

# **PROJECT-SCOPES TECHNICAL REALISATION**

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# 1 Introduction

## 2 Technology and tools

### 3 Structure of the code

## 4 Game mechanics

### 4.1 Players

### 4.2 Arena

### 4.3 Bonuses

## 5 Graphical User Interface

The Graphical User Interface is fully designed and implemented in Unity game engine. Only standard assets are used, no additional elements are required. All of the implementation is written in C# programming language.

### 5.1 EPIC 1 Specific Information

In EPIC 1 all users are gathered on the same device and all of the user actions are performed with this device's mouse and keyboard, therefore the GUI is single-screen of size 650x475 pixels.

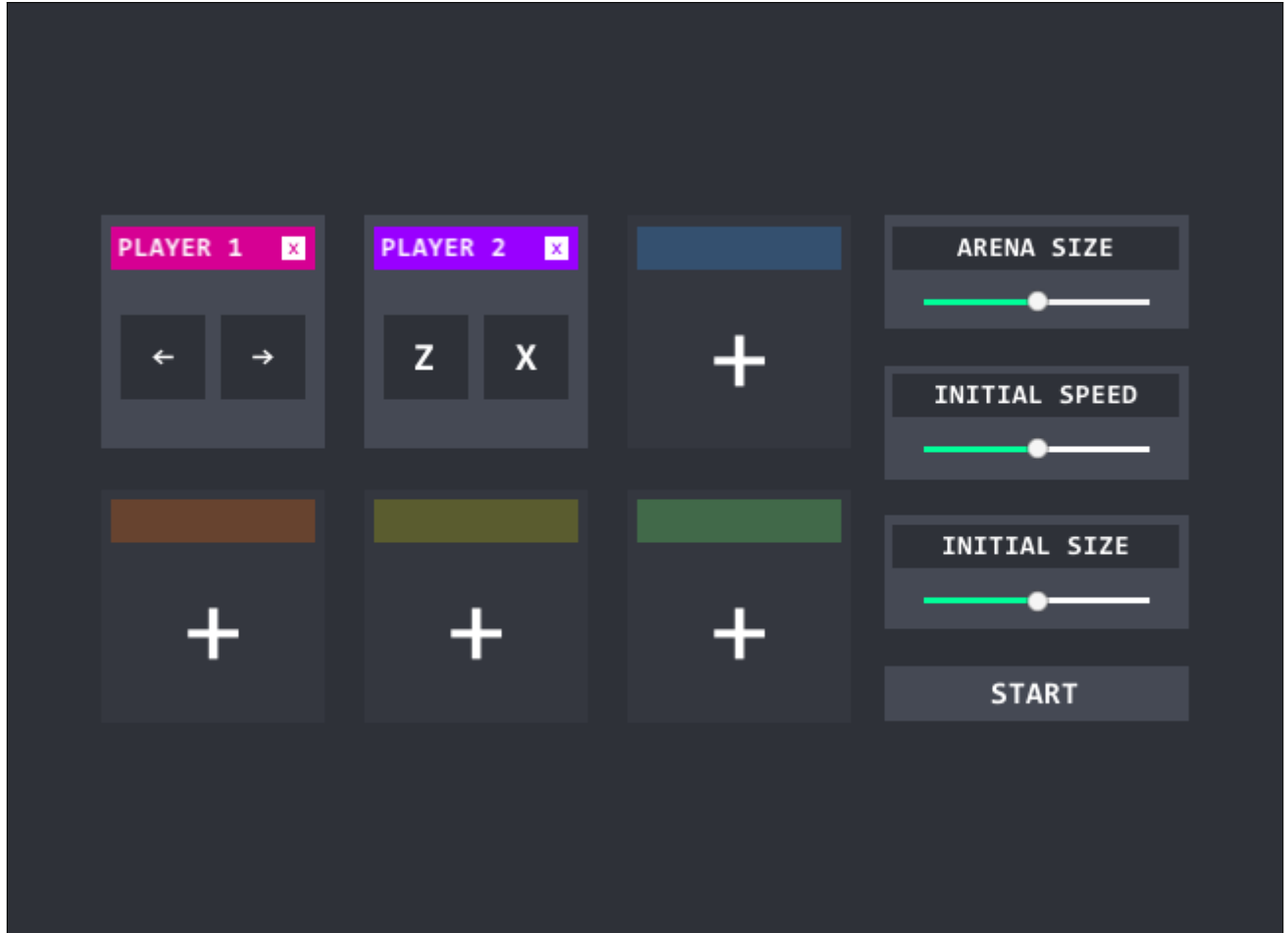


Figure 1: EPIC 1 Graphical User Interface

### 5.2 Palette of colors

The full spectrum of colors that are used in the project consists of 17 different hues.

