

3D Snakes and Ladders

3D snakes and Ladders, complete game with Dice Board Game starter v2 package. With this package you can also create your own board games! This game template is fully dynamic and easy to modify.

There you have all scripts to work:

- Board
- PlayerManager
- -
- DiceManager
- Dice
- DiceSide
- DiceManagerEditor
- -
- Player
- PlayerHome
- PlayerGhost
- -
- GameSetting
- PlayerData
- -
- UI_Menu
- UI_Game
- UI_DiceManager
- UI_PlayerManager
- UI_SelfDeactivator
- UI_Timer
- UI_VolumeCheck
- -
- ElementNode
- ElementNodeCreator
- CircleShape
- EllipseShape
- LineShape
- PolygonShape
- RectangleShape
- SquareShape
- triangleShape
- DiamondShape
- ElementNodeEditor
- ElementOptionNodeEditor
- Extensions
- MainMenu
- CircleMaker
- LineMaker
- PolygonMaker

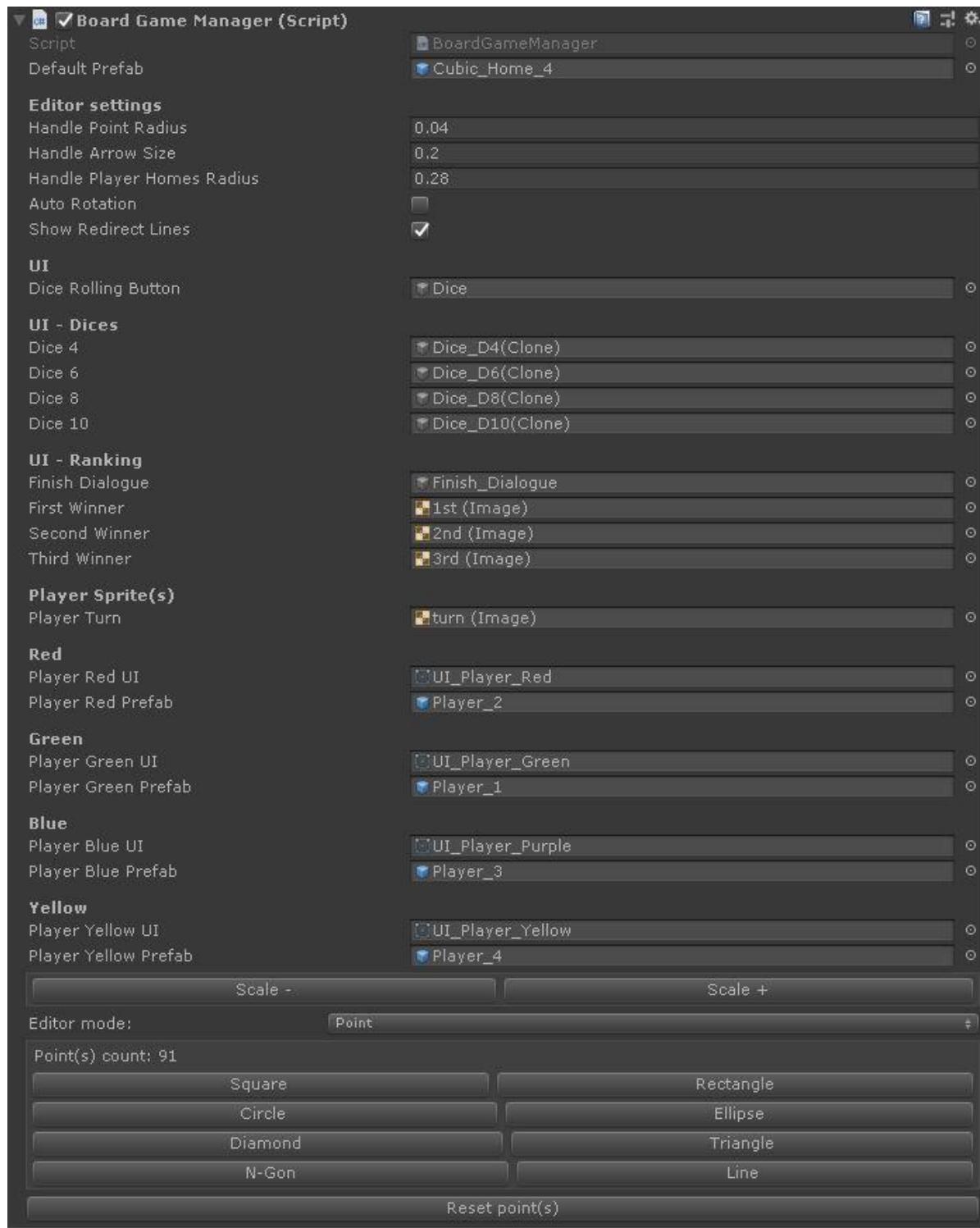
- RectangleMaker
- SquareMaker
- triangleMaker

