Simple Mesh Distortion

1.0

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Contents

Chapter 1

Index page

1.1 Introduction

This package create distortions and deformities for meshes in real time or pre-calculated to be used in Unity.

1.2 How to use

1.2.1 Step 1: Add a mesh to the scene

Find and add a mesh to the scene, it can have multiple meshes in the child components, you just need to add the scripts to the parent that you want the distortions to occur.

1.2.2 Step 2: Add the scripts to the GameObject

Add the MeshDistort.Distort script to create distortions to this mesh, you can also add the MeshDistort.Animated↩ Distort script if you want the distortion to the animated. To undestand how to tweak the distortions, see the Mesh↩ Distort.Distort and MeshDistort.AnimatedDistort documentation.

1.3 Videos

Here are some videos to better explain how to set up the package in you project:

1.3.1 Showcase:

https://www.youtube.com/watch?v=YyPV39CBUyg

1.3.2 Tutorial:

https://www.youtube.com/watch?v=99TT05PjxXE

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 4

Data Structure Index

4.1 Data Structures

Here are the data structures with brief descriptions:

Chapter 5

Namespace Documentation

5.1 MeshDistort Namespace Reference

Contain the scripts for the Easy Distortion Package

Data Structures

- class AnimatedDistort

  Animate distortions and save animations for it.
- class AnimatedDistortEditor

  Custom Editor to the AnimatedDistort script
- class Distort

  Generate the distortions applied to the mesh.
- class DistortAnimation

  Hold animation data to b used in AnimatedDistort
- class DistortData

  Hold all the information of a distortion and apply its calculations on the distortion.
- class DistortEditor

  Custom editor to the DistortEditor script
- class FrameAnimation

  Save vertices values for a mesh to use in animation.
- class FrameCollection

  Hold animation for each mesh in a frame
- class Math

  Math functions
- class MeshDistortData

  Hold the information of a mesh and the data used to generated distortions for it.

5.1.1 Detailed Description

Contain the scripts for the Easy Distortion Package

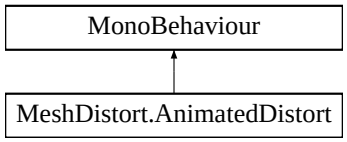
Chapter 6

Data Structure Documentation

6.1 MeshDistort.AnimatedDistort Class Reference

Animate distortions and save animations for it.

Inheritance diagram for MeshDistort.AnimatedDistort:



Public Types

- enum Animate { **force**, **displacement** }
  Types of animations it can do
- enum Type { **constant**, **pingpong**, **sin** }
  Animation options

Public Member Functions

- void CalculateInRealTime ()
  Calculate the distortion in real time
- void PlayAnimationFrame (int index)
  Play a recorded animation
- void SaveAnimation ()
  Save a new animation
- void DeleteAnimation (int index)
  Delete a animation
- void SetAnimation (int animationIndex)
  Set a animation to play
- void ChangeAnimation (int indexTo)
  Change an animation to another
- void ChangeAnimation (int indexTo, float time)
  Change an animation to another
- void ChangeAnimation (int indexFrom, int indexTo, float time=3)
  hange an animation to another
- void MergeAnimation (int indexFrom, int indexTo, float force)
  Merge an animation to another using a percentage

Data Fields

- float animationFramesPerSec = 30

  Used to configure a new animation to be saved
- int animationFrames = 1

  Number of frames to save in a animation
- Type type = Type.constant

  Current animation type
- Animate **animate** = Animate.displacement
- float constantSpeed = 1

  Speed of the animation of constant type
- float minValue = 0

  Min value for not const animation
- float maxValue = 10

  Max value for not const animation
- int playAnimationIndex = 0

  Index of the animation that is playing. 0 is a special value to calculate animation in real time
- List< DistortAnimation > animationList

  List of saved animations
- bool updatingAnimation = false

  Is the script changing one animation to another?

Protected Attributes

- Distort distort

  Reference to the DistortVertices on this GameObject

Properties

- int currentAnimation `[get, set]`

  Animation index, but remove the special index of 0 and fix the index.

6.1.1 Detailed Description

Animate distortions and save animations for it.

