

Unrealistic Arts

Color Ball Sort Puzzle – Starter kit

User Guide

Version: 1.0

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Introduction

This system allows you to create a quick, nice and functional color ball sort puzzle game. You have game manager to create a puzzle in a simple way. In addition, players can manage ball baskets in real-time. It supports undo, restart, chaos color maker etc. Just enjoy it

Scripts list

There you have all scripts to work.

Table 1 - Main scripts

| Main Scripts | | |
|----------------------|-----------------|-------------------------------|
| BSPGameManager | BSPBasket | BSPBall |
| BSPBasketUI | BSPBallUI | |
| Other Scripts | | |
| Extensions | Globals | EditorTools |
| TextWindow | StepData | BSPGameStates |
| LimitedUnlimitedMode | ChaosData | ChaosMaker |
| BSPMenu | BSPBasketState | BSPBasketTerminationCondition |
| BSPBallData | BSPBallSettings | BSPBallState |
| Editors | | |
| BSPGameManagerEditor | BSPBasketEditor | BSPBasketEditorWindow |
| BSPBasketUIEditor | BSPBallEditor | |

Note:

You don't have to know each script or programming. This list is just for awareness.

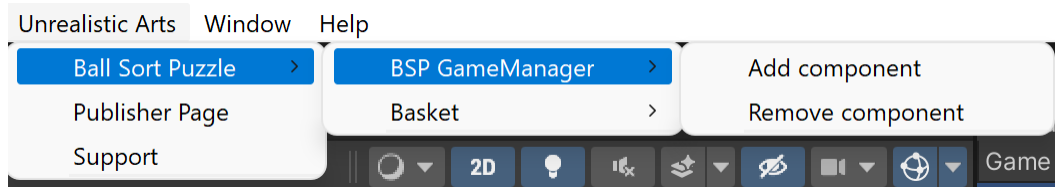
How to use menu?

Here you can find explanation for menu items although in next pages we explained them with more details.

BSP Game Manager

In “BSP Game Manager” item you can create or add (if any object selected) the main script to handle the game, or remove that component.

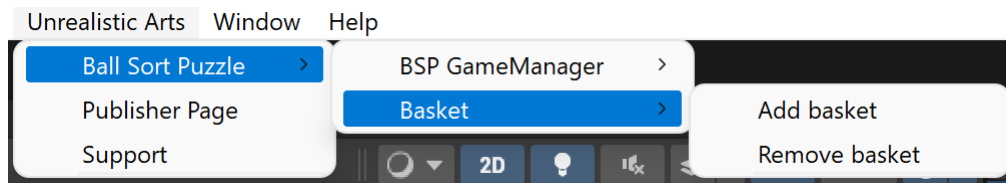
Figure 1 - BSP Game Manager



Basket

In “Basket” item you can Add or remove basket in the game scene. You can manage this option from BSP Game Manager additional options.

Figure 2 - Basket



Basic Scripts and their parameters

BSPGameManager.cs

It's the main script to handle the game. Just one game manager can be created.

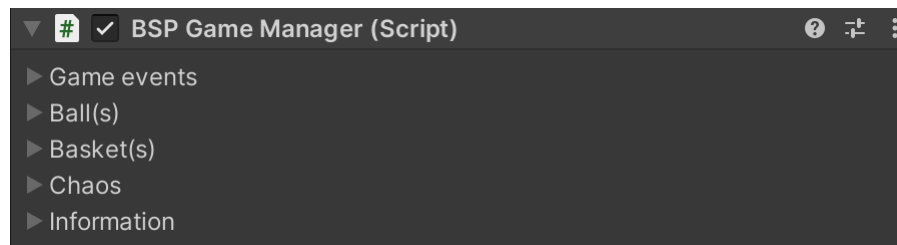
Path: Ball Sort Puzzle kit\Scripts\BSP Kit\BSPGameManager\BSPGameManager.cs

Here we have some general options. Each section has its own variables.

