

User Requirements Specification

<Product: Indoor Football Strategy Simulation>

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Revision History

Version	Revision Date	Description of change	Author
0.1	08/09/2018	Document Created	Viet Hai Nguyen
0.2	16/09/2018	Added UML class diagram (Figure 5.1)	Thanh Nguyen
0.3	16/09/2018	Added Functional and Non-functional requirements	Viet Hai Nguyen
0.4	18/09/2018	Added UML class diagram (Figure 5.2)	Thanh Nguyen
0.5	18/9/2018	Added GUI and added structure to document	Alex Lievense
0.6	18/9/2018	Added Use Cases Diagrams and Use Cases	Viet Hai Nguyen
0.7	22/9/2018	Update UML Class Diagram for Iteration 1	Thanh Nguyen
0.8	23/11/2018	Update URS Iteration 2	Viet Hai Nguyen, Thanh Nguyen

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1. Introduction

1.1 Objectives

This is the user requirements specification for the first iteration of the development of the indoor football strategy simulation for use by Mr. Johnson.

1.2 Scope

This User Requirements Specification applies to the Indoor Football Match Simulation. The URS will address the functions the application must be able to perform to successfully obtain primary functionality for the first iteration.

1.3 Product Overview

The project team will develop a simple indoor football match simulation. There will be four field players and one goalkeeper per team. The field players will all move towards the ball, while the goalkeepers only move up and down between the posts of the goal.

1.4 Users

Our target users are managers or coaches of an indoor football team.

1.5 Definitions, acronyms, and abbreviations

URS	User Requirements Specification
M	Must-Have
S	Should Have
C	Could Have
W	Won't Have
Users	Managers/ Coaches
FR	Functional Requirements
NR	Non-functional Requirements
UML	Unified Modeling Language
Squad	Set of players with specific qualities
Formation	Describes the positions of the players on the pitch

2. User Interfaces

2.1 Strategy Management

[Simulation](#) [Strategies](#) [History](#) [Preferences](#)

In this section you can add new strategies, modify existing strategies and delete strategies.

Strategies

☐ 3-1-0

Edit

Delete

☐ 3-0-1

Edit

Delete

☐ 2-2-0

Edit

Delete

☐ 2-1-1

Edit

Delete

☐ 2-0-2

Edit

Delete

☐ 1-2-1

Edit

Delete

☐ Gonna Crush You

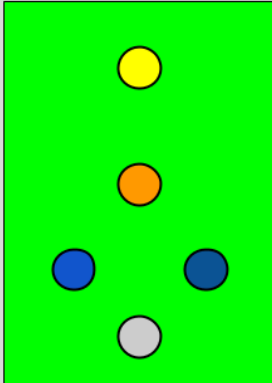
Edit

Delete

Add New Strategy

Remove Selection

Preview Strategy



Team Mentality

☐ Offensive

☐ Defensive

Width

☐ Narrow

☐ Wide

Player Marking

☐ Man Marking

☐ Zonal Marking

Formation

Name

Save Strategy

Discard Changes

2.2 Simulation Input

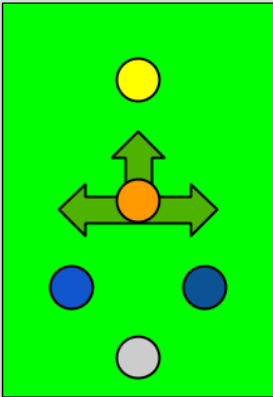
[Simulation](#) [Strategies](#) [History](#) [Preferences](#)

Welcome to the Indoor Football Strategy Simulator. In the fields below you can specify which strategy you want to use for the home team and for the away team. You can see more details about a strategy on the right.

Select Strategies

Home Team	Away Team
<input type="radio"/> 3-1-0	<input type="radio"/> 3-1-0
<input type="radio"/> 3-0-1	<input type="radio"/> 3-0-1
<input type="radio"/> 2-2-0	<input type="radio"/> 2-2-0
<input checked="" type="radio"/> 2-1-1	<input type="radio"/> 2-1-1
<input type="radio"/> 2-0-2	<input type="radio"/> 2-0-2
<input type="radio"/> 1-2-1	<input type="radio"/> 1-2-1
<input type="radio"/> Gonna Crush You	<input checked="" type="radio"/> Gonna Crush You

Preview Strategy



2-1-1 (Default)
Formation: 2-1-1

How many times do you want to run the simulation?