6.1.2 Member Enumeration Documentation

6.1.2.1 Animate

`enum MeshDistort.AnimatedDistort.Animate [strong]`

Types of animations it can do

6.1.2.2 Type

```
enum MeshDistort.AnimatedDistort.Type  [strong]
```

Animation options

6.1.3 Member Function Documentation

6.1.3.1 CalculateInRealTime()

```
void MeshDistort.AnimatedDistort.CalculateInRealTime ( )  [inline]
```

Calculate the distortion in real time

6.1.3.2 ChangeAnimation() [1/3]

```
void MeshDistort.AnimatedDistort.ChangeAnimation (
            int indexTo )  [inline]
```

Change an animation to another

Parameters

indexTo	New index to play

6.1.3.3 ChangeAnimation() [2/3]

```
void MeshDistort.AnimatedDistort.ChangeAnimation (
            int indexTo,
            float time )  [inline]
```

Change an animation to another

Parameters

indexTo	Animation to start
time	Animation to end

6.1.3.4 ChangeAnimation() [3/3]

```
void MeshDistort.AnimatedDistort.ChangeAnimation (
            int indexFrom,
            int indexTo,
            float time = 3 )  [inline]
```

hange an animation to another

Parameters

indexFrom	Animation to start
indexTo	Animation to end
time	Transition time

6.1.3.5 DeleteAnimation()

```
void MeshDistort.AnimatedDistort.DeleteAnimation (
            int index )  [inline]
```

Delete a animation

Parameters

index	Index of animation to be deleted

6.1.3.6 MergeAnimation()

```
void MeshDistort.AnimatedDistort.MergeAnimation (
            int indexFrom,
            int indexTo,
            float force )  [inline]
```

Merge an animation to another using a percentage

Parameters

indexFrom	First animation
indexTo	Second animation
force	How much force each animation have

6.1.3.7 PlayAnimationFrame()

```
void MeshDistort.AnimatedDistort.PlayAnimationFrame (
            int index )  [inline]
```

Play a recorded animation

Parameters

index	Animation index (Starting at 0)

6.1.3.8 SaveAnimation()

```
void MeshDistort.AnimatedDistort.SaveAnimation ( )  [inline]
```

Save a new animation

6.1.3.9 SetAnimation()

```
void MeshDistort.AnimatedDistort.SetAnimation (
            int animationIndex )  [inline]
```

Set a animation to play

Parameters

animationIndex	Animation index

6.1.4 Field Documentation

6.1.4.1 animationFrames

```
int MeshDistort.AnimatedDistort.animationFrames = 1
```

Number of frames to save in a animation

6.1.4.2 animationFramesPerSec

```
float MeshDistort.AnimatedDistort.animationFramesPerSec = 30
```

Used to configure a new animation to be saved

6.1.4.3 animationList

```
List<DistortAnimation> MeshDistort.AnimatedDistort.animationList
```

List of saved animations

6.1.4.4 constantSpeed

```
float MeshDistort.AnimatedDistort.constantSpeed = 1
```

Speed of the animation of constant type

6.1.4.5 distort

```
Distort MeshDistort.AnimatedDistort.distort  [protected]
```

Reference to the DistortVertices on this GameObject

6.1.4.6 maxValue

```
float MeshDistort.AnimatedDistort.maxValue = 10
```

Max value for not const animation

6.1.4.7 minValue

```
float MeshDistort.AnimatedDistort.minValue = 0
```

Min value for not const animation

6.1.4.8 playAnimationIndex

```
int MeshDistort.AnimatedDistort.playAnimationIndex = 0
```

Index of the animation that is playing. 0 is a special value to calculate animation in real time

6.1.4.9 type

```
Type MeshDistort.AnimatedDistort.type = Type.constant
```

Current animation type

6.1.4.10 updatingAnimation

```
bool MeshDistort.AnimatedDistort.updatingAnimation = false
```

Is the script changing one animation to another?

6.1.5 Property Documentation

6.1.5.1 currentAnimation

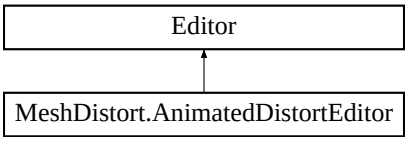
```
int MeshDistort.AnimatedDistort.currentAnimation  [get], [set]
```

Animation index, but remove the special index of 0 and fix the index.