Table 2 - BSP Game Manager (General sections)

| Name | Description |
|-------------|-----------------------------|
| Game events | Game events |
| Ball(s) | Ball options |
| Basket(s) | Basket options |
| Chaos | Chaos options |
| Information | Additional game information |

Figure 3 - BSP Game Manager (General sections)



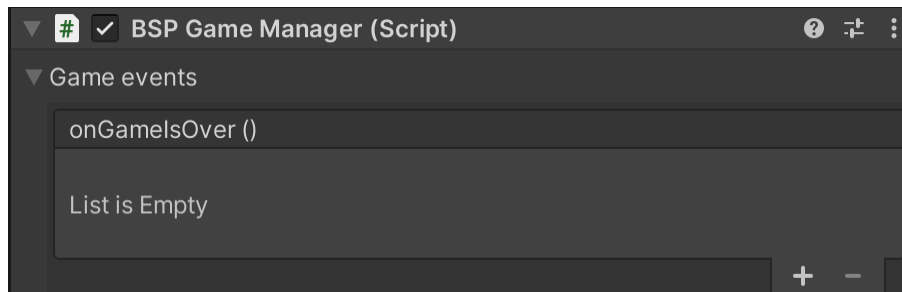
Game events

Here we have game events variables.

Table 3 - BSP Game Manager (Game events)

| Name | Description |
|-------------------|--|
| onGameOver | This event is invoking when the game over conditions are equals true |

Figure 4 - BSP Game manager (onGemelsOver)



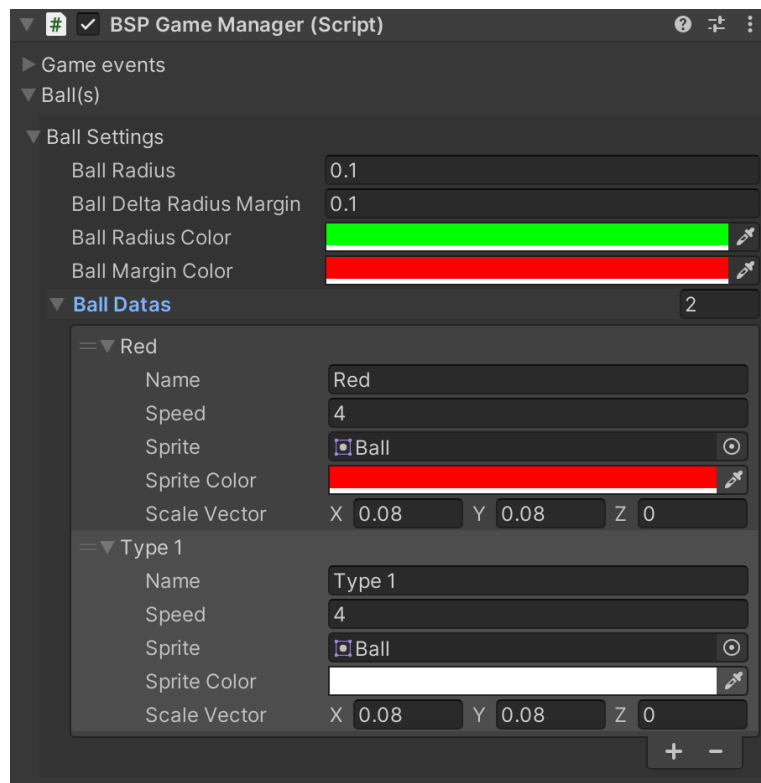
Ball(s)

Here we have Balls variables.

Table 4 - BSP Game Manager (Balls)

| Name | Description |
|---------------------------------|--|
| Ball radius | Ball radius |
| Ball delta radius margin | Extra radius size for ball margin |
| Ball radius color | Color of ball area |
| Ball margin color | Color of margin area |
| Ball datas | List of each ball data |
| -Name | Name of each data. It can be use for selection each ball data from drop down list. |
| -Speed | Ball movement speed |
| -Sprite | Ball sprite |
| -Sprite color | Ball sprite color |
| -Scale vector | Ball sprite scale vector |

Figure 5 – BSP Game Manager (Balls)



Note:

This system using the logic objects like balls, baskets and etc. All events are calculated in logic way using mathematic, that can be improve game speed and size.

