

Functional Specification Document

Small Goods Competition App

1. Project Overview

The project is to build a seamless web-based app that manages the smooth operation of Olympic Weightlifting and Powerlifting competitions. The app will include different user views depending on user roles and have multiple functions respectively. The app will integrate with local network settings so that it can run without relying on internet. The MVP will include all requirements listed below.

2. MVP Functional Requirements

FR1 Defining Competition Model

- Admin/CO should be able to define a competition model.
- Model is sequence of steps, which contains every step of the event in order. Each step in the model has each component defined. During the competition, the system reads the current step in the model and shows relevant component detail to users.
- The definition should include:

Events	Olympic Weightlifting/Powerlifting
Lifts	OLY – Snatch, Clean & Jerk PL – Squat, Bench Press, Deadlift
Flights	
Athletes	
Weight	
Referees	
Input options	e.g. Good lift, No lift, Not to depth
Metric	e.g. weight, reps, time
Scoring function	Sum, Max, Time
Timer	Events, Breaks (The number of parameters would be differed depending on event.)

FR2 Data Recording / Management

- The system should log any input and calculated scores against each step.
 - Admin/CO should be allowed to search and check the data.
-

FR3 Live Model Editing

- Admin/CO should be able to make live changes to the initial competition model defined in FR1 during competition.
 - The editing includes changing, inserting, and deleting against any detail in the model.
 - The changes should be applied without restarting the event.
-

FR4 Referees interface

- Referees should be able to input the result of attempts.
 - The referee interface would show buttons with defined inputs from competition model.
 - The data of button selection will be logged to the current step in the model.
-

FR5 Scoring Function

- Referee input data that is stored in the model will be used for score calculation. The scoring function type will be defined in competition model (FR1).
 - The system should be able to support multiple concurrent scores for a single event.
 - The MVP will take three scoring types into account:
 - Max (e.g. heaviest weight)
 - Sum (e.g. total weight, total successful reps)
 - Time (e.g. fastest completion)
- However, this system should allow extensibility on new scoring rules without breaking.
-

FR6 Reordering of athletes

- Admin/CO should be able to reorder athletes in real-time within a block of steps during the competition.
 - The system should reorder the heaviest weights to the last turn.
-

FR7 Managing Timer

- Timekeeper/TC will be able to start, pause, reset the timer.
 - The timer setup will be defined in the model (FR1) for each step.
-

FR8 QR code generation for Wi-Fi

- QR code to connect to event Wi-Fi should be provide as the app will be hosted on local network using router.
-

FR9 DNS Configuration

- Local DNS should be set up for simple URLs.
 - The users will access to the app by using the URLs that are relevant to their roles. (e.g. sg.com/athletes)
-

FR10 Athlete Notification

- The system should send notifications to athletes/coaches for upcoming attempts.
 - To achieve this, devices of athletes/coaches should be connected to event Wi-Fi.
-

FR11 Display

- Real-time competition status should be displayed in large screen.
 - Current athlete
 - Current weight, lift, event
 - Current scores, rankings
 - Time
 - Next athlete
 - Admin will have access to display.
-

3. Non-Functional Requirements

ID	Non-Functional Requirement	Description
NFR1	Usability	UI must be intuitive and easy to use for every stakeholder.
NFR2	Availability	The system must be accessible during the entire duration of competition.
NFR3	Reliability	The system must process entire functions without data loss or error during the duration of competition.
NFR4	Extensibility	The code should be modular and documented nicely for further development.
NFR5	Offline Operation	The app should run on router-based local network without internet via laptop as central server.

4. Proposed User Views

(1) Admin View - Competition Organiser (CO)

This view is to set up competition model and manage competitions. Also, it has access to all other role views.

Key features

- Competition Model Setup and edit
 - Full control over the entire system
 - Network related settings
-

(2) Operation Desk View - Technical Controller (TC) / Scorekeeper / Timekeeper

This view is for operation desk, which technical controller, scorekeeper, and timekeeper all can use. It is to manage competition operations.

Key features

- Manage official competition scores if needed
 - Manage timers for attempts and breaks
 - Manage athlete lifting order
 - Initial setup will be defined in the model. Editing is possible and will be reflected in the model.
 - View detail of attempt and athletes
-

(3) Referee View

This view is to adjudicate and record the result of each attempt.

Key features

- View current attempt and athlete
 - Show buttons defined from FR1.
-

(4) Athlete / Coach View

This view will show athlete and coach their current and upcoming attempts.

Key features

- Show details of athletes and lifts
 - Show status of attempts
 - Get notification for next turns
 - Show real-time scores
-