6.2 MeshDistort.AnimatedDistortEditor Class Reference

Custom Editor to the AnimatedDistort script

Inheritance diagram for MeshDistort.AnimatedDistortEditor:



Public Member Functions

- override void **OnInspectorGUI** ()

6.2.1 Detailed Description

Custom Editor to the AnimatedDistort script

6.3 MeshDistort.DistortData.BufferManager.BufferFrameData Struct Reference

Data Fields

- float **movementDisplacement**
- Vector3 **bMin**
- Vector3 **bNormalized**
- Vector3 **bCenter**

6.4 MeshDistort.DistortData.BufferManager Class Reference

Data Structures

- struct BufferFrameData
- struct BufferObjectData

Public Member Functions

- void **CreateBuffers** ()
- void **SetBuffers** (ComputeShader shader, int kernel)
- void **ReleaseBuffers** ()

Data Fields

- BufferObjectData **objectStruct**
- BufferFrameData **frameStruct**
- ComputeBuffer **objectData**
- ComputeBuffer **frameData**
- ComputeBuffer **displacedForceX**
- ComputeBuffer **displacedForceY**
- ComputeBuffer **displacedForceZ**
- ComputeBuffer **displacedForceXY**
- ComputeBuffer **displacedForceXZ**
- ComputeBuffer **displacedForceYX**
- ComputeBuffer **displacedForceYZ**
- ComputeBuffer **displacedForceZX**
- ComputeBuffer **displacedForceZY**
- ComputeBuffer **staticForceX**
- ComputeBuffer **staticForceY**
- ComputeBuffer **staticForceZ**

6.5 MeshDistort.DistortData.BufferManager.BufferObjectData Struct Reference

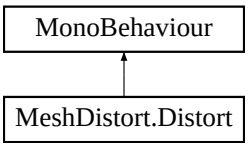
Data Fields

- int **isPingPong**
- int **calculateInWorldSpace**
- float **animationSpeed**
- int **type**
- float **force**
- Vector3 **tile**

6.6 MeshDistort.Distort Class Reference

Generate the distortions applied to the mesh.

Inheritance diagram for MeshDistort.Distort:



Public Types

- enum Type { **Stretch**, **Spin**, **Random**, **Inflate** }

  Possible types of distortion

Public Member Functions

- void **SetBuffers** ()
- void **ReleaseBuffers** ()
- Object [ ] GetAllMeshes ()

  Get all the distorted meshes as a array
- void **EditParameters** ()
- void **Update** ()
- void **UpdateDistort** ()
- void **UpdateInGPU** ()
- void UpdateInCPU ()

  Generate the distortions to the mesh
- void UpdateDebugLines ()

  Update the positions of the debug lines.
- void MakeDynamic ()

  Mark all meshes as dynamic.
- void AddDistortion ()

  Add a new distortion to the mesh
- void RemoveDistort (int index)

  Remove a distortion from the mesh

Data Fields

- bool updateIntEditor = true

  Update the mesh while in EditorMode
- List< DistortData > distort = new List<DistortData>()

  List of all the distortions of this mesh
- List< MeshDistortData > meshList

  List of all meshes to apply the distortion
- Bounds combinedBounds

  All bounds of the meshList combined into one
- bool showDebugLines = false

  Show the debug lines in the editor
- float debugLinesDistance = 1

  Distance from the center of the model of the debug lines
- Vector3 [,] debugLines

  All the points of the debug lines
- bool showMeshInEditor = true

  Show the distort mesh in the editor
- bool showPreviewWindow = true

  Show the distort mesh in the editor
- bool **calculateInGPU** = true
- ComputeShader **distortShader**

Protected Attributes

- int **dirtortKernel**

6.6.1 Detailed Description

Generate the distortions applied to the mesh.

6.6.2 Member Enumeration Documentation

6.6.2.1 Type

```
enum MeshDistort.Distort.Type  [strong]
```

Possible types of distortion

6.6.3 Member Function Documentation

6.6.3.1 AddDistortion()

```
void MeshDistort.Distort.AddDistortion ( )  [inline]
```

Add a new distortion to the mesh

If there is no distortion, create a new list

6.6.3.2 GetAllMeshes()

```
Object [] MeshDistort.Distort.GetAllMeshes ( )  [inline]
```

Get all the distorted meshes as a array

Returns

6.6.3.3 MakeDynamic()

```
void MeshDistort.Distort.MakeDynamic ( )  [inline]
```

Mark all meshes as dynamic.