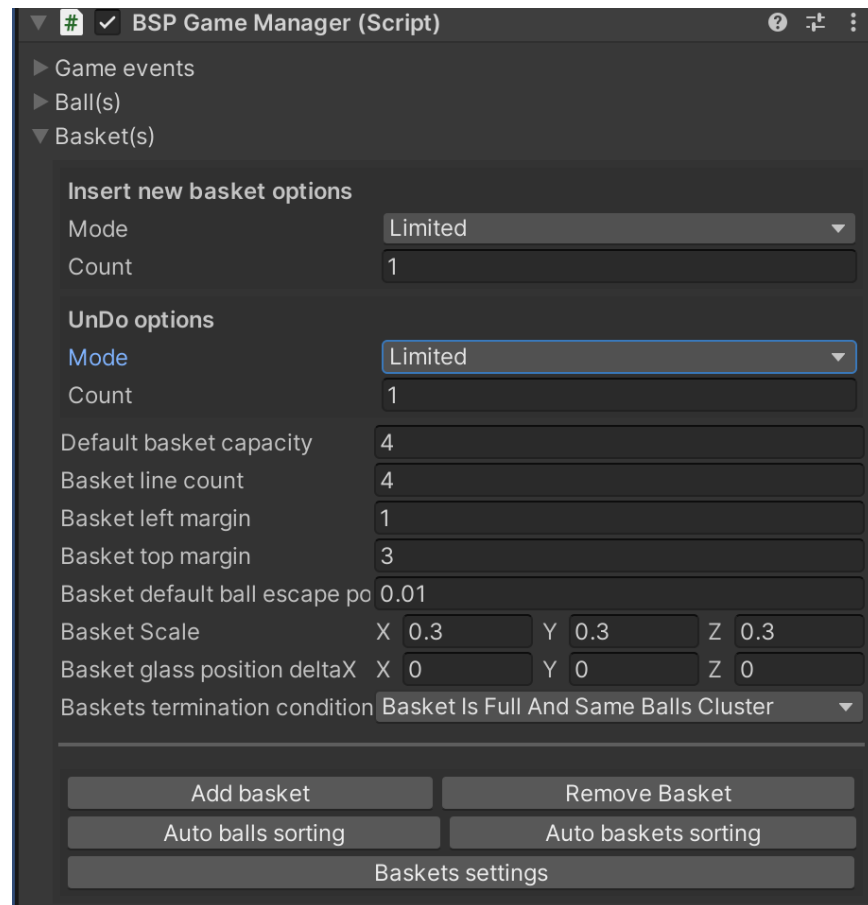
Basket

Here we have basket variables.

Table 5 - BSP Game Manager (Basket)

| Name | Description |
|--|---|
| Insert new basket options | This option is for real time basket inserting in game scene |
| -Mode | Limited or unlimited mode |
| -Count | The new basket insert count. It can be zero for limited and no basket or infinity for unlimited mode. |
| UnDo options | Undo options |
| -Mode | Limited or unlimited mode |
| -Count | The undo steps count. It can be zero for limited and no step or infinity for unlimited mode. |
| Default basket capacity | Default capacity for each new basket |
| Basket left margin | Margin of left basket |
| Basket top margin | Margin of top basket |
| Basket default ball escape position | Default ball escape from basket to Other basket |
| Basket scale | Basket sprite scale |
| Basket glass position delta-X | Difference of logic basket and it's sprite |
| Basket termination condition | Game over condition in each basket |
| Buttons | |
| Add basket | Add new basket |
| Remove basket | Remove the last basket |
| Auto ball sorting | Get each ball in its correct position |
| Auto baskets sorting | Get each basket in its correct position |
| Basket's settings | Open new window for each basket options |

Figure 6 - BSP Game manager (Basket)