Basic scripts and their parameters

BoardGameManager

It's the main script and connector between dice(s), player(s), AI(s) and board. It's attach to your project by adding 'Game manager' from menu item. The main function on this script is managing board home(s) and adding player(s) or creating AI system (new feature in v2.1.0). with **left click** on screen, new home will generate. **Ctrl + Right click** on each node to open node editor window or changing their positions and so on.

Here we have some general options and two more detailed options for managing home(s) and player(s). You can change it by changing 'Editor mode' property.



Default prefab Set a default prefab to auto assign prefab mode in create new home

Editor Setting

Handle Radius The radius of points on screen

Handle arrow size The size of arrow that show the game board path

Handle Player Homes The size of player(s) home radius

Radios

Autorotation It manages the prefab rotations automatically

Show redirect lines Show the redirect line from each home that redirect player to another home

UI

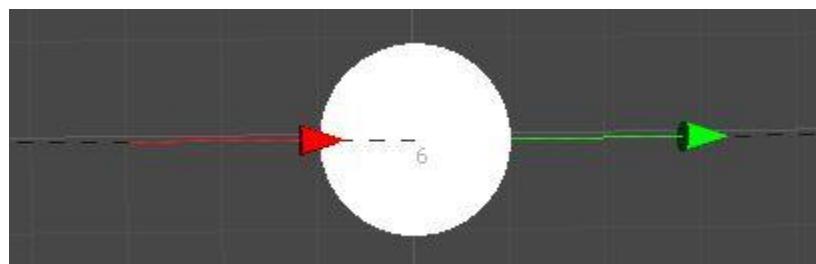
Dice Rolling Bottom	Reference to bottom that on click over, dice will be roll
UI – Dices	
Dice 4	Reference to Dice4 game object
Dice 6	Reference to Dice6 game object
Dice 8	Reference to Dice8 game object
Dice 10	Reference to Dice10 game object
UI – Ranking	
Finish Dialog	Reference to winner's dialog window in end of game
First winner	Reference to first winner image sprite
Second winner	Reference to second winner image sprite
Third winner	Reference to third winner image sprite
Player sprite(s)	
Player turn	Reference to current player image sprite
Player Red UI	Player red UI sprite
Player Red Prefab	Player red prefab game object
Player Green UI	Player green UI sprite
Player Green Prefab	Player green prefab game object
Player Blue UI	Player blue UI sprite
Player Blue Prefab	Player blue prefab game object
Player Yellow UI	Player yellow UI sprite
Player Yellow Prefab	Player yellow prefab game object
Scale -	Decrease home(s) distance from center point by 0.05%
Scale +	Increase home(s) distance from center point by 0.05%

Note: you can set any prefab. The setting window will open when clicking on shape buttons.

In ‘Editor mode’ set to ‘Point’:

Point(s) Count	The count on board home(s)
Square	Create a square shape for board home (s)
Rectangle	Create a rectangle shape for board home (s)
Circle	Create a circle shape for board home (s)
Ellipse	Create a ellipse shape for board home (s)
Diamond	Create a diamond shape for board home (s)
Triangle	Create a triangle shape for board home (s)
N-Gon	Create a N-Gon shape for board home (s)
Line	Create a Line shape for board home (s)
Reset point(s)	Remove all points and board home(s)

The simple home without any prefab look like the below image. Red arrow incoming path from other home and green arrow outgoing path from current home.