6.6.3.4 RemoveDistort()

```
void MeshDistort.Distort.RemoveDistort (
            int index )  [inline]
```

Remove a distortion from the mesh

Parameters

index	Index to remove from the list

6.6.3.5 UpdateDebugLines()

```
void MeshDistort.Distort.UpdateDebugLines ( )  [inline]
```

Update the positions of the debug lines.

6.6.3.6 UpdateInCPU()

```
void MeshDistort.Distort.UpdateInCPU ( )  [inline]
```

Generate the distortions to the mesh

6.6.4 Field Documentation

6.6.4.1 combinedBounds

```
Bounds MeshDistort.Distort.combinedBounds
```

All bounds of the meshList combined into one

6.6.4.2 debugLines

```
Vector3 [,] MeshDistort.Distort.debugLines
```

All the points of the debug lines

6.6.4.3 debugLinesDistance

```
float MeshDistort.Distort.debugLinesDistance = 1
```

Distance from the center of the model of the debug lines

6.6.4.4 distort

```
List<DistortData> MeshDistort.Distort.distort = new List<DistortData>()
```

List of all the distortions of this mesh

6.6.4.5 meshList

```
List<MeshDistortData> MeshDistort.Distort.meshList
```

List of all meshes to apply the distortion

6.6.4.6 showDebugLines

```
bool MeshDistort.Distort.showDebugLines = false
```

Show the debug lines in the editor

6.6.4.7 showMeshInEditor

```
bool MeshDistort.Distort.showMeshInEditor = true
```

Show the distort mesh in the editor

6.6.4.8 showPreviewWindow

```
bool MeshDistort.Distort.showPreviewWindow = true
```

Show the distort mesh in the editor

6.6.4.9 updateIntEditor

```
bool MeshDistort.Distort.updateIntEditor = true
```

Update the mesh while in EditorMode

6.7 MeshDistort.DistortAnimation Class Reference

Hold animation data to b used in AnimatedDistort

Data Fields

- string animName
  Name of the animation
- int frames
  Total frames in animation
- float framesPerSec
  Frames per sec.
- FrameCollection [ ] frameData
  Animation data for each frame

6.7.1 Detailed Description

Hold animation data to b used in AnimatedDistort

6.7.2 Field Documentation

6.7.2.1 animName

```
string MeshDistort.DistortAnimation.animName
```

Name of the animation

6.7.2.2 frameData

```
FrameCollection [] MeshDistort.DistortAnimation.frameData
```

Animation data for each frame

6.7.2.3 frames

```
int MeshDistort.DistortAnimation.frames
```

Total frames in animation

6.7.2.4 framesPerSec

```
float MeshDistort.DistortAnimation.framesPerSec
```

Frames per sec.

6.8 MeshDistort.DistortData Class Reference

Hold all the information of a distortion and apply its calculations on the distortion.

Data Structures

- class BufferManager

Public Member Functions

- void **ReleaseBuffers** ()
- void **SetupBuffers** ()
- void **UpdateObjectDataBuffer** ()
- void **UpdateFrameDataBuffer** ()
- void **UpdateBufferCurves** ()
- float [ ] **Curve2Array** (AnimationCurve curve)
- void SetBounds (Bounds bounds)

  Set the bounds of the mesh to use in the calculations later.
- void DistortVertice (ref Vector3 vertice)

  Calculate the distortion in a position

Data Fields

- bool enabled = true

  If this distortion will be calculated
- float animationSpeed = 1f

  Multiplier for the DistortAnimation, will make animation faster or slower
- Distort.Type type

  Type of this distortion
- float force = 1f

  How much force is applied to the distortion
- float movementDisplacement = 0

  Displacement for each vertice (only for calculation), used for animation
- Vector3 tile = Vector3.one

  How much times the distortion will be applied from Bound.min to Bound.max
- AnimationCurve displacedForceX = new AnimationCurve()

  Force for a distortion in the axis X, affected by the movementDisplacement param
- AnimationCurve displacedForceY = new AnimationCurve()

  Force for a distortion in the axis Y, affected by the movementDisplacement param
- AnimationCurve displacedForceZ = new AnimationCurve()

  Force for a distortion in the axis Z, affected by the movementDisplacement param
- AnimationCurve displacedForceXY = new AnimationCurve()

  Change the value of the X axis of the vertice by its Y value, affected by the movementDisplacement param
- AnimationCurve displacedForceXZ = new AnimationCurve()

