

LTMS.io Product Backlog

Team 15

Team Members:

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Product Statement:

The FIRST LEGO League is an international competition that allows students to build and test their LEGO projects against each other. Unfortunately, the scoring, timing, schedules, and judging is all done on paper, so there is no convenient system to operate these tournaments. LTMS.io provides a web application that all tournament organizers across the world can use to properly conduct their competitions.

Background Information:

Audience:

The FIRST LEGO League does not have an efficient means of scoring the teams that take part in the competitions. The scoring is currently being done using pen and paper. This scoring system is slow and inefficient. We will target the FLL tournament organizers, such as the volunteers, judges, referees, and directors, to resolve their issues.

Similar Platforms:

There are platforms, such as FLL-tools.com, that have been created to be used for scoring in the FIRST LEGO League competitions. These platforms are used to record the scores that the judges will assign to each team. The platforms then calculate the final scores.

Limitations:

The other platforms that are available which are Windows exclusive and contain fragmented systems that are poorly organized. We will have to provide all the functions on a cohesive platform which allows the judges to seamlessly navigate the website.

Requirements (Backlog):

Functional:

1. As a user, I would like to be able to create an account so that I have an ID to create and be invited to tournaments.
2. As a user, I would like to be able to login to my account so that I can manage my tournaments and account.

3. As a user, I would like to be able to edit account details so that I can change my account info as I see fit.
4. As a user, I would like to click on the logo to go to the dashboard.
5. As a user, I would like to be able to add a profile picture so that I can easily be identified at an event.
6. As a user, I would like to be able to sign out of my account so that I can ensure my information is secure.
7. As a user, I would like to reset my login info and password so that I can update my security info.
8. As a user, I would like to be able to search for unofficial tournaments so that I can register for the tournament I want to volunteer at.
9. As a user, I would like to be able to view unofficial tournaments near me so that I can register for a local tournament.
10. As a user, I would like to be able to see the schedule for the events so that I can plan ahead for the tournament.
11. As a user, I would like to be able to see the final scores so that I can see tournament standings.
12. As a user, I want to be able to change between light mode and dark mode so that I can customize my UX.
13. As a user, I want to be able to access quick links to relevant documents so that I have reference material for the game.
14. As a user, I want third party single sign on so that I don't need a password.
15. As a user, I want 2-factor-auth so that my account is more secure.
16. As a user, I would like to delete my account.
17. As a timer (volunteer), I would like to set a timer during the team matches so that I can consistently manage time.
18. As a timer (volunteer), I would like to display scores on an auxiliary display, so that I can display the standings to the audience.
19. As a timer (volunteer), I would like to have sound effects so that I can inform participants of remaining match time.
20. As a referee, I would like to be able to enter scores so that I can record the scores of each team in each event.
21. As a head referee, I want to be able to modify scores and make notes on my modifications so that I can make proper adjustments as necessary.
22. As a head referee, I want to be able to assign other users as referees so that I can have additional users with referee access.
23. As a head referee, I want to be able to run practice matches so that I can run matches without saving scores.

24. As a tournament director (admin), I would to be able to generate a schedule for the tournament based on parameters (e.g. start/end time, # of matches per team) so that I can distribute a schedule to teams and run the event.
25. As a tournament director (admin), I want to be able to assign users as different volunteer roles so that users can have different levels of access to the event.
26. As a tournament director (admin), I want a checklist of things to do/run (e.g. generate schedule, assign volunteers), so that I can keep track of event tasks.
27. As a tournament director (admin), I want to be able to invite other volunteers to my event with role based permissions so that they can access functionality to execute their role.
28. As a tournament director (admin), I want to be able to generate a schedule report so that I can inform teams and volunteers of the day's schedule.
29. As a tournament director (admin), I want to be able to manually change the generated schedule so that I can accomodate special cases into the schedule
30. As a tournament director (admin), assign awards based on judging scores so that we can give out awards.
31. As a tournament director (admin), I want to generate a report of advancing teams so that we can advance teams.
32. As a tournament director (admin), I would like to drop teams from the schedule so that if a team can not compete we can adjust the schedule.
33. As a judge, I want to be able to fill out the judging rubric through the application so that my notes and scores are submitted securely.
34. As a judge, I want to continually rank my teams relative to each other so that I can keep track of who performed the best.
35. As a judge, I want to lock in previous team rankings, so that I don't lose track of my ranking history.
36. As a judge advisor, I want to be able to view all judging rubrics so that I can view all the judges' notes and scores together.
37. As a judge advisor, I want to be able to assign other users as specific types of judges so that I can have additional users with judge access.
38. As a judge advisor, I want to be able to send teams their feedback from their judging sessions so that they have a better idea of what they did well and what they can improve on.
39. As a judge advisor, I want to be able to modify the notes taken by judges so that they can be sent to teams.
40. As a judge advisor, I want to be able to see documents and guides as well as allowing relevant judges to, so that they can better understand their relevant award criteria.

41. As a developer, I want to easily write new score sheets, so that new challenges year-by-year are able to be added to the application.
42. As a developer, I want to easily be able to assign the role of global tournament director to an account so they can delegate tournament director status to others.
43. As a developer, I would like to expose a public API so that other developers could pull event data.
44. As a developer, I would like to track orphaned events from deleted accounts, so that data are still reachable after account deletion.

Non-Functional:

- Design
 - The frontend will be developed in React and will query the backend using API's. The backend will be developed in Node.js and connected to MongoDB to store data. The idea behind the design is to provide a flexible platform that is compatible with multiple different browsers (Google Chrome, Firefox). It will also be designed to maintain over 10000 concurrent users which will make it scalable enough to provide access to all users across the country.
- Usability:
 - The website will be designed as a user-friendly web application that allows any FIRST LEGO League volunteer to effectively utilize. All the functional applications will be available on the front page of the website for ease of access.
- Performance
 - The website should be built with easy usability in mind. Whenever a user changes pages or presses a button, the website should not linger for too long. Ideally, the time it will take to move pages should be seamless. In other words, less than half a second.
- Security
 - Tournament directors should be password protected and secure against students trying to access the point systems and information. The director creating the event should give authentication to the accounts linked to judges within the same tournament. Accounts with no authentication will not be able to invite themselves to events owned by tournament directors. This will be done with two factor authentication system.
- Hosting
 - Our frontend and backend will be hosted on Heroku since the production of these systems will be in tandem during the design process.