Match 3 Creator

Requirements:

- Camera MUST be in **Orthographic** Projection.
- The code uses the DOTween (HOTween v2) tween service. https://assetstore.unity.com/packages/tools/animation/dotween-hotween-v2-27676

Add the namespace to access features:

```
using Match3Engine;
```

Features:

Free Version:

GridSettings. – Gets General Settings of the Grid

int Rows Returns the Total Amount of Rows (Read Only) To Set Use "BuildGrid.Create"
int Columns Returns the Total Amount of Columns (Read Only) To Set Use "BuildGrid.Create"
GameObject GridContainer Returns the Parent Object of Grid Elements(Read Only) To Set Use "BuildGrid.Create"
Vector2 SpaceSize Returns size of the Spaces(Read Only) To Set Use "BuildGrid.Create"
Vector3 SpaceLocationPos(int Row, int Column) Returns the Local Position of Space(Read Only)[Parent: GridContainer] To Set Use "BuildGrid.Create"
Vector3[] SpaceBounds(int Row, int Column) Returns the Local Position of Space TopLeft[0] and BottomRight[1](Read Only)[Parent: GridContainer]
Vector2Int MouseOverSpacePos() Returns the Space Grid position Mouse is Over
Vector2Int MousePressedSpacePos() Returns the Space Grid position Mouse Pressed down on (Single Frame)
Vector2Int MouseReleasedSpacePos() Returns the Space Grid position Mouse Released on (Single Frame)
string MouseDirectionFromSpacePos(int Row, int Column) Returns the Direction("Up","Down","Left","Right") Based on Space Position to Mouse Position Point Vector
Vector2Int SpaceNextToPos(int Row, int Column, int MoveDown, int MoveUp, int MoveLeft, int MoveRight) Returns a Space Position Given the Distance From Another Space Position

BuildGrid. – Creates the Match 3 Grid

void Create(int Row, int Column, Vector2 SizeDelta, Transform Parent_Base)
Setup a Grid at a Parent position.

GameObject[] Elements
A List of a GameObject elements to appear on Grid ; Array Numeral Position Represents Element Reference Number.

SwitchElementsRef(int LayerNum1, int Row1, int Column1, int LayerNum2, int Row2, int Column2)
Switch the Elements Given Space (Does not move it just switches Space reference)

void PlaceElements(int LayerNum , int[,] GridElementPosition)
Set list of a GameObject elements that appear on Grid Layer.

BuildGrid.Layer
Edit Layer of grid.

Layer[].Layernum
Layer Number

Layer[].AllElementsInLayer()
Returns all Elements in Layer

Layer[].GetElementAtSpace(int Row, int Column)
Returns Element at Space in Layer

Layer[].GetElementNumAtSpace(int Row, int Column)
Get ElementNum at Space in Layer

Layer[].SetElementNumAtSpace(int Row, int Column, int Number)
Set ElementNum at Space in Layer

Layer[].SetClickableAtSpace(int Row, int Column , bool Set)
Set Clickable at Space in Layer

BuildGrid.MakeInvisible
Make Certain Layers or Elements Invisible/ Doesn't make Unclickable

MakeInvisible.DOLayer(int LayerNumber,float alpha, float timer)
Change All Elements in Layer Alpha / Doesn't make Unclickable

MakeInvisible.DOLayerSpace(int LayerNumber,int Row, int Column, float alpha, float timer)
Change Certain Element in Layer Alpha / Doesn't make Unclickable

MakeInvisible.DOSpace(int Row, int Column, float alpha, float timer)
Change All Element in on a Space Alpha / Doesn't make Unclickable

BuildGrid.Partition
Separate Grid positions into Parts

DG.Tweening.Core.TweenerCore<Vector3, Vector3, DG.Tweening.Plugins.Options.VectorOptions> DotweenCore
Dotween for Partition Movement

int PartitionedParts
Total Amount of Partitioned Parts

void PartitionGrid(int Max_X, int Max_Y)
Separate Parts of a Grid. Must be Lower than Grid Rows and Columns

void SetPartClickable(int part, bool on)
Enable/Disable all spaces in Part to be Clickable or UnClickable

int OnPart
Current Part Position Index.

void TransitionPartPosition(int part, float Timer, bool InActiveUnclickable, bool InActiveTransparent)
Transition to different Parts of the Grid.