  Change the value of the X axis of the vertice by its Z value, affected by the movementDisplacement param
- AnimationCurve displacedForceYX = new AnimationCurve()

  Change the value of the Y axis of the vertice by its X value, affected by the movementDisplacement param
- AnimationCurve displacedForceYZ = new AnimationCurve()

  Change the value of the Y axis of the vertice by its Z value, affected by the movementDisplacement param
- AnimationCurve displacedForceZX = new AnimationCurve()

  Change the value of the Z axis of the vertice by its X value, affected by the movementDisplacement param
- AnimationCurve displacedForceZY = new AnimationCurve()

  Change the value of the Z axis of the vertice by its Y value, affected by the movementDisplacement param
- AnimationCurve staticForceX = new AnimationCurve(new Keyframe(0, 1), new Keyframe(1, 1))

  Force for a distortion in the axis X, NOT affected by the movementDisplacement param
- AnimationCurve staticForceY = new AnimationCurve(new Keyframe(0, 1), new Keyframe(1, 1))

  Force for a distortion in the axis Y, NOT affected by the movementDisplacement param
- AnimationCurve staticForceZ = new AnimationCurve(new Keyframe(0, 1), new Keyframe(1, 1))

  Force for a distortion in the axis Z, NOT affected by the movementDisplacement param

- bool isPingPong = true

  Calculate vertice position inside the bounds using the pingpong algorithm
- bool showInEditor = true

  Hide or show the foldout in the editor screen for this distortion
- bool calculateInWorldSpace = false

  Calculate this distortion in world or local space.
- BufferManager **bufferManager**

6.8.1 Detailed Description

Hold all the information of a distortion and apply its calculations on the distortion.

6.8.2 Member Function Documentation

6.8.2.1 DistortVertice()

```
void MeshDistort.DistortData.DistortVertice (
            ref Vector3 vertice )  [inline]
```

Calculate the distortion in a position

Parameters

vertice	Position to calculate the distortion

6.8.2.2 SetBounds()

```
void MeshDistort.DistortData.SetBounds (
            Bounds bounds )  [inline]
```

Set the bounds of the mesh to use in the calculations later.

Parameters

bounds	

6.8.3 Field Documentation

6.8.3.1 animationSpeed

```
float MeshDistort.DistortData.animationSpeed = 1f
```

Multiplier for the DistortAnimation, will make animation faster or slower

6.8.3.2 calculateInWorldSpace

```
bool MeshDistort.DistortData.calculateInWorldSpace = false
```

Calculate this distortion in world or local space.

6.8.3.3 displacedForceX

```
AnimationCurve MeshDistort.DistortData.displacedForceX = new AnimationCurve()
```

Force for a distortion in the axis X, affected by the movementDisplacement param

6.8.3.4 displacedForceXY

```
AnimationCurve MeshDistort.DistortData.displacedForceXY = new AnimationCurve()
```

Change the value of the X axis of the vertice by its Y value, affected by the movementDisplacement param

6.8.3.5 displacedForceXZ

```
AnimationCurve MeshDistort.DistortData.displacedForceXZ = new AnimationCurve()
```

Change the value of the X axis of the vertice by its Z value, affected by the movementDisplacement param

6.8.3.6 displacedForceY

```
AnimationCurve MeshDistort.DistortData.displacedForceY = new AnimationCurve()
```

Force for a distortion in the axis Y, affected by the movementDisplacement param

6.8.3.7 displacedForceYX

```
AnimationCurve MeshDistort.DistortData.displacedForceYX = new AnimationCurve()
```

Change the value of the Y axis of the vertice by its X value, affected by the movementDisplacement param

6.8.3.8 displacedForceYZ

```
AnimationCurve MeshDistort.DistortData.displacedForceYZ = new AnimationCurve()
```

Change the value of the Y axis of the vertice by its Z value, affected by the movementDisplacement param

6.8.3.9 displacedForceZ

```
AnimationCurve MeshDistort.DistortData.displacedForceZ = new AnimationCurve()
```

Force for a distortion in the axis Z, affected by the movementDisplacement param

6.8.3.10 displacedForceZX

```
AnimationCurve MeshDistort.DistortData.displacedForceZX = new AnimationCurve()
```

Change the value of the Z axis of the vertice by its X value, affected by the movementDisplacement param

6.8.3.11 displacedForceZY

```
AnimationCurve MeshDistort.DistortData.displacedForceZY = new AnimationCurve()
```