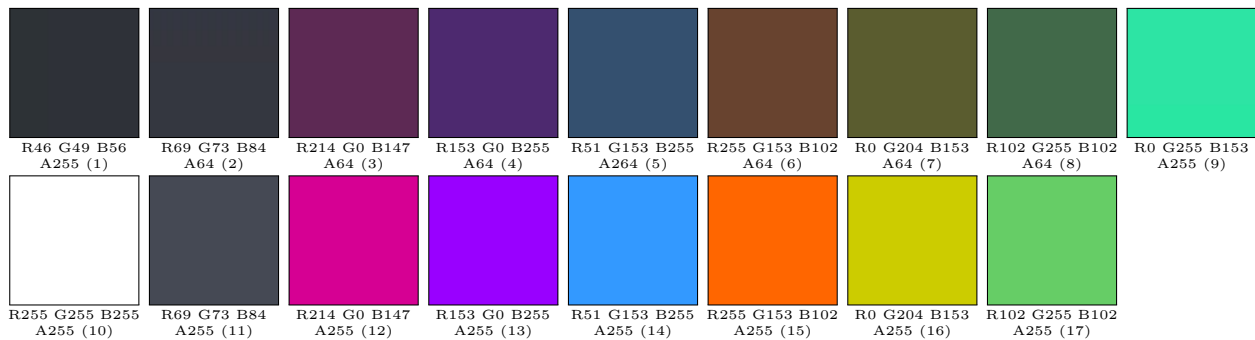


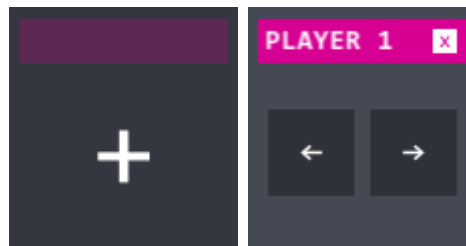
Figure 2: Pallete of colors

## 5.3 Components

The visual part is build with unity UI objects. These objects are built into components that make up the graphical user interface.

### 5.3.1 Player panels

In order to add and/or delete a player two kinds of panels are created.

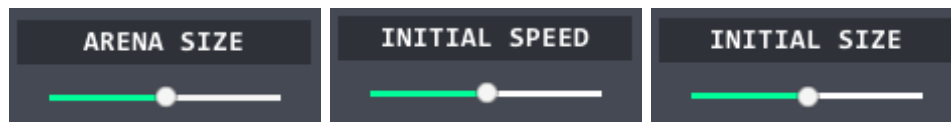


PlayerDisabledPanel   PlayerEnabledPanel

Figure 3: Player panels

### 5.3.2 Initial setting panels

In order to set the initial game arena size and speed and thickness of all players three panels are available.



ArenaSizePanel

InitialSpeedPanel

InitialSizePanel

Figure 4: Initial setting panels

### 5.3.3 Start button

In order to start the game one button is introduced.



StartButton

Figure 5: Start button

## 5.4 Implementation

The implementation of Graphical User Interface is spreaded in four files that handles different functionalities: `GUIManager.cs`, `GUIHelper.cs`, `PlayerInitialData.cs`, `Configurator.cs`. Each file usage can be found in the doxygen documentation.

Each GUI component has its own functionalities.

PlayerDisabledPanel   - Adding player to the game. A user is able to add maximum of 6 players.

PlayerEnabledPanel   - Removing player from the game. A user is able to remove previously added player. There is limitation to minimum 2 players.  
- Setting player color ((12)..(17) shows possible player hues). Each player has unique look.  
- Setting player nickname. The name is limited to 9 character. It can contain only english alphabet letters and digits.



	- Setting player movement keys. Player turns only left and right. Movement keys are unique. Each player's movement keys are unique.
ArenaSizePanel	- Setting size of game area (small: 600x600 pixels, normal: 800x800 pixels and large: 1000x1000 pixels).
InitialSpeedPanel	- Setting initial speed of all players (slow: 1.0 unit, normal: 2.0 units and fast: 4.0 units).
InitialSizePanel	- Setting initial size of all players (thin: 3 pixels, normal: 6 pixels and fat: 12 pixels).
StartButton	- Starting the game.

## 5.5 Sounds

There are no sounds implemented on the GUI yet.

## **6 Tests**

### **6.1 Requirements**

### **6.2 Types**

### **6.3 Report**

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