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REVISION HISTORY

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# Case description

The company *DuelSys inc.* wants a software solution to allow their customers (sport associations) to manage their sport tournaments. For now, the software must support a *round-robin1* tournament system for *badminton*2, but *DuelSys inc.* also wants the software to have the potential to support *other types of* tournament systems and sports.

A tournament has multiple *players* competing in *badminton* games to determine who is the best (e.g., gold, silver, and bronze medal). To determine this, the purpose of the software is to register all the results of each game.

This software solution will be used by sport association *staff* (*staff*) to organize tournaments and by *players* to find information about the tournament(s) they want to participate in.

# User requirements

## Functional requirements

Below you can find the requirements for this assignment, and they are divided into three (3) categories. Your submission must contain all the *Core requirements*, at least one (1) of the *Major requirements* and at least one (1) of the *Minor requirements*.

During the first tutor meeting in week 13, you can propose and *get approval* from your tutor which Major and Minor functional requirements you would like to implement. Make sure that your selection gives you an opportunity to cover all LOs.

In addition, you can still propose and discuss with your tutor which *other* functional requirements you want to include.

### Core requirements

|  |  |
| --- | --- |
| FR | Priority (MSCW) |
| *FR-01: Manage Tournaments Staff* must be able to manage (*CRUD* operations) the tournaments. | M |
| *FR-02: Support registering players* When a player is interested in participating in a tournament, they can visit the sport association website, retrieve the list of available tournaments, and register themselves for it. | M |
| *FR-03*: *Support generating tournament schedule Staff* must be able to generate the tournament’s schedule. | M |
| *FR-04: Support registering the results of the games* When a game between two players is finished, the results must be registered in the system by *staff*. | M |
| *FR-05: Support showing tournament information and results* Any interested party (e.g., a sport enthusiast, a player) must be able to retrieve information about any given tournament. | M |

### Major Requirements

|  |  |
| --- | --- |
| FR | Priority (MSCW) |
| * 1. *FR-06: Support multiple tournament systems*   Extend the software solution to also support different tournament systems. It should be possible, for a *staff* member, to specify what tournament system should be used when creating a new tournament. For now, at least one of the following tournament systems (in addition to round-robin) is required:   * 1. o Single-elimination3   2. o Double-elimination4   3. o Double round-robin5 | C |
| *FR-07: Support multiple sport types*  Extend the software solution to also support different sport types (e.g., basketball, tennis, quidditch, league of legends, chess, etc.). It should be possible, for a *staff* member, to specify which sport type when creating new tournament. Make sure that when registering the result of a game the official scoring rules are followed. | C |
| *FR-08: Support matches in a tournament*  Extend the software solution to support multi-game matches in a tournament. For now, every match will consist of three (3) games that must be played by the same players and the player with most one games has won the match. | C |

### Minor requirements

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| --- | --- |
| FR | Priority (MSCW) |
| *FR-09: Support leader board* Extend the software solution to also support a leader board. When there is an ongoing tournament, any interested party (e.g., a sport enthusiast, a player) can retrieve the list of players participating in the tournament, ordered based on their current position/rank in the tournament. | C |
| *FR-10: Generate player profile* Extend the software solution to also show player profile information. The information should include player’s general information, information related to participation in different tournaments with the ranking and can include the individual matches (games) played against different opponents. | C |
| *FR-11: Support challenge games* Extend the software solution to also support challenge games. It should be possible for a player to challenge another player for a game. When the challenge is created, the opponent  can either accept or reject the challenge. If it is accepted, the result of the game can be registered by one of the players. | C |
| *FR-12: Handle ties*  At the end of a tournament, when all matches are played that the software only have three winners. The software handles any ties, i.e., two or more players have won the same number of games/matches, so that is always only one player per for the first, the second and the third places.  As an example, given in Figure 3 of Appendix A, Kento Momota and Viktor Axelsen won two (2) games/matches each, while the other opponents just won one (1). The system decides that Kento Momota should score the first place, because he won both games played against Viktor Axelsen.  For handling ties, you can re-use and extend the strategy given in the example above or define your own strategy. | C |

## Nonfunctional requirements

* *NFR-01: Maintainable and extendable* Proper OO principles must be applied to ensure good maintainability and extensibility of the code base.
* *NFR-02: Bug free system* Appropriate testing techniques must be used when implementing the system to ensure proper functioning.
* *NFR-03: Secure software* 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.