Change the value of the Z axis of the vertice by its Y value, affected by the movementDisplacement param

6.8.3.12 enabled

```
bool MeshDistort.DistortData.enabled = true
```

If this distortion will be calculated

6.8.3.13 force

```
float MeshDistort.DistortData.force = 1f
```

How much force is applied to the distortion

6.8.3.14 isPingPong

```
bool MeshDistort.DistortData.isPingPong = true
```

Calculate vertice position inside the bounds using the pingpong algorithm

6.8.3.15 movementDisplacement

```
float MeshDistort.DistortData.movementDisplacement = 0
```

Displacement for each vertice (only for calculation), used for animation

6.8.3.16 showInEditor

```
bool MeshDistort.DistortData.showInEditor = true
```

Hide or show the foldout in the editor screen for this distortion

6.8.3.17 staticForceX

```
AnimationCurve MeshDistort.DistortData.staticForceX = new AnimationCurve(new Keyframe(0, 1),
new Keyframe(1, 1))
```

Force for a distortion in the axis X, NOT affected by the movementDisplacement param

6.8.3.18 staticForceY

```
AnimationCurve MeshDistort.DistortData.staticForceY = new AnimationCurve(new Keyframe(0, 1),
new Keyframe(1, 1))
```

Force for a distortion in the axis Y, NOT affected by the movementDisplacement param

6.8.3.19 staticForceZ

```
AnimationCurve MeshDistort.DistortData.staticForceZ = new AnimationCurve(new Keyframe(0, 1),
new Keyframe(1, 1))
```

Force for a distortion in the axis Z, NOT affected by the movementDisplacement param

6.8.3.20 tile

```
Vector3 MeshDistort.DistortData.tile = Vector3.one
```

How much times the distortion will be applied from Bound.min to Bound.max

6.8.3.21 type

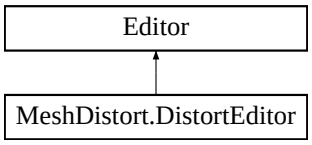
```
Distort.Type MeshDistort.DistortData.type
```

Type of this distortion

6.9 MeshDistort.DistortEditor Class Reference

Custom editor to the DistortEditor script

Inheritance diagram for MeshDistort.DistortEditor:



Public Member Functions

- void **OnEnable** ()
- void **OnDisable** ()
- override GUIContent **GetPreviewTitle** ()
- void **OnUndo** ()
- override void **OnInspectorGUI** ()
- override bool **HasPreviewGUI** ()
- override void **OnInteractivePreviewGUI** (Rect r, GUIStyle background)
- override void **OnPreviewSettings** ()
- void SaveMesh ()

  Save a distorted mesh as a file

6.9.1 Detailed Description

Custom editor to the DistortEditor script

6.9.2 Member Function Documentation

6.9.2.1 SaveMesh()

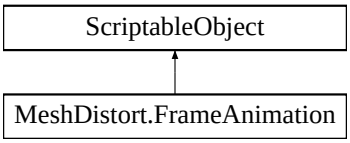
```
void MeshDistort.DistortEditor.SaveMesh ( )  [inline]
```

Save a distorted mesh as a file

6.10 MeshDistort.FrameAnimation Class Reference

Save vertices values for a mesh to use in animation.

Inheritance diagram for MeshDistort.FrameAnimation:



Public Member Functions

- FrameAnimation (Transform transform, Vector3[ ] vertices)
  Create a new Frame animation

Data Fields

- Transform transform
  Transform of the mesh to me animated
- Vector3 [ ] vertices
  Vertices on this frame to be applied to the mesh

Properties

- Mesh mesh `[get]`
  Get the mesh from the transform

6.10.1 Detailed Description

Save vertices values for a mesh to use in animation.

