

# User Requirement Specification

Lyubo Lyubchev

## AGREEMENT WITH CLIENT

DuelSys Inc. requires a desktop and website application to manage tournaments. The software should support round-robin badminton tournaments but should be extendable to other systems and sports. The desktop solution is a windows forms application coded in C#. Website is coded using the ASP.NET Core framework with Razor Pages.

## Non-Functional Requirements

- **NFR-01: Maintainable and extendable** (Must)

Proper OO principles must be applied to ensure good maintainability and extensibility of the code base.

- **NFR-02: Bug free system** (Must)

Appropriate testing techniques must be used when implementing the system to ensure proper functioning.

- **NFR-03: Secure software** (Must)

Only authorized people may make use of the system and can only access data they are authorized for. Passwords and user input must also be handled appropriately.

# Functional Requirements

- **FR-01: Manage Tournaments (Must)**

Staff must be able to manage (CRUD operations) the tournaments.

- **FR-02: Support registering players (Must)**

When a player is interested in participating in a tournament, they can visit the website, retrieve the list of available tournaments, and register themselves for it.

- **FR-03: Support generating tournament schedule (Must)**

Staff must be able to generate the tournament's schedule.

- **FR-04: Support multi-game matches (Must)**

When a game between two players is finished, the results must be registered in the system by staff. Each match consists of 3 games.

- **FR-05: Support showing tournament information and results (Must)**

Any interested party (e.g., a sport enthusiast, a player) must be able to retrieve information about any given tournament.

- **FR-07: Support leaderboard (Should have)**

Support a leader board. When there is an ongoing tournament, any interested party can retrieve the list of players participating in the tournament, ordered based on their current position/rank in the tournament.

