets players see their daily practice schedule at a glance. Easily track practice times, locations, and focus areas to ensure you're always prepared and on top of your game.
- Users can Review Practice Results
  - Get instant access to detailed results and stats right after practice. See performance metrics and coach feedback to understand your strengths and areas for improvement.

Algorithms and tools

- Web Application
  - Ability to view player's current performance
    - React & Chart.js for displaying performance data
    - Node.js with express to handle backend
    - MongoDB database
  - Ability to create and track goals for both individuals and team
    - MongoDB database to store all the goals
    - Schema to format data
    - Post-request data from frontend
  - Ability to create a practice plan
    - Utilization of web sockets in order to create plans
    - Web sockets are used to create collaborative tools
    - WS package to install
  - Ability to execute a practice plan
    - React for frontend
    - Node.js with express to handle backend
    - MongoDB for database
- Project Management
  - Jira
    - Project management
  - GitHub
    - Code repository
    - Hosting Website
    - Code reviews

- ○ Git
  - ■ Intermediate with local and remote branches
  - ■ Pushes branch to GitHub
- ○ Google Docs/Slides
 - ■ Allows document collaboration

Novel features/functionalities

- ● Practice Plan creation, execution, and goal setting with performance monitoring all in one location is new. Many apps only focus on one end of coaching. This allows teams to reduce the number of apps needed and puts everything in one place.

Technical Challenges

- ● We plan to have the ability to view the player's current performance, but we need to ensure updates to a database when possible for offline modes.
- ● We plan to have the ability to create and track goals for both individuals and teams, but we need graphically pleasing charts.
- ● We plan to have the ability to create a practice plan. Still, we need custom play/practice plan creation from different users simultaneously and to save previous plays to continue working on it at a later time.
- ● We plan to have the ability to execute a practice plan, but we need to be able to keep track of time and save and update the database when coming back online.
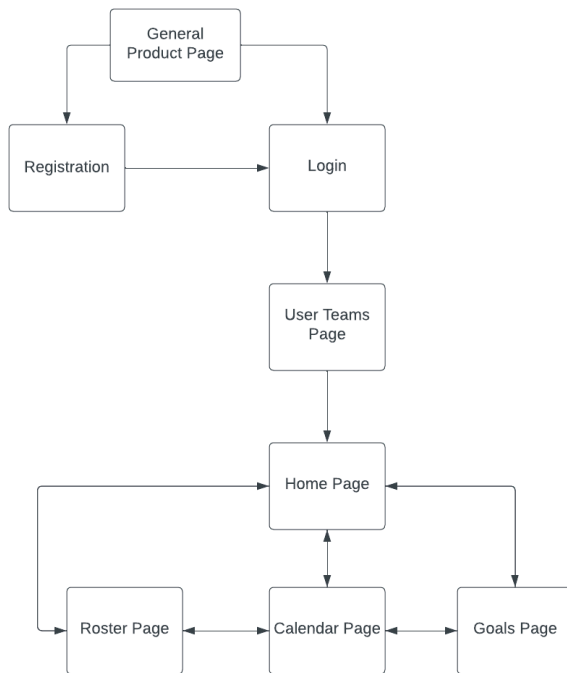
Design
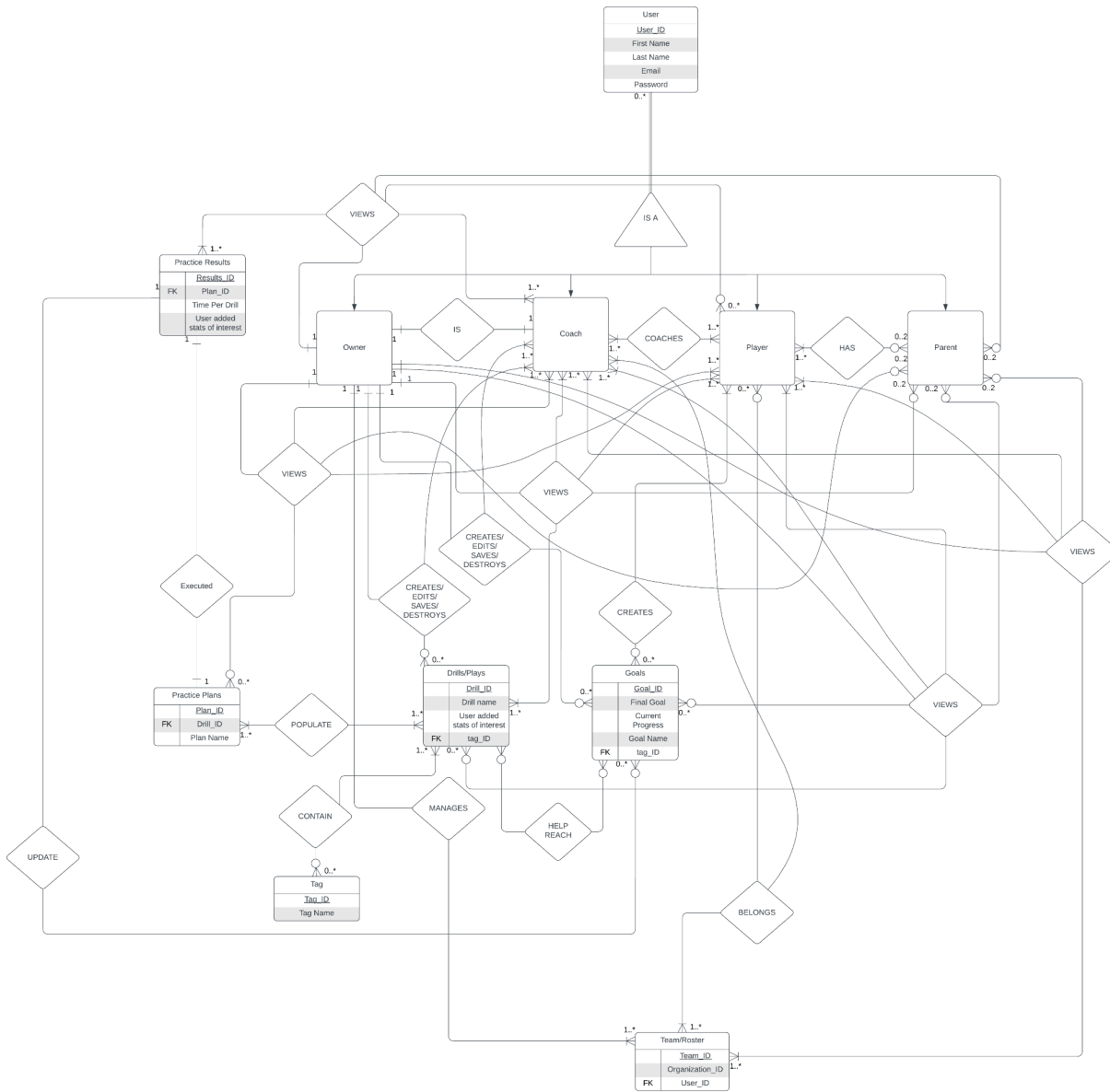
- ● components/modules of the software system
  - ○ Landing Page
  - ○ Login
  - ○ Team Dashboard
  - ○ Coach View
  - ○ Player View
  - ○ Calendar
  - ○ Drill bank
  - ○ Practice Plans