6.10.2 Constructor & Destructor Documentation

6.10.2.1 FrameAnimation()

```
MeshDistort.FrameAnimation.FrameAnimation (
            Transform transform,
            Vector3 [] vertices )  [inline]
```

Create a new Frame animation

Parameters

transform	transform of the mesh that the animation will be applied
vertices	Vertices that will be applied in this frame

6.10.3 Field Documentation

6.10.3.1 transform

```
Transform MeshDistort.FrameAnimation.transform
```

Transform of the mesh to me animated

6.10.3.2 vertices

```
Vector3 [] MeshDistort.FrameAnimation.vertices
```

Vertices on this frame to be applied to the mesh

6.10.4 Property Documentation

6.10.4.1 mesh

```
Mesh MeshDistort.FrameAnimation.mesh  [get]
```

Get the mesh from the transform

6.11 MeshDistort.FrameCollection Class Reference

Hold animation for each mesh in a frame

Data Fields

- FrameAnimation [ ] data

  Collection of meshes and the vertice values to be used in a frame

6.11.1 Detailed Description

Hold animation for each mesh in a frame

6.11.2 Field Documentation

6.11.2.1 data

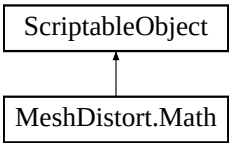
```
FrameAnimation [ ] MeshDistort.FrameCollection.data
```

Collection of meshes and the vertice values to be used in a frame

6.12 MeshDistort.Math Class Reference

Math functions

Inheritance diagram for MeshDistort.Math:



Static Public Member Functions

- static float Repeat (float num, float min, float max)

  Repeat a value between min and max
- static float PingPong (float num, float min, float max)

  Repeat a number from and back between min and max

6.12.1 Detailed Description

Math functions

6.12.2 Member Function Documentation

6.12.2.1 PingPong()

```
static float MeshDistort.Math.PingPong (
            float num,
            float min,
            float max )  [inline], [static]
```

Repeat a number from and back between min and max

Parameters

num	Number to ping pong
min	Minimun number
max	Maximum Number

Returns

The value between min and max

6.12.2.2 Repeat()

```
static float MeshDistort.Math.Repeat (
            float num,
            float min,
            float max )  [inline], [static]
```

Repeat a value between min and max

Parameters

num	Number to repeat
min	Minimum value it can get
max	Maximum value it can get

Returns

The value between min and max

6.13 MeshDistort.MeshDistortData Class Reference

Hold the information of a mesh and the data used to generated distortions for it.

Public Member Functions

- **MeshDistortData** (Transform transform, Material material, MeshFilter filter)
- **MeshDistortData** (Transform transform, Material material, SkinnedMeshRenderer skin)
- void **CreateBuffers** ()
- void **ReleaseBuffers** ()
- void **BufferSet** (ComputeShader shader, int kernel)
- void UpdateMesh ()

  Update the mesh to apply the distortions later on.
- void ResetMesh ()

  Reset the mesh to its default values.

Data Fields

- Mesh mesh

  The mesh that will be applied distortios to
- MeshFilter filter

  MeshFilter of the gameObject
- Material originalMaterial

  Original Material used by the GameObject
- Transform meshTransform

  The transform from the mesh GameObject
- Vector3 [ ] originalVertices

  Hold the values for the vertices without any distortion applied
- ComputeBuffer **verticeBuffer**
- ComputeBuffer **matrixBuffer**
- Transform [ ] **bones**
- Transform **root**

Properties

- Vector3 [ ] skinVertices `[get]`

  Hold the values for the vertices without any distortion applied

6.13.1 Detailed Description

Hold the information of a mesh and the data used to generated distortions for it.

6.13.2 Member Function Documentation

6.13.2.1 ResetMesh()

```
void MeshDistort.MeshDistortData.ResetMesh ( )  [inline]
```

Reset the mesh to its default values.

6.13.2.2 UpdateMesh()

```
void MeshDistort.MeshDistortData.UpdateMesh ( )  [inline]
```

Update the mesh to apply the distortions later on.

6.13.3 Field Documentation

6.13.3.1 filter

```
MeshFilter MeshDistort.MeshDistortData.filter
```

MeshFilter of the gameObject

6.13.3.2 mesh

```
Mesh MeshDistort.MeshDistortData.mesh
```

The mesh that will be applied distortios to

6.13.3.3 meshTransform

```
Transform MeshDistort.MeshDistortData.meshTransform
```

The transform from the mesh GameObject

6.13.3.4 originalMaterial

```
Material MeshDistort.MeshDistortData.originalMaterial
```

Original Material used by the GameObject

6.13.3.5 originalVertices

```
Vector3 [] MeshDistort.MeshDistortData.originalVertices
```

Hold the values for the vertices without any distortion applied

6.13.4 Property Documentation

6.13.4.1 skinVertices

```
Vector3 [] MeshDistort.MeshDistortData.skinVertices  [get]
```

Hold the values for the vertices without any distortion applied