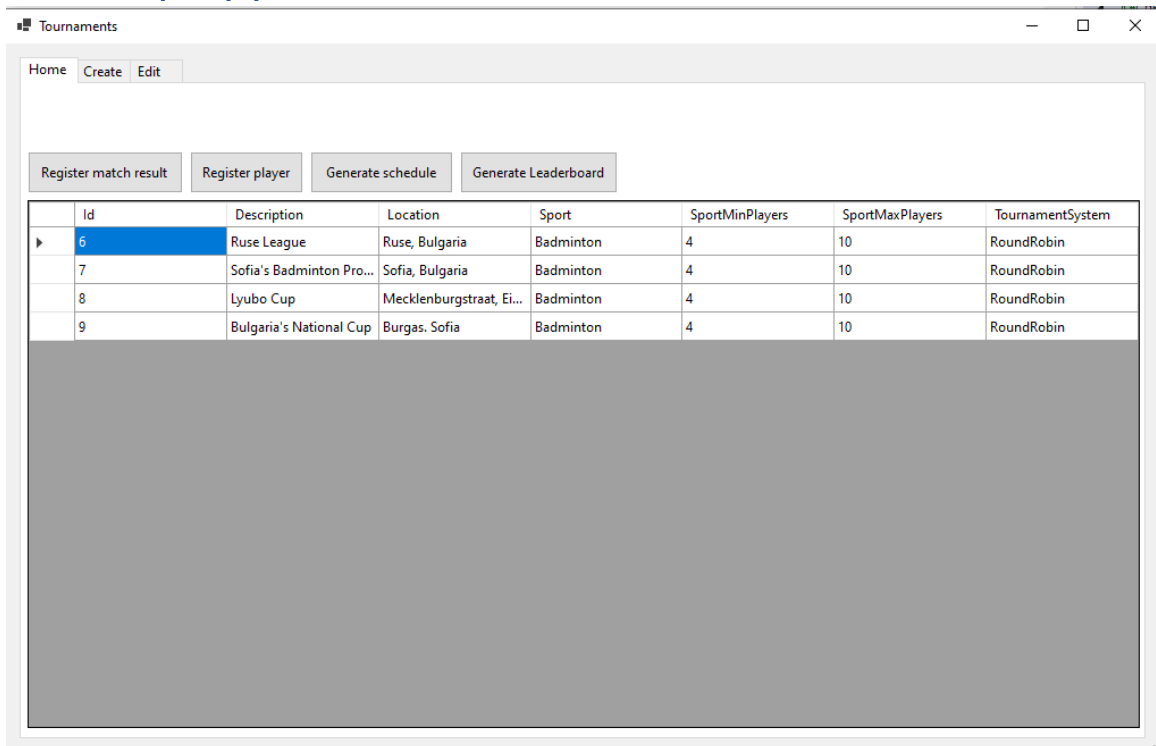
## Use cases

<p><b>Use Case 1: Add a new tournament</b></p> <p><b>Addressing - FR-01</b></p> <p><b>Actor – staff.</b></p> <ol style="list-style-type: none"> <li>1. Staff adds creates a tournament by first opening the windows form</li> <li>2. The staff fills all required inputs</li> <li>3. The software validates the user input.</li> <li>4. The system adds the tournament</li> </ol> <p>Extension:</p> <p>3a. The input is invalid.</p> <ol style="list-style-type: none"> <li>1. Error message pops up.</li> <li>2. Returns to step 3.</li> </ol>	<p><b>Use Case 2: Display all tournaments</b></p> <p><b>Addressing - FR-01</b></p> <p><b>Actor – staff.</b></p> <p>(Precondition) Add a new tournament</p> <p>A list of all the tournaments is shown to the staff.</p>	<p><b>Use Case 3: User register to tournament</b></p> <p><b>Addressing - FR-02</b></p> <p><b>Actor – user / staff.</b></p> <p>(Precondition) Display all tournaments</p> <ol style="list-style-type: none"> <li>1. User goes to the website.</li> <li>2. The website displays list of all the tournaments to the user.</li> <li>3. The user tries to register in tournament.</li> <li>4. The website returns an error to let the user know if the registration was successful.</li> </ol> <p>Extension:</p>
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		<p>3a. The maximum number of players is reached, or the tournament has already started</p> <ol style="list-style-type: none"> <li>1. The system lets the user know that the registration failed.</li> <li>2. Returns to step 2.</li> </ol>
<p><b>Use Case 4: Generate tournament schedule</b></p> <p><b>Addressing - FR-03</b></p> <p><b>Actor – staff.</b></p> <p>(Precondition) Display all tournaments</p> <ol style="list-style-type: none"> <li>1. The minimum number of players is reached.</li> <li>2. The staff generates the tournament schedule.</li> <li>3. The system generates the tournament schedule based on the tournament system.</li> </ol> <p>Extension:</p> <p>1a. The minimum number of players is not reached</p> <ol style="list-style-type: none"> <li>1 Stop.</li> </ol>	<p><b>Use Case 5: Register game result</b></p> <p><b>Addressing - FR-04</b></p> <p><b>Actor – staff.</b></p> <p>(Precondition) Generate tournament schedule</p> <ol style="list-style-type: none"> <li>1. A game has finished.</li> <li>2. The staff chooses the match.</li> <li>3. The staff registers the result for the match in the system.</li> <li>4. Result is registered for the specified match</li> </ol> <p>Extension:</p> <p>3a. The staff did not enter a valid result.</p> <ol style="list-style-type: none"> <li>1. The system lets the staff know that the inserted result is invalid.</li> <li>2 Returns to step 3.</li> </ol>	<p><b>Use Case 6: Show tournament results</b></p> <p><b>Addressing - FR-05</b></p> <p><b>Actor – user.</b></p> <p>(Precondition) Register game result</p> <ol style="list-style-type: none"> <li>1. User goes to the website</li> <li>2. User searches for the tournament to see the results.</li> <li>3. The website displays a user table with all the matches to be played and a leaderboard if one is generated by a staff</li> </ol>

<p><b>Use Case 7: Support leader board</b></p> <p><b>Addressing - FR-07</b></p> <p><b>Actor – user.</b></p> <p>(Precondition) Register game result</p> <ol style="list-style-type: none"> <li>The user goes to the website.</li> <li>The user wants to see the leaderboard of a specific tournament.</li> <li>The system shows the user the leaderboard of the selected tournament.</li> </ol>		
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## Desktop application



Tournaments

Home

Create

Edit

Create Tournament

Description

Start Date

Friday, 10 June 2

Location

End Date

Friday, 10 June 2

Sport

Badminton

System

round-robin

Create

Create Sport

Name

Minimum Players

4

Maximum Players

16

Create

Create Tournament System

Name

Create

MatchResultRegister

Please select a match

Lyubo Lyubchev vs Mihail Kanev

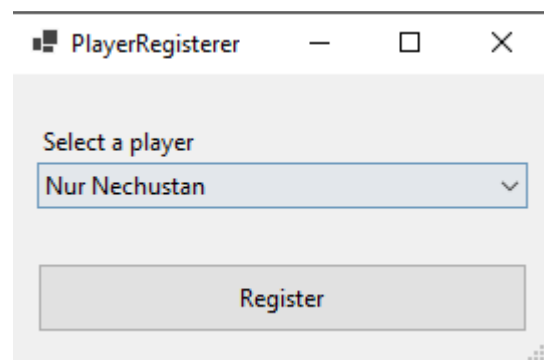
First Player Result

21

Second Player Result

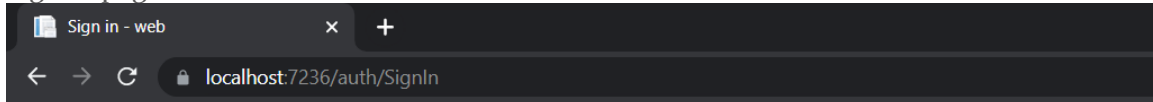
3

Submit



## Website

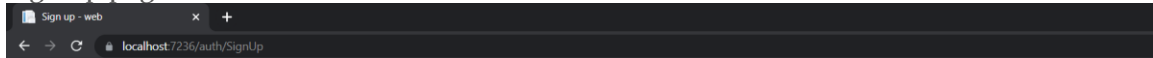
### Sign in page



## Sign in

Email  Password   [sign up](#)