Parts[].positions
Returns Positions in Part.

Parts[].totalPositions
Total Amount of Positions in Part.

Parts[].TopRightPosition
Returns The TopRight most Position.

Parts[].BottomLeftPosition
The BottomLeft most Position.

Pro Version:

BuildSwap. – Enable Swapping on Grid

BuildSwap.Preset

Vector2Int PressedPosition_Vector2()
Returns the Pressed Position of the Grid.

bool PressedPosition_Bool()
Returns True/False if Pressed on Position of the Grid.

bool PositionIsAvailable(int Row, int Column)
Checks for Extra Ordinary Conditions that makes the Position Unable to be Interactable(Ex. Partition Grid).

Vector2Int[] PositionSurroundings(int Row, int Column)
Returns an Array of Surrounding Positions (0 - Down , 1 - Up , 2 - Left , 3 - Right).

Vector2Int GetPositionSwipeTowardsPosition(int Row, int Column, bool OutsideBounds)
Returns a Position Based of the Mouse Angle of the Given Position(Ex. If mouse position is Angled Left from the Given Position, it will return the position left the Given Position)

BuildGrid.GridLayer SwapLayer()
Returns the Swapping Layer Class Based on LayerSwapping.

BuildGrid.Space[,] SwapSpaces()
Returns the Swapping Spaces in the Layer Class.

BuildGrid.Space[,] SwapSpaces()
Returns the Swapping Spaces in the Layer Class.

BuildGrid.Space PressedPositionSpace()
Returns the Pressed Position Space Class.

int LayerSwapping
Layer where the Swapping Occurs.

int LayerBoundary
Swap on positions only where given layer elements exist.

int[] SwapElements
Only Swap with given Elements.

int[] SwapElementsBoundary
Only Swap over given Elements in LayerBoundary.

int[] ElementNumbersPositionRestriction
Do Not Swap Elements that Share a position with these Element Numbers.

BuildSwap.SingleSwap

bool SingleEngaged
Returns a Whether Swap is Engaged.

bool PositionDragging
Swap Element While Mouse is Pressed.

bool CanSwapWithEmptySpaces
Can Swap with an Empty Space.

DG.Tweening.Core.TweenerCore<Vector3, Vector3, DG.Tweening.Plugins.Options.VectorOptions>[] SingleSwapTween
DG Moving tween Extension(Only when Move is Engaged else is null)

void EngageSwap(int Layer, float Speed)
Enable Single Swap

BuildSwap.SpaceSwap

bool SpaceSwapEngaged
Returns a Whether Swap is Engaged.

DG.Tweening.Core.TweenerCore<Vector3, Vector3, DG.Tweening.Plugins.Options.VectorOptions>[] SpaceSwapTween
DG Moving tween Extension(Only when Move is Engaged else is null)

void EngageSwap(int Layer, float Speed)
Swap the Element with Empty Space.

BuildMove. – Move Elements Around on the Grid

DG.Tweening.Core.TweenerCore<Vector3, Vector3, DG.Tweening.Plugins.Options.VectorOptions>[] SwitchElements
Switch the Elements Given Space; Moves the Element and switches Ref; Returns DoMove Tween for both elements.

Fall

Int LayerBoundary
Fall on Positions Only where given Layer Elements Exist

int[] ExcludeFallElements
Exclude Elements from Falling

int[] ElementNumbersPositionRestriction
Do Not Fall Elements that Share a Position with these Element Numbers Regardless of Layer

List<> DotweenPaths
Dotween Path Core of all Falling Elements

Engage(int Layer, float Speed)
Begin Fall Of Elements on Layer

FallPattern[,] CustomFalldir
Create Custom Fall Path

bool FallingActive()
Returns if Falling is Active

Emit

Create(int Layer, int Row, int Column, int [] ElementNumbers)
Emit New Elements at Position

BuildMatch – Matches Elements on the Grid.

GetMatches (….)

A Method that Finds and Outputs a List of Matches and their Names. The Default Match Pattern is 3 or more of the same element in a row or column, however this can be changed using SetCustomMatch().

SetCustomMatch(….)

Adds a Custom Match Pattern.