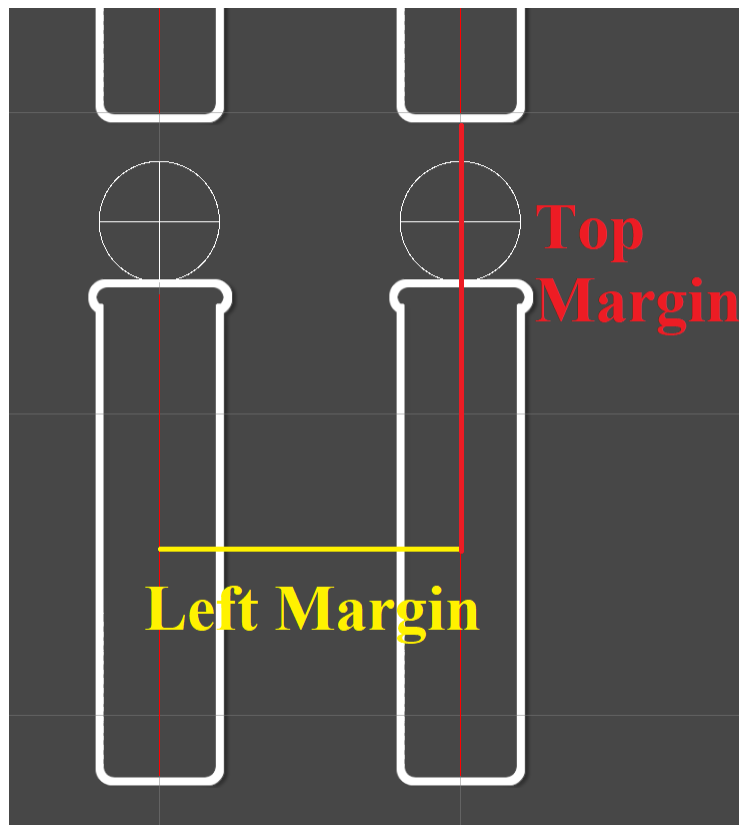
In basket termination condition we have these options:

- Basket is full and same balls cluster
when basket is full or empty. In full baskets, all balls must be same
- Same balls cluster
When basket is empty or all balls must be same. In this method, the full is not a condition.
- Basket is empty
When the basket is empty.
- Basket default condition
In this method, each basket can have its own condition.

Note:

If there is no basket in game scene, the "Basket settings" button is not displayed.

Figure 7 - Basket left and top margins



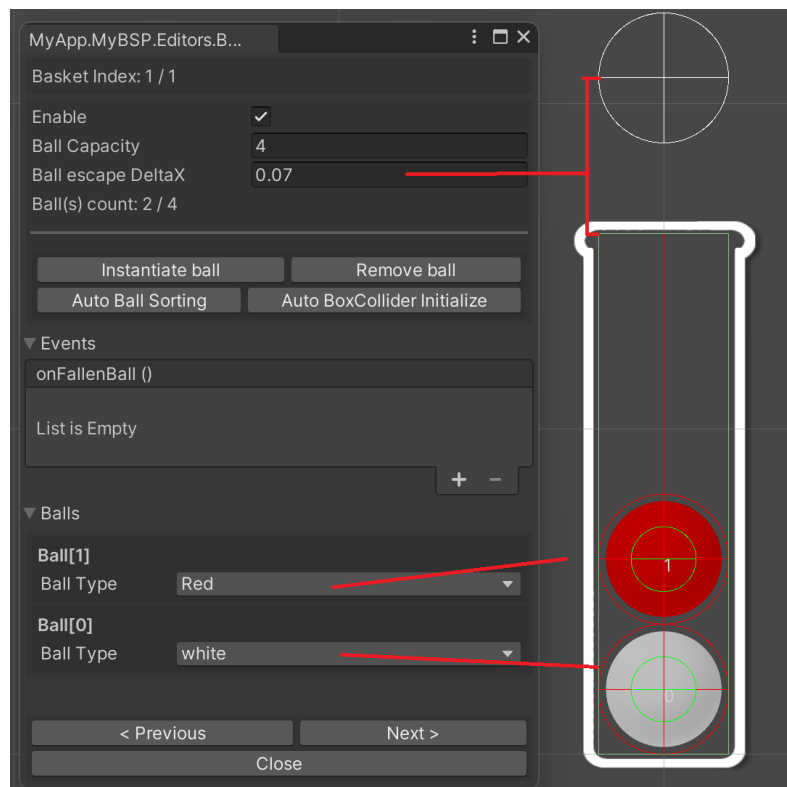
Basket Setting button

After “Baskets Settings” pressed, the baskets window will be shown.

