AUTHOR	Michael Soler
CONTACT	michael.soler.beatty@gmail.com
Unity Ver.	2018.2

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1.Description of the package.

From cardboard buddies we pretend to give the best VR packages to our customers with simplicity and transparency. This package allows the user to create a simple menu (buttons) that are completely curved and whose parameters can be changed on the editor mode. You will also find the following scene:

Scene based on googleVR helloVR

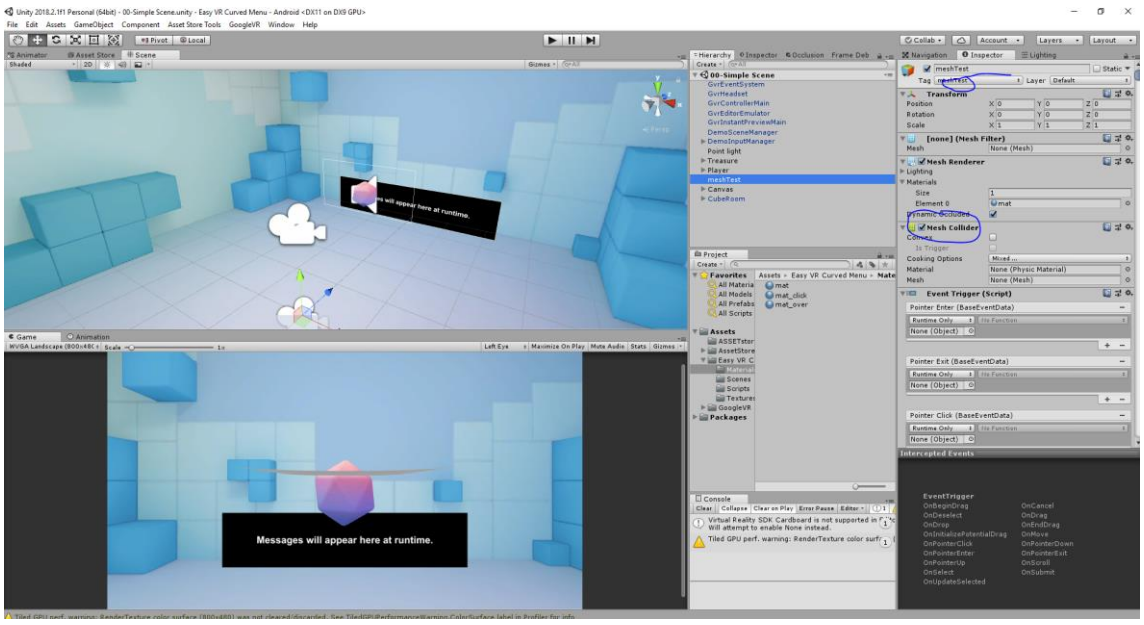
This scene was obtained attaching the radar to the “helloVR” scene in the /googleVR/demos/scenes.

The asset contains the necessary models, textures and prefabs shown in the video.

For further information please contact michael.soler.beatty@gmail.com.

2.Colliders, tags and physics

A mesh collider is added to the “meshTest”, which contains the generated mesh from script. This is also set to tag “meshTest”.



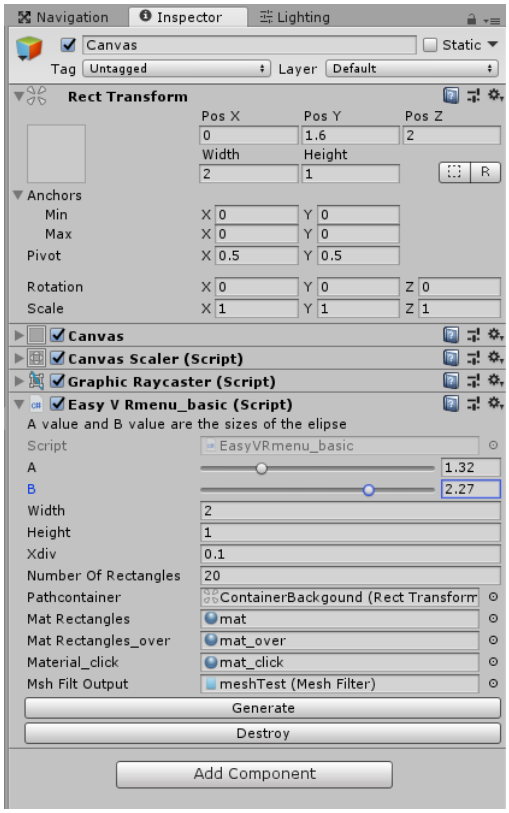
3.Scripting

The main script used in this asset is: “EasyVRmenu_basic.cs” which is described here:

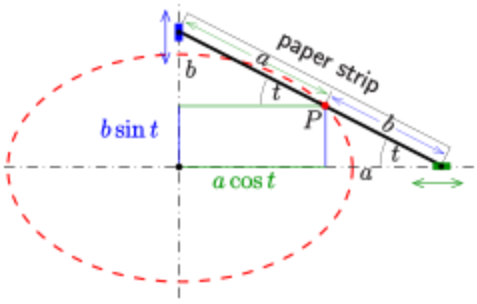
```
public void drawGeometry()
  {
      // scale the canvas to the size
      width = gameObject.GetComponent<RectTransform>().sizeDelta[0];
      height = gameObject.GetComponent<RectTransform>().sizeDelta[1];
```

```
        GameObject child;

        MeshFilter tempMeshF;
        MeshRenderer meshRender;

        Xdiv = (width / numberOfRectangles);

        Vector3[] points = new Vector3[numberOfRectangles];

        meshes = new Mesh[numberOfRectangles];
        CