ShockWave Effect

Asset Store Link

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Contact

Questions, suggestions, help needed?
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Description/Features

Awesome ShockWave Effect!

- Add it to any script with just one line of code!
- Create ShockWaves (and Reverse ShockWaves)
- Customize your ShockWave style with AnimationCurves
- Easily Pause/UnPause Shockwaves
- Unity Free friendly.
- Fully commented C# code.
- Awesome demos!

Terms of Use

You are free to add this asset to any game you'd like However:
please put my name in the credits, or in the special thanks section. :)
please do not re-distribute.

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ShockWave.cs

ShockWave.cs is the main script that creates and manages the shockwaves.

Speed,Radius,Amplitude,WaveSize

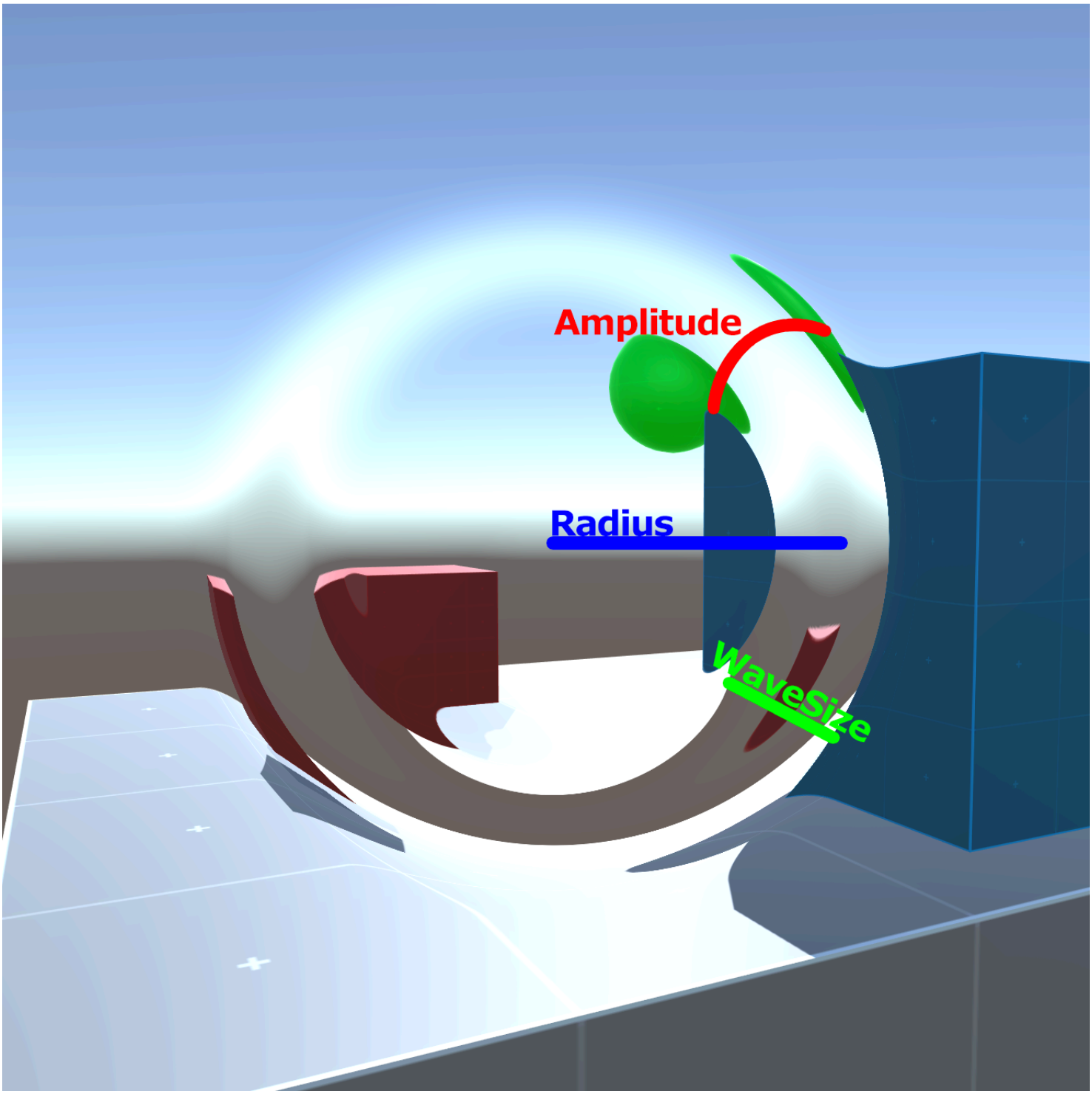
these are the 4 values that we can adjust to change the look, and style of the shockwave.

Speed:
this is just the speed at which the animation will play.

Radius:
the distance between the center of the circle to it's edge.

Amplitude:
the distortion amount along the edge of the shockwave.

WaveSize:
this is the thickness of the shockwave.



Methods

There are 12 methods that can be used to display a shockwave.

This first set will allow you to pass in a Position (or a GameObject), and floats for Speed, MaxRadius, Amplitude, and WaveSize

```C#
public void StartIt(Vector2 Position, float Speed = 1f,float MaxRadius = 1f, float Amplitude =
```

```C#
public void StartIt(Vector3 Position, float Speed = 1f,float MaxRadius = 1f, float Amplitude =
```

```C#
public void StartIt(Vector3 Position, bool IsScreenPosition, float Speed = 1f,float MaxRadius
```

```C#
public void StartIt(GameObject Target, float Speed = 1f,float MaxRadius = 1f, float Amplitude
```

Similar to the first set, this Second set will allow you to pass in a Position (or a GameObject), and floats for Speed, MaxRadius, Amplitude, and WaveSize. However the animation will play in reverse

```C#
public void ReverseIt(Vector2 Position, float Speed = 1f,float MaxRadius = 1f, float Amplitude
```

```C#
public void ReverseIt(Vector3 Position, float Speed = 1f,float MaxRadius = 1f, float Amplitude
```

```C#
public void ReverseIt(Vector3 Position, bool IsScreenPosition, float Speed = 1f,float MaxRadius
```

```C#
public void ReverseIt(GameObject Target, float Speed = 1f,float MaxRadius = 1f, float Amplitude
```

If you want more control over how the shockwave looks, the last set will allow you to pass in animationCurves

```C#
public void StartIt(Vector2 Position, float Speed = 1f, AnimationCurve radiusOverTime =  null,
```

```C#
public void StartIt(Vector3 Position, float Speed = 1f, AnimationCurve radiusOverTime =  null,
```

```C#
public void StartIt(Vector3 Position, bool IsScreenPosition, float Speed = 1f, AnimationCurve
```

```C#
public void StartIt(GameObject Target, float Speed = 1f, AnimationCurve radiusOverTime =  null
```

ShockWave_WorldSpace.cs

Is a script much like ShockWave.cs however it is used in the ShockWave(WorldSpace).prefab.

Please view Demo-Scene4 and read ShockWave_WorldSpace.cs for more info.

Demo1

In demo1 we are creating shockwaves based on the value of the sliders, and the value of the reverse toggle.

```C#
...
    void Update ()
    {
        if (Input.GetMouseButtonDown(0))
        {
            if (RevSW)
            {
                ShockWave.Get().ReverseIt(Input.mousePosition,true,Speed,MaxRadius, Amp ,WS);
            }
            else
            {
                ShockWave.Get().StartIt(Input.mousePosition,true,Speed,MaxRadius, Amp, WS);
            }
        }
    }
...
```

Demo2

In demo2 we are creating shockwaves not calling StartIt (or ReverseIt), and then setting the radius, amplitude, and waveSize to a random float.