Table 6 - Basket`s setting window

| Name | Description |
|-------------------------------------|---|
| Basket Index | Basket number of all baskets in game scene |
| Enable | Make basket enable or disable |
| Ball capacity | Basket capacity |
| Ball escape delta-X | Difference of logic basket and it`s sprite |
| Ball(s) count | The count of ball(s) in this basket |
| Events | Basket events |
| Balls | Stack of basket`s ball(s) |
| Buttons | |
| Instantiate ball | Add new ball to basket |
| Remove ball | Remove top ball |
| Auto ball sorting | Get each ball in its correct position |
| Auto box collider initialize | Initialize box collider and set it`s position |
| Previous | Previous basket setting |
| Next | Next basket setting |
| Close | Close |

Figure 8 - Basket`s setting window



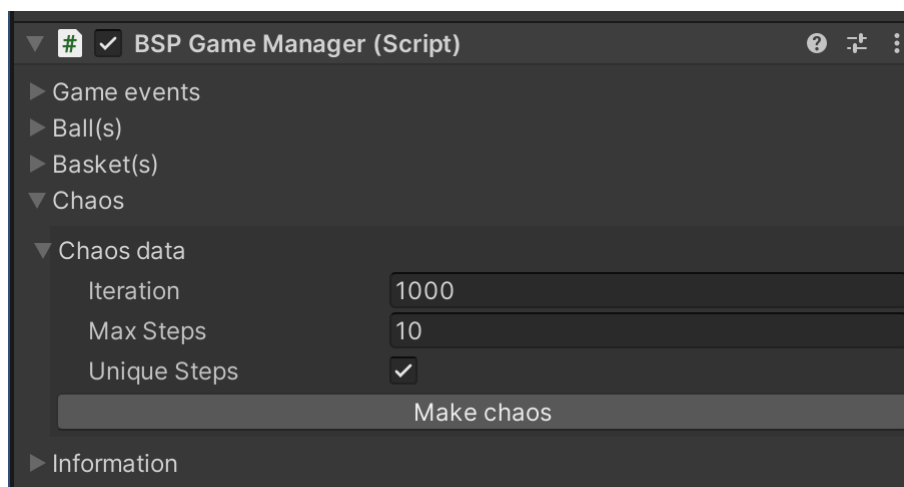
Chaos

Here we have chaos variables.

Table 7 - BSP Game Manager (Chaos)

| Name | Description |
|---------------------|--|
| Iteration | The maximum chaos iteration number |
| Max steps | The maximum steps that balls can be moving |
| Unique steps | Allow to have unique step in chaos |
| Buttons | |
| Make chaos | Create new stage design from solution |

Figure 9 - BSP Game Manager (Chaos)



This option will be design new stage from final solution. It means first design the solution and then make chaos for player.

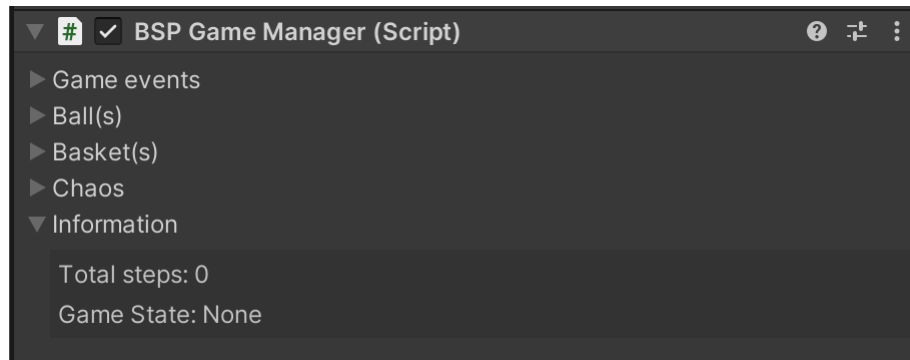
Information

Here we have information variables.

Table 8 - BSP Game Manager (Information)

| Name | Description |
|--------------------|---------------------------|
| Total steps | Total player steps number |
| Game state | Game state |

Figure 10 - BSP Game Manager (Information)



Game states

Here we have these game states:

- None
- On risen ball
- Risen ball complete
- On fallen ball
- Fallen ball complete
- On balls relocation
- Balls relocation complete

Programming and functions

In this class we have some useful functions for programmers that can handle the game or make some changes.

Table 9 - BSP Game Manager Functions

| Name | Description |
|---|---|
| BSPGameManager node; var basket = node[index]; | Return the basket with index. |
| RestartGame() | Restart game scene |
| InsertNewBasket(int count = 1) | Insert the new baskets. Input is number of new baskets. It returns true if it's possible. |
| lastBasketIndex | Return last basket index. |
| steps_Count() | Return total steps count |
| Undo() | Undo last step |
| bSpBasketLineSorting() | Sorting all baskets in its lines. |
| getBasket(int index) | Return the basket with index. |
| bspBasketsCount() | Return all basket count. |
| GamelsOver() | Check the game state and return true if game is over. |
| GameState | Return current game state. |

BSPBasket.cs

This script handles the baskets.