Start Simulation

2.3 Simulation

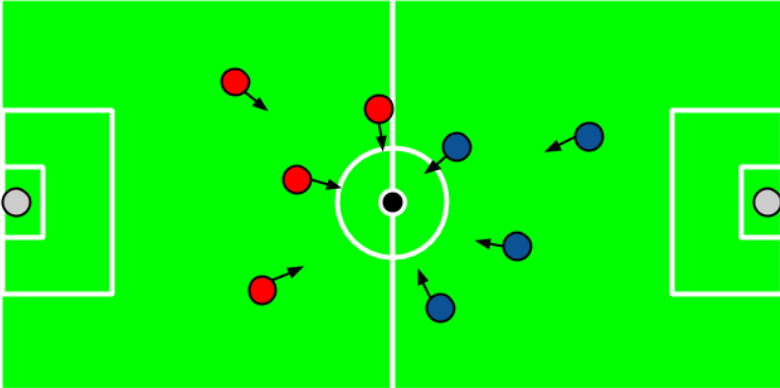
[Simulation](#) [Strategies](#) [History](#) [Preferences](#)

50'

Home Team

1-0

Away Team



Strategy Home Team
2-1-1 (Default)
Formation: 2-1-1

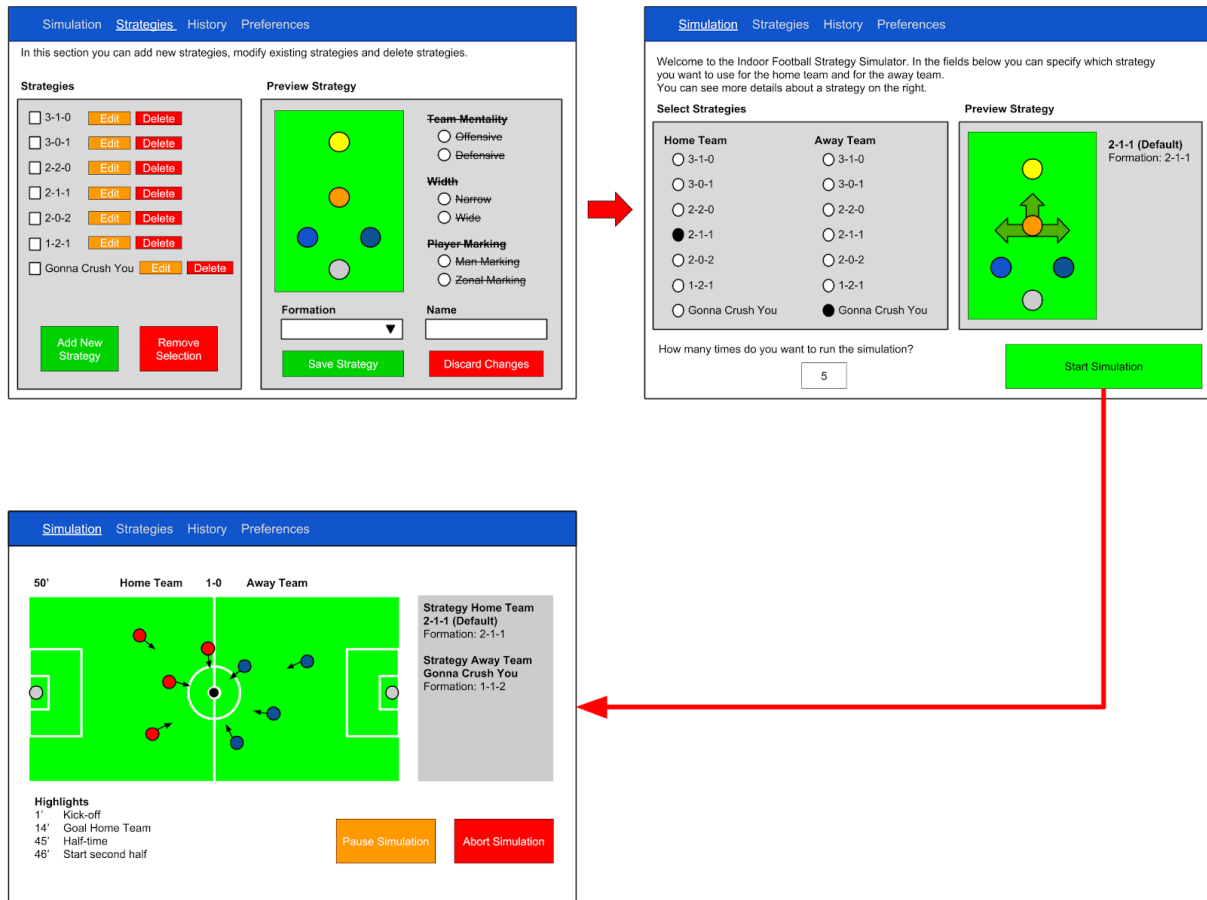
Strategy Away Team
Gonna Crush You
Formation: 1-1-2

Highlights
1' Kick-off
14' Goal Home Team
45' Half-time
46' Start second half

Pause Simulation

Abort Simulation

2.4 Simulation Flow



2.5 Remarks

Note that GUIs for historical results and Preferences are still missing, since these features are not included in the first iteration of the project.