This technique can be done if you want a lot of control over the shockwave, for example a game that uses 3D Touch.

```C#
...
    void Update()
    {
        if (Input.GetMouseButtonDown(0))
        {

            SW = ShockWave.Get();
            SW.SetPosition(Input.mousePosition,true);
            SW.radius = Random.Range(0.05f,0.2f);
            SW.amplitude = Random.Range(0.05f,0.2f);
            SW.waveSize = Random.Range(0.05f,0.2f);

        }
    }
...
```

Demo3

Demo3 is a testing scene for the ShockWaves using AnimationCurves. Edit the values in "ShockWaveMaker" GameObject, Play the scene, then click around.

```C#
...
    public float speed = 1f;
    public AnimationCurve radiusOverTime;
    public AnimationCurve amplitudeOverTime;
    public AnimationCurve waveSizeOverTime;

    void Update()
    {
        if (Input.GetMouseButtonDown(0))
        {
            ShockWave.Get().StartIt(Input.mousePosition,true,speed,radiusOverTime,amplitudeOver
        }
    }
...
```

Demo4

In demo4 the projectiles are creating shockwaves on collision. These shockwaves are rendered on quads within the worldspace (not on the screen). These shockwaves can be customized by changing the values

ShockWave(WorldSpace).prefab.

The code below shows how these shockwaves can be created.

C#

```
    /// <summary>
    /// Raises the collision enter event.
    /// </summary>
    /// <param name="collision">Collision.</param>
    void OnCollisionEnter(Collision collision)
    {
        //get the direction the projectile is moving
        Vector3 dir = collision.contacts[0].point - gameObject.transform.position;

        //create a Ray
        Ray ray = new Ray(gameObject.transform.position,dir);

        //the output value
        RaycastHit hit;

        //use the raycast
        if (Physics.Raycast (ray,out hit, 100,mask))
        {
            //create a shockwave by creating an object from a prefab
            GameObject obj = GameObject.Instantiate(prefab);

            //move the shockwave to the correct location and rotation
            obj.transform.rotation = Quaternion.FromToRotation (Vector3.forward, hit.normal);
            obj.transform.position = hit.point;
            obj.transform.position += obj.transform.forward * 0.1f;

            //if you need an example of how to use delegates...
            /*
            obj.GetComponent<ShockWave_WorldSpace>().OnAnimationComplete += delegateExample.pri
            obj.GetComponent<ShockWave_WorldSpace>().OnAnimationComplete += delegateExample.pri
            obj.GetComponent<ShockWave_WorldSpace>().OnAnimationComplete += delegateExample.res
            */
        }

        //make the particleSystem
        GameObject.Instantiate(particleSystem,gameObject.transform.position,gameObject.transfor

        //destory the projectile
        Destroy(gameObject);
    }
...
```

Demo5

In demo5 is a jumping demo, i made this when i saw rocket league use a similar effect when the cars jump :)

C#

```
/*
JumpScript.cs
Used to make the block jump!
*/

using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class JumpScript : MonoBehaviour {

    public float jumpForce;
    public GameObject prefab;
    public Vector3 swPositionOffset;

    // Update is called once per frame
    void Update ()
    {
        if (Input.GetKeyDown(KeyCode.Space))
        {
            gameObject.GetComponent<Rigidbody>().AddForce(0f,jumpForce,0f);


            //create a shockwave by creating an object from a prefab
            GameObject obj = GameObject.Instantiate(prefab);

            //move the shockwave to the correct location and rotation
            //obj.transform.rotation = Quaternion.FromToRotation(Vector3.forward, hit.normal);
            //obj.transform.position = hit.point;
            obj.transform.rotation = Quaternion.Euler(90f, 0f, 0f);
            obj.transform.position = transform.position + swPositionOffset;
        }
    }
}
```

Demo6

In demo6 was recommended by a customer.
Shows that you can decide switch camera to render this effect on.

C#

```
void Update ()
    {
        if (Input.GetMouseButtonDown(0))
        {
            if (RevSW)
            {
                //both of these are valid...
                //ShockWave.Get().ReverseIt(Input.mousePosition,true,Speed,MaxRadius, Amp ,WS)
                ShockWave.Get(thisCamera).ReverseIt(Input.mousePosition, true, Speed, MaxRadius

            }
            else
            {
                //both of these are valid...
                //ShockWave.Get().StartIt(Input.mousePosition,true,Speed,MaxRadius, Amp, WS); /
                ShockWave.Get(thisCamera).StartIt(Input.mousePosition, true, Speed, MaxRadius,
            }
        }
    }
```