Path: Ball Sort Puzzle kit\Scripts\BSP Kit\BSPBasket\BSPBasket.cs

The default basket prefab can be found in this path:

Path: Ball Sort Puzzle kit\Resources\Prefabs\BSPBaskets\BSPBasket.prefab

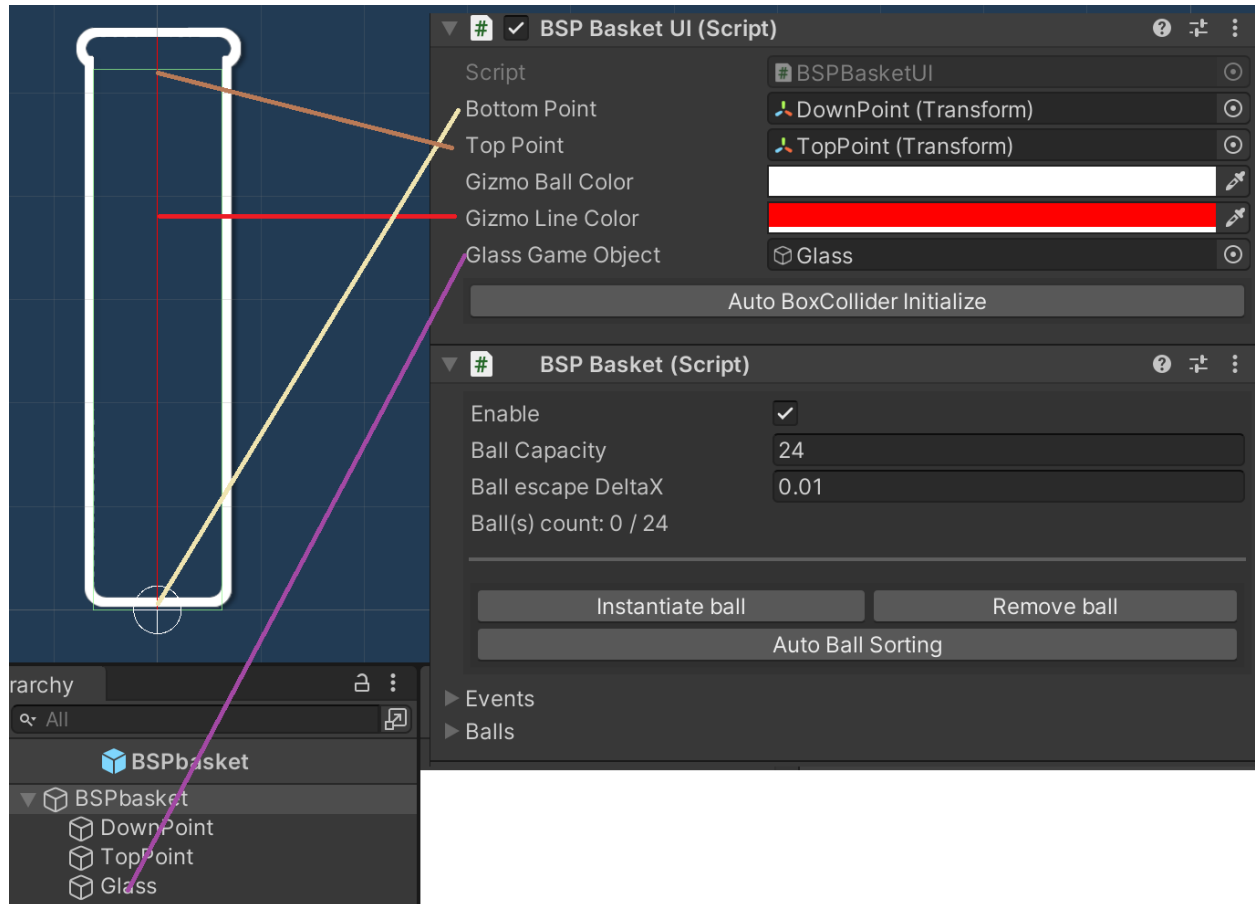
Here we have some general options. Each section has its own variables.