### Sign up page



## Sign up

First Name  Last Name  Email  Password   [sign in](#)

### Home page

Hello **Lyubo Lyubchev**  
[sign out](#)

Description	Location	Starting date	Ending date	Sport	Min Players	Max Players	System		
Ruse League	Ruse, Bulgaria	Tuesday, 07 June 2022	Wednesday, 29 June 2022	Badminton	4	10	RoundRobin	<input type="button" value="register"/>	<a href="#">view</a>
Sofia's Badminton Pro League	Sofia, Bulgaria	Wednesday, 08 June 2022	Wednesday, 22 June 2022	Badminton	4	10	RoundRobin	<input type="button" value="register"/>	<a href="#">view</a>
Lyubo Cup	Mecklenburgstraat, Eindhoven	Monday, 20 June 2022	Friday, 24 June 2022	Badminton	4	10	RoundRobin	<input type="button" value="register"/>	<a href="#">view</a>
Bulgaria's National Cup	Burgas, Sofia	Friday, 01 July 2022	Tuesday, 05 July 2022	Badminton	4	10	RoundRobin	<input type="button" value="register"/>	<a href="#">view</a>



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## Tournament information

sport: **Badminton**

system: **RoundRobin (3 games match)**

location: **Burgas. Sofia**

start date: **Friday, 01 July 2022**

ending date: **Tuesday, 05 July 2022**

Rank	Player	Won	Lost
1	Lyubo Lyubchev	3	0
2	Mihail Kanev	2	1
3	Eva Petricheva	1	2
4	Todor Kostadinov	0	3

#	Matches	Winner	Play date
1	Lyubo Lyubchev vs Mihail Kanev	Lyubo Lyubchev	Friday, 01 July 2022
2	Lyubo Lyubchev vs Eva Petricheva	Lyubo Lyubchev	Friday, 01 July 2022
3	Lyubo Lyubchev vs Todor Kostadinov	Lyubo Lyubchev	Saturday, 02 July 2022
4	Mihail Kanev vs Eva Petricheva	Mihail Kanev	Sunday, 03 July 2022
5	Mihail Kanev vs Todor Kostadinov	Mihail Kanev	Sunday, 03 July 2022
6	Eva Petricheva vs Todor Kostadinov	Eva Petricheva	Monday, 04 July 2022

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## Tournament information

sport: **Badminton**

system: **RoundRobin (3 games match)**

location: **Mecklenburgstraat, Eindhoven**

start date: **Monday, 20 June 2022**

ending date: **Friday, 24 June 2022**

**Not enough games played, so there is no LEADERBOARD**

#	Matches	Winner	Play date
1	Lyubo Lyubchev vs Mihail Kanev	Lyubo Lyubchev	Monday, 20 June 2022
2	Lyubo Lyubchev vs Eva Petricheva	Lyubo Lyubchev	Monday, 20 June 2022
3	Lyubo Lyubchev vs Todor Kostadinov	Not played yet	Monday, 20 June 2022
4	Lyubo Lyubchev vs Nur Nechustan	Not played yet	Monday, 20 June 2022
5	Lyubo Lyubchev vs Test Tester	Not played yet	Monday, 20 June 2022
6	Lyubo Lyubchev vs Testov testov	Not played yet	Tuesday, 21 June 2022
7	Mihail Kanev vs Eva Petricheva	Not played yet	Tuesday, 21 June 2022
8	Mihail Kanev vs Todor Kostadinov	Not played yet	Tuesday, 21 June 2022
9	Mihail Kanev vs Nur Nechustan	Not played yet	Tuesday, 21 June 2022
10	Mihail Kanev vs Test Tester	Not played yet	Wednesday, 22 June 2022
11	Mihail Kanev vs Testov testov	Not played yet	Wednesday, 22 June 2022
12	Eva Petricheva vs Todor Kostadinov	Not played yet	Wednesday, 22 June 2022
13	Eva Petricheva vs Nur Nechustan	Not played yet	Wednesday, 22 June 2022
14	Eva Petricheva vs Test Tester	Not played yet	Wednesday, 22 June 2022
15	Eva Petricheva vs Testov testov	Not played yet	Thursday, 23 June 2022
16	Todor Kostadinov vs Nur Nechustan	Not played yet	Thursday, 23 June 2022
17	Todor Kostadinov vs Test Tester	Not played yet	Thursday, 23 June 2022
18	Todor Kostadinov vs Testov testov	Not played yet	Thursday, 23 June 2022
19	Nur Nechustan vs Test Tester	Not played yet	Friday, 24 June 2022
20	Nur Nechustan vs Testov testov	Not played yet	Friday, 24 June 2022
21	Test Tester vs Testov testov	Test Tester	Friday, 24 June 2022

Hello **Lyubo Lyubchev**

[sign out](#)

## **Tournament information**

sport: **Badminton**

system: **RoundRobin (3 games match)**

location: **Sofia, Bulgaria**

start date: **Wednesday, 08 June 2022**

ending date: **Wednesday, 22 June 2022**

**Not enough games played, so there is no LEADERBOARD**

**Not schedule generated for this match**