3. Requirements

3.1 Functional Requirements

ID	Requirements	Description	Priority
FR-01	Run simulation	Application must allow users to run simulation based on the selected strategy	M
FR-02	Login system	Application could have a login system	C
FR-04	Adjust the speed of simulation	Application won't allow users to adjust the speed of simulation	W
FR-05	Edit players statistics	Application won't allow users to edit players statistics	W
FR-06	Show players statistics	Application could show players statistics	C
FR-07	Edit strategy during the simulation	Application could allow users to edit strategy during the simulation	C
FR-08	Edit squad	Application won't allow users to edit the squad	W
FR-09	Abort Simulation	Application must allow users to abort simulation	M
FR-10	Pause Simulation	Application must allow users to pause the simulation	M
FR-11	Create new formation	Application must allow users to create new formation	M
FR-12	Delete existing formation	Application must allow users to delete existing formation	M
FR-13	Display a formation	Application must be able to display a selected formation	M
FR-14	Show simulation history	Application should show the history of all previous simulations	S
FR-15	Resume Simulation	Application must allow users to resume simulation after pausing	M

FR-16	Edit existing formation	Application must allow users to edit the existing formation	M
FR-17	Select the default position of a player	Application must allow users to select the default position of a player	M
FR-18	Remove a player from a position	Application must allow users to remove a player from a position	M
FR-19	Export results to PDF and CSV	Application must allow users to export results to PDF and CSV	M

3.2 Non-functional Requirements

ID	Requirements	Description	Priority
NR-01	Time of one match simulation is less than 5 minutes	One match simulation must finish less than 5 minutes	M
NR-02	Multi-users	Application should be used by more than one user	S
NR-03	Responsiveness	Response time for the request of users must be less than 10 seconds	M
NR-04	Reliability	Application must perform consistently without any errors	M
NR-05	Usability	Application should be user-friendly and easy to operate	S
NR-06	Scalability	Application could be easily extended with new features	C

4. Use cases

Name: Run simulation

Goal: System simulates and displays the simulation to user.

Actor: User

Precondition: At least one formation was already created

Main success scenario:

1. System shows all available formations.
2. User selects a strategy for the Home Team
3. User selects a strategy for the Away Team.
4. User starts simulation.
5. System performs the simulation.
6. System displays the output of the simulation.

Exceptions:

1a. No strategy was created

- i. System warns the user and allows him to create a new strategy.
- ii. Back to MSS at step 1.

Postcondition: Output was displayed.

Name: Abort simulation

Goal: System shows output of simulation

Actor: User

Precondition: Simulation is running

Main success scenario:

1. User chooses to abort simulation
2. System shows the messages and allows user to confirm
3. User confirms
4. System stops simulation
5. System displays output

Postcondition: Output was displayed

Name: Pause simulation

Goal: User pauses simulation

Actor: User

Precondition: Simulation is running

Main success scenario:

1. User chooses to pause simulation
2. System pauses simulation

Postcondition: Simulation was paused.

Name: Resume simulation

Goal: User resumes simulation

Actor: User

Precondition: Simulation is pausing

Main success scenario:

1. User chooses to resume simulation
2. System resumes simulation

Postcondition: Simulation was resumed.

Name: Create new strategy

Goal: User creates new strategy

Actor: Users

Precondition:

Main success scenario:

1. User selects Strategy section
2. User selects the formation
3. User inputs a name for the strategy
4. User chooses to save a new strategy
5. System shows the confirmation message
6. User confirms to create a new strategy
7. System saves the strategy
8. System displays the new formation

Postcondition: New formation was saved

Name: Edit existing strategy

Goal: The selected strategy was edited

Actor: Users

Precondition: At least one strategy was created

Main success scenario:

1. User selects Strategy section

2. System shows all strategies
3. User selects a strategy which user wants to edit
4. User chooses to edit the strategy
5.
6. System saves the strategy
7. System displays the updated strategy

Exceptions:

Postcondition: Strategy was edited.

Name: Delete existing strategy

Goal: The selected strategy was deleted

Actor: Users

Precondition: At least one strategy was created

Main success scenario:

1. User selects Strategy section
2. System shows all strategies
3. User selects a strategy which user wants to delete
4. User chooses to delete the selected strategy
5. System shows the confirmation message
6. User confirms to delete the strategy
7. System deleted the strategy

Exceptions:

1a. No strategies was created

- i. System displays the error message
- ii. System shows the main menu

Postcondition: Strategy was deleted