Table 10 - BSPBasket (Sections)

| Name | Description |
|-----------------------------|--|
| BSP Basket UI | User Interface options |
| -Bottom point | Basket bottom position |
| -Top point | Basket top position |
| -Gizmo ball color | Logic ball color |
| -Gizmo line color | Logic basket (line between bottom position and top position) color |
| -Glass game object | Basket shape game object |
| BSP Basket | Logic basket options |
| -Enable | Make basket enable or disable |
| -Ball capacity | Basket capacity |
| -Ball escape delta-X | Difference of logic basket and it's sprite |
| -Ball(s) count | The count of ball(s) in this basket |

| | |
|-------------------------------------|---|
| -Events | Basket events |
| -Balls | Stack of basket's ball(s) |
| Buttons | |
| Instantiate ball | Add new ball to basket |
| Remove ball | Remove top ball |
| Auto ball sorting | Get each ball in its correct position |
| Auto box collider initialize | Initialize box collider and set it's position |

Figure 11 - Logic basket (sections)



Programming and functions

In this class we have some useful functions for programmers that can handle the game or make some changes.

Table 11 - BSP Basket functions

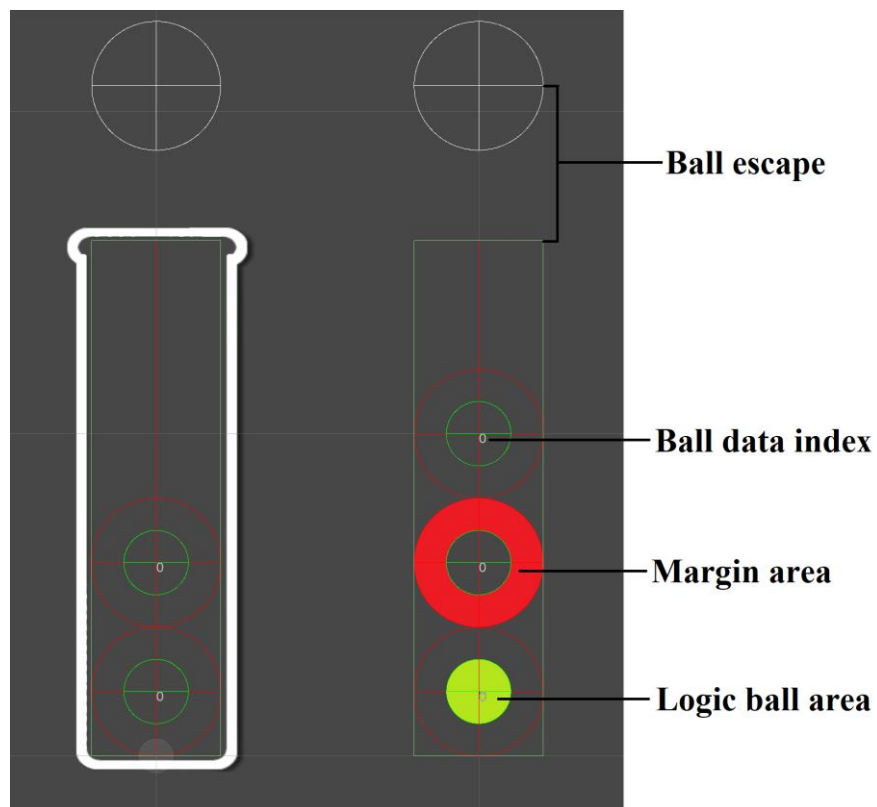
| Name | Description |
|--|---|
| isEnabled | Make basket enable or disable |
| SetBallEscapePositionDeltaX(float dx) | Set ball escape distance from top of basket |
| isBusy() | Return true if basket is busy |
| Vector3 Position | Get or set basket position |
| AutoBallSorting() | Sorting all basket's balls |
| Vector3[] GetBallsPositions() | Return the array of all balls positions |

BSPBall.cs

This script handles the balls.

Path: Ball Sort Puzzle kit\Scripts\BSP Kit\BSPBall\BSPBall.cs

Figure 12 - BSPball (Concept)



Online help

Watch Demo and setup:

Demo: <https://www.youtube.com/watch?v=aFrVm-H2JSs>

Setup: <https://www.youtube.com/watch?v=ekRbe9GJhbs>

Contact us

You find bug? Or need help? Or want to improve this code?

If you need any further assistance, please contact us. Thank you.

unrealisticarts@gmail.com