Note: indexes start from zero.

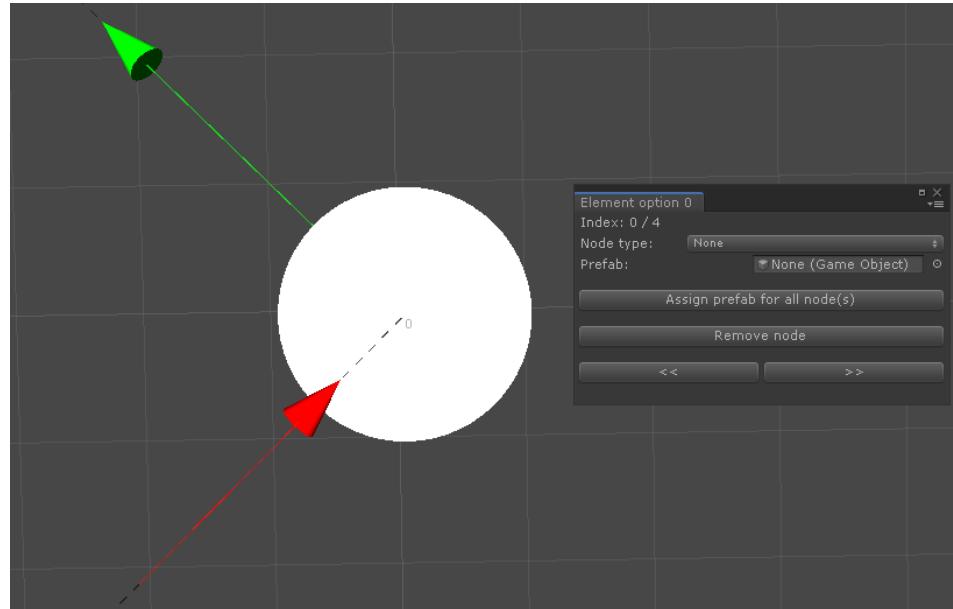
Note: each home node can support multi incoming path and multi outgoing path. (new feature in v2.0.0)

Element option (node editor) will pop up with **Ctrl + RMB** on each node.

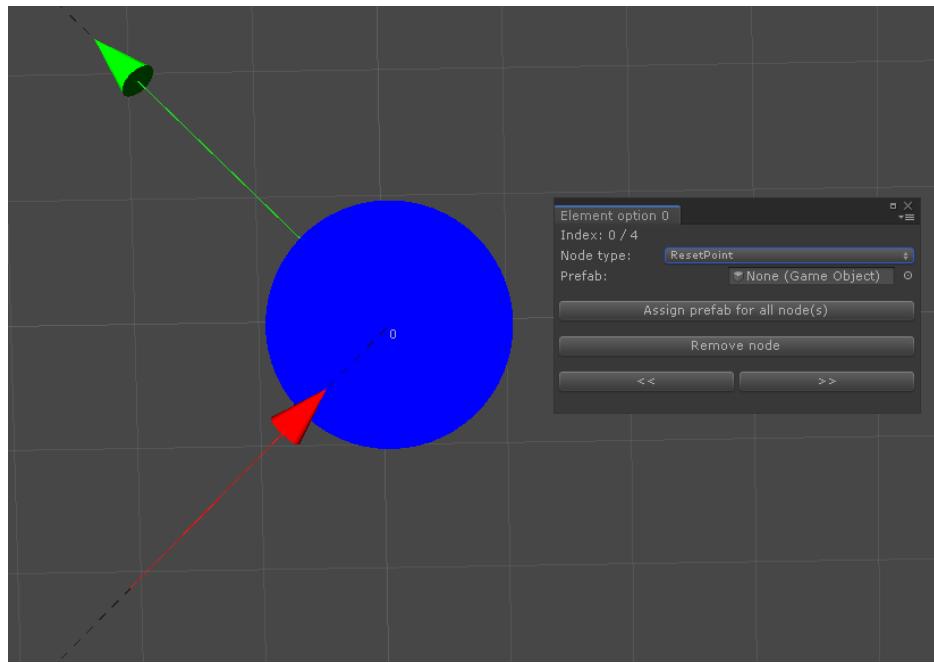
Index / count	Index of selected board home / count of all board home(s)
Redirect index	It means when player sit in this home and have no more moves then player auto redirect to chosen index board home. -1 means no redirect
Node type	Type of selected node
Prefab	The home board prefab
Assign prefab for all node(s)	Assign current prefab for all other board home(s)
Remove node	Remove current board home
<<	Go to previse board home
>>	Go to next board home