- ○ Practice Results
- ○ Team/Individual Goals
- ○ Team Roster
- Interfacing with different types of users
  - ○ Coach
    - ■ Schedule
      - Coach can create and delete events for the players on his/her team
    - ■ Roster
      - Coach can add or remove players from the team and add information about them
    - ■ Goals
      - Coach can create team goals for the players and enter stats to accomplish the goals
    - ■ Practice Plans
      - Coach can create, edit, and delete practice plans for team
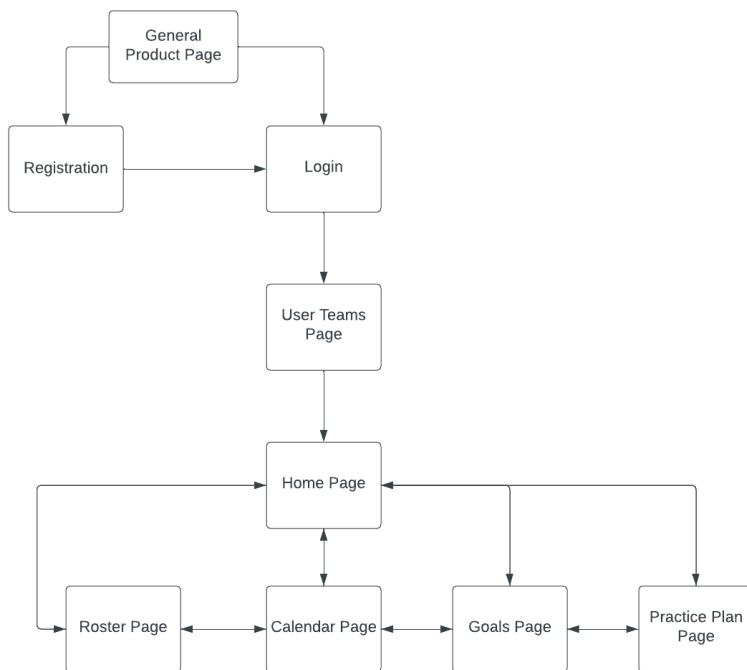
  - ○ Player
    - ■ Schedule
      - Players can view events on a calendar
    - ■ Roster
      - Players can view the roster of their team and information about each player and coach
    - ■ Goals

- Players can create personal goals and view team goals

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          │ Registration │──▶│    Login     │
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        │ Roster Page  │◀▶│ Calendar Page│◀▶│  Goals Page  │
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- Interfacing with different hardware devices
  - The system should be computer and mobile-friendly