Note types:

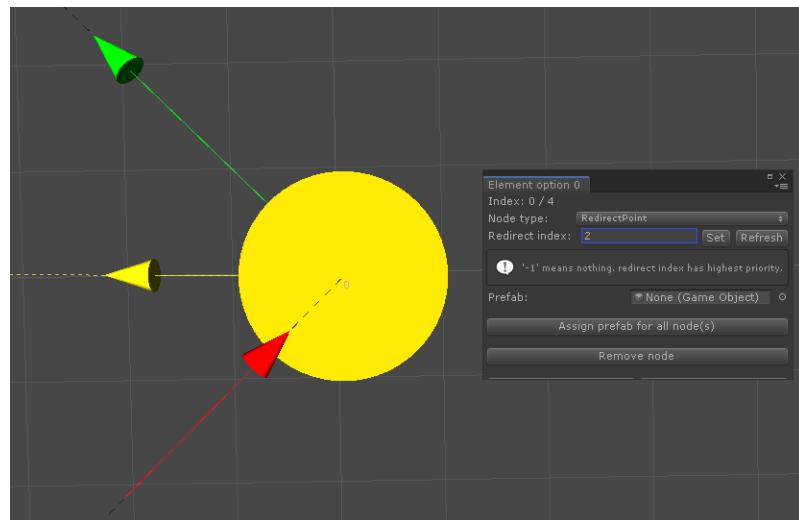
- None: regular node



- ResetPoint: Game piece will redirect to its start game position



- Redirect



Index / count

Index of selected board home / count of all board home(s)

Redirect index

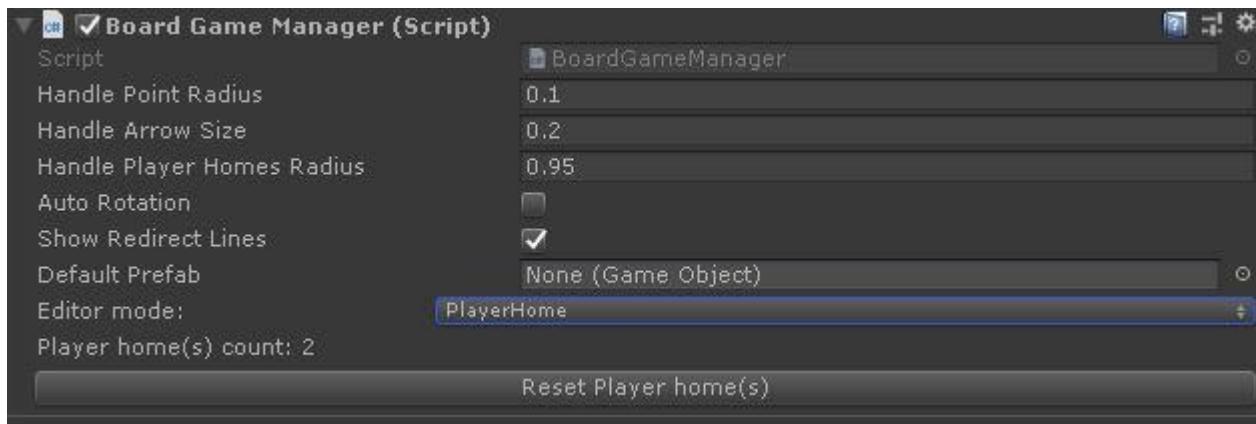
It means when player sit in this home and have no more moves then player auto redirect to chosen index board home. -1 means no redirect

Note: After typing the redirect index, press 'Set' button, because the design algorithm removes loops and bugs then set the value.

Note: the redirect index shows with yellow arrow.

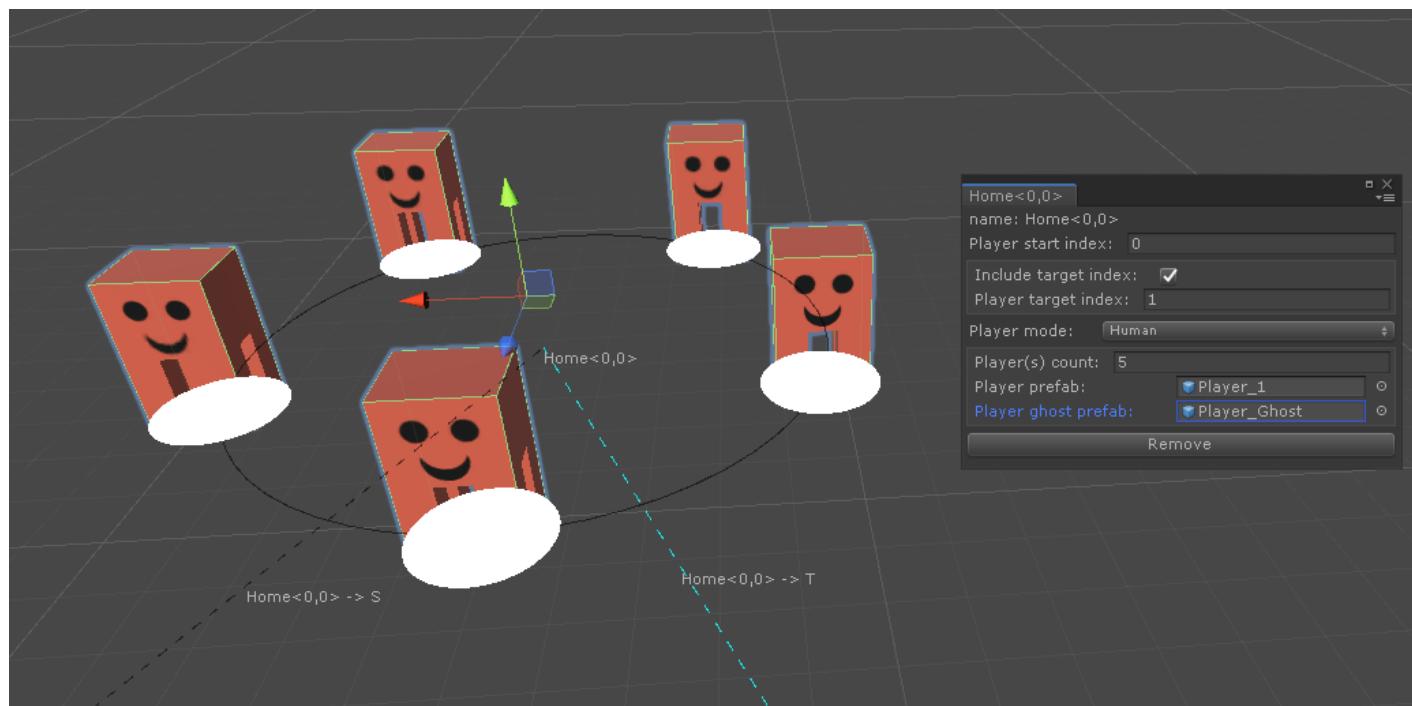
In 'Editor mode' set to '**PlayerHome**':

Player home is the place than all game pieces from each unique player will be managed.



Player home(s) count The count of all player home
 Reset Player home(s) Clear all player home(s)

Element option (node editor) will pop up with **Ctrl + RMB** on each node.