Evaluation

- Speed (e.g. how fast does the system achieve each of its goals?)
  - Registration should take less than two seconds
    - Registration takes less than two seconds
  - Login should take less than a second
    - Logging in takes less than a second
  - Navigational buttons should take less than a second
    - Buttons take less than a second
  - Team Creation should take less than a second
    - Team creation takes less than a second
  - To Test: Practice Plan Creation should take less than a second
  - To Test: Player addition/deletion should take less than a second
  - To Test: Event addition/deletion should take less than a second
  - To Test: Goal Creation should take less than a second
- Accuracy (e.g. how accurate is the system?)
  - To Test: The system recommends drills correctly based on the selected sport, team needs, and team goals

- Reliability (e.g. out of 10 times, how many times does the system achieve each of its goals)
    - To Test: When a coach goes to select a suggested drill for his/her practice, 10 times out of 10 the suggested drills will match the sport selected for the team
    - To Test: When a player joins the team via the registration feature, 10 times out of 10 the player will be added to the roster visible to the coach
    - When a coach creates a team, 10 times out of 10 that team will show up in the coach's available teams page
        - Works 10 out of 10 times
- User Survey (e.g. rating of 1-5 on each of the different features)
    - Compare how long it takes a brand new user to complete a task (Client) versus a familiar user (the devs)
        - Client:
            - Given the task of registering, logging in, and creating team
            - Stated, "Everything was easy to find and understand."
            - Did not run into any problems or confusion while completing task
            - Registration rating: 4
            - Login rating: 5
            - Team Creation: 5
            - Feedback: The client stated that there should be a pop-up for a first-time user logging in on how to create a team and what the team code is used for.

Progress Summary:

Module/feature	Completion %	To do
General Product Page	95%	Look for potential improvements
Registration page	95%	Look for potential improvements
Registration Feature	90%	Store user profile picture, Invite via player email
Login page	95%	Look for potential improvements
Login Feature	95%	Look for potential improvements
General Team Page	90%	Styling needed for homepage/roster display
Player Home Page	30%	Styling needed
Team Creation/Deletion	90%	Look for potential improvements, check different scenario outputs

Feature		
Coach Home Page	30%	Styling needed
Player Schedule Page	0%	Needs to be created and styled
Coach Schedule Page	0%	Needs to be created and styled
Player Goal Page	0%	Needs to be created and styled
Coach Goal Page	0%	Needs to be created and styled
Player Roster Page	0%	Needs to be created and styled
Coach Roster Page	0%	Needs to be created and styled
Practice Plan Feature	0%	Needs to be created
Goal Addition/ Deletion Feature	0%	Needs to be created
Player Addition/Deletion Feature	0%	Needs to be created
Event Addition/Deletion Feature	0%	Needs to be created
Drill Feature	0%	Needs to be created

Milestone 4 (February 24)
- Create the homepage for the coach
- Create the homepage for the player
- Create a calendar page for the coach
- Create a calendar page for the player
- Create drill bank
- Create different drill views for each sport
- Add interactive lines and other icons for drill editing

Milestone 5 (March 26)
- Create goal page for coaches with trackable metrics of individual player goals and team goals
- Create goal page for players with trackable metrics
- Implement saving a drill to a PDF and sending it from coaches to players
- Create practice plan feature
- Create event feature for the calendar

- Execute practice plan feature
- Roster user removal
- Create E-book page
- Create Poster

Milestone 6 (April 21)
- Make styling mobile-friendly
- Dockerize project
- Host the web application
- System-wide testing and bug fixes
- Create User/Dev manual

Task matrix for Milestone 4

Task	Garrett	Tyler	Parker	Taylor
Create Coach/Player Homepage	0%	0%	25%	75%
Create Coach/Player calendar page	0%	0%	25%	75%
Create drill bank	70%	30%	0%	0%
Create different drill views for each sport available	0%	0%	20%	80%
Add interactive icons and lines for drill creation	25%	25%	50%	0%

Description (at least a few sentences) of each planned task for Milestone 4:

- Coach/Player homepage: Design and implement a homepage for the coach to view his/her roster of players, designed drills and goals.
- Coach/Player calendar: Design and implement a page in which the coach has a monthly view of the calendar listing all events for his/her team such as practices, games, fundraisers, team dinners, etc.
- Drill bank: Design a database for coaches to store the PDFs of the created drills they made using the interactive drill creator. These drills can be selected for a practice or stored for later use.
- Drill views: Create a functionality to see different drills in the drill bank based upon the sport selected (i.e. if the sport is volleyball, only VB drills are shown, if basketball, only BB drills are shown, etc.)
- Interactive icons and lines: Implement a drill creator in which coaches can use a drag-and-click interface to create drills for a team practice. This icons will

represent players and defenders, lines between them, or paths offensive or
defensive players need to take in the drill

Approval from Faculty Advisor:

- "I have discussed with the team and approve this project plan. I will evaluate the progress
  and assign a grade for each of the three milestones."
- Signature: _____ Date: _____