Name	The player home name
Player start index	The point index that player home redirected new piece s to that position
Include target index	Check it true if these players logic cycle has target home
Player target index	The point index that players target home is
Player mode	In human mode the human is playing and in CPU mode the AI playing
Players(s) count	The count of pieces of that player can be have
Player prefab	The piece s prefab
Player ghost prefab	The ghost prefab

Note: In editor player homes be labeled like Home<i,j> that 'i' is player home index and 'j' is point index that player home redirected new pieces to that position.

Note: The Player prefab and ghost prefab can be changed for each deferent piece.

Board

The main function of this script is managing the dice(s) over board. All dices will detect each other automatically (if you have more than 1 dice in your game).



Collision object tags Dices have physics effect over any game object with this tag

Rolling threshold If dice rolling is more than the threshold, the system alarms programmer by log warning.

Board functions:

RollDices(): rolling dice(s).

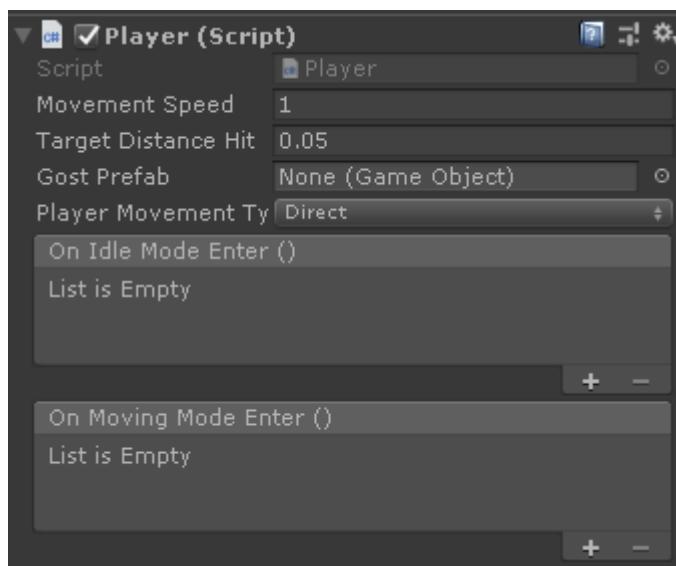
ResetDices(): reset dice(s) positions and values

getDicesValues(): return all dice(s) values as array

onRollingOverFlow(): override able function for managing over flow rolling

PlayerManager

It's the player script that manages each player.



Start index

The board home index for starting the game

Prefab

The player prefab

Movement speed

The speed of movement

Target distance hit

The threshold of distance that player hit the target

Player Movement type

The type of player moving between board home(s)

On Idle Mode Enter

The unity event when player is entering to idle mode

On Moving Mode Enter

The unity event when player is entering to moving mode

Note: if player movement speed is set to high value and target distance hit is very low, the player will never get the target. It's not bug, be careful.

Player Functions:

hitIndex: the array of board home indexes that player hit them in each roll

currentPositionIndex: the position of current board home index

diceValues: return the array of dice values for this player

positionIndex: the data store of board home indexes

GOTO: make player to move its current position to new home position

GOTO_Immediately: force player to move to new home position

GOTO_CalculatedIndex: get the home nodes and create movement path from them

CalculatePositionIndex: calculated hitIndex value and new position index.

DiceManager

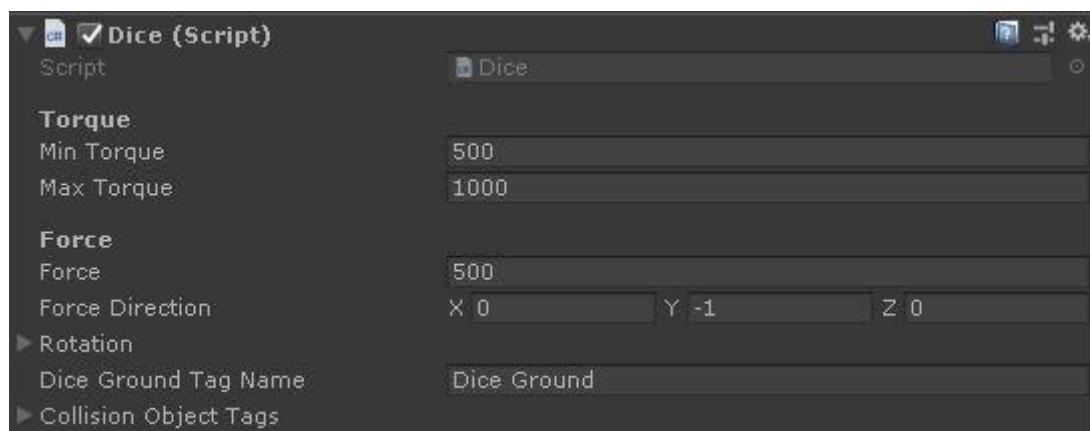
This script will manage dice(s). waiting for rolling dices be over (finish) then gather all dice values and return them to BoardGameManager script.

DiceManagerEditor

The editor for DiceManager.

Dice

This script manages the dice by managing the dice side(s) and timing for rolling dice or gathering the correct dice side value.



Torque

Min Torque The minimum value of dice torque

Max Torque The maximum value of dice torque

Force The directional force in rolling time

Force direction The fore direction in rolling time

Rotation	The rotation in rolling time
Dice Ground tag name	The ground tag name the dice side will stay on that and create dice value.
Collision object tags	Each game object with this tags have physical effect on dice(s)

DiceSide

Each dice includes some sides. This script will handle all sides. If any side touch the ground and stay on ground, report the position to Dice script.

Player

The Player manager is inheritance from this script.

PlayerHome

The Player home manager. Its store some informations.

PlayerGhost

The Player ghost manager.

GameSetting

This class is a data structure for load and save game data variables. This data include dice mode and player(s) status for begin the game.

PlayerData

This class is a data structure for each player. It includes each player mode such as human mode or CPU mode, player sprite and color. And so on...

UI_Menu

This class is a data structure for managing the main menu.

Some of this class functions:

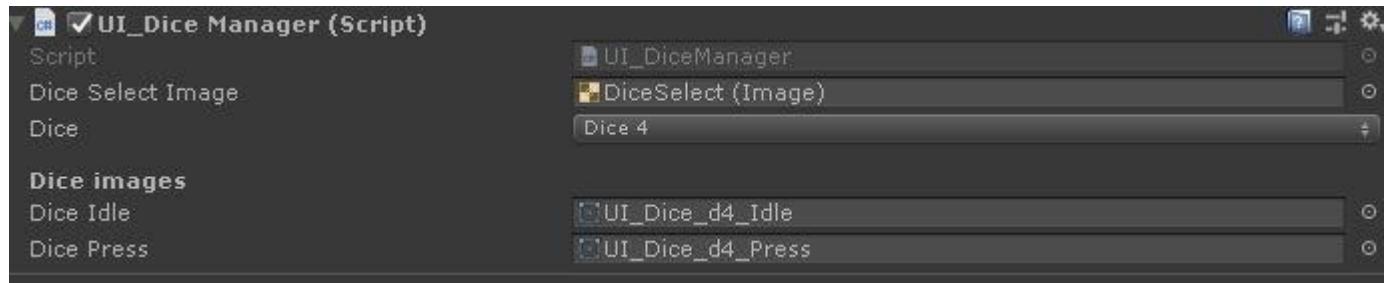
SetLevel(<code>int id</code>)	Store the id of chosen level from user
---------------------------------	--

UI_Game

This class is managing some functions like game pause, game restarting and so on...

UI_DiceManager

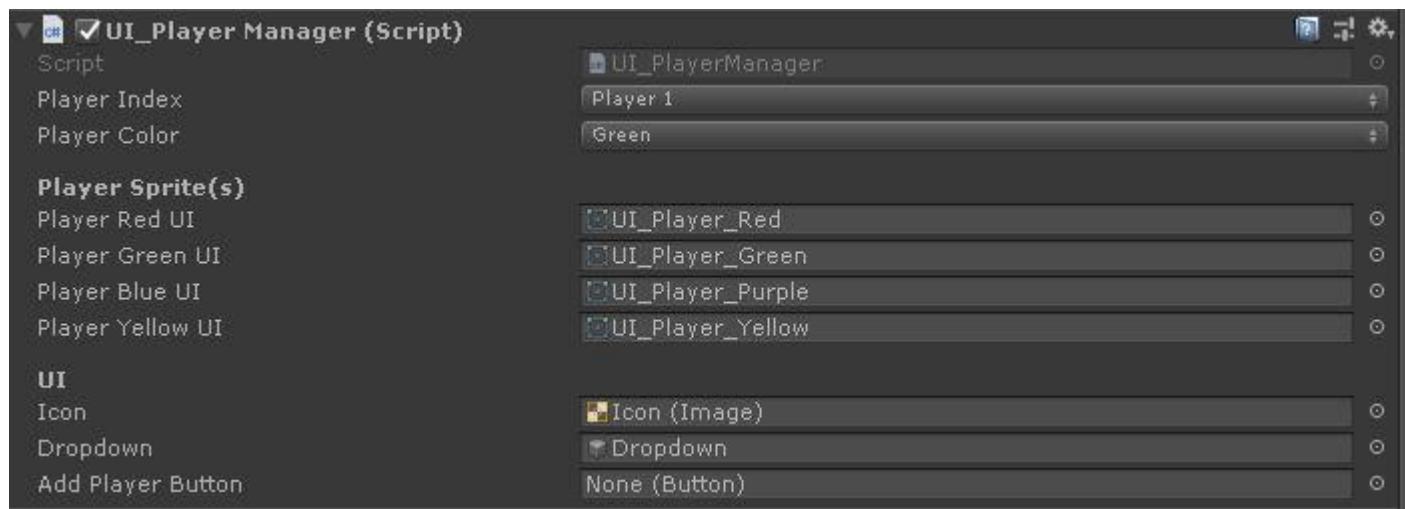
This class is a data structure for managing each dice for chosen. It attached to any button and after click saving the chosen dice in game setting.



Dice select image	The image that if this dice selected, change this image to its sprite image
Dice	Select the dice mode. This modes are dice4, dice6, dice8 and dice10
Dice idle	The idle dice sprite
Dice press	The pressed dice sprite

UI_PlayerManager

This class is a data structure for managing each player data. It attached to any button and after click saving the player data by using GameSetting class.



Player Index	Choose the index of current player. This game supported player count between one and four
Player color	Select player color. This colors are red, green, blue and yellow
Player sprite(s)	
Player Red UI	Player red UI sprite
Player Green UI	Player green UI sprite
Player Blue UI	Player blue UI sprite
Player Yellow UI	Player yellow UI sprite
UI	
Icon	The player icon image
Dropdown	The dropdown for select player mode in human mode or CPU
Add player button	The player add button – player index 1 don't need this option

UI_SelfDeactivator

This class is deactivator class for each game object.

UI_Timer

This class is managing the time.

UI_VolumeCheck

This class is managing the volume.

ElementNode

This script stores basic board home data.

ElementNodeCreator

The BoardGameManager is inheritance from this script.

ElementOptionNodeEditor

The editor for ElementNode board home script.

LineShape

The editor for handling the pattern of board home(s) as line shape.

CircleShape

The editor for handling the pattern of board home(s) as circle shape.

SquareShape

The editor for handling the pattern of board home(s) as square shape.

RectangleShape

The editor for handling the pattern of board home(s) as rectangle shape.

EllipseShape

The editor for handling the pattern of board home(s) as ellipse shape.

DiamondShape

The editor for handling the pattern of board home(s) as diamond shape.

TriangleShape

The editor for handling the pattern of board home(s) as triangle shape.

PolygonShape

The editor for handling the pattern of board home(s) as N-Gon shape.

Extensions

The extensions functions for mange other scripts.

MainMenu

The main menu item functions for mange other scripts.

LineMaker

The script include function to create line.

CircleMaker

The script include function to create circle.

SquareMaker

The script include function to create square.

RectangleMaker

The script include function to create rectangle.

PolygonMaker

The script include function to create N-Gon.

EllipseMaker

The script include function to create ellipse.

DiamondMaker

The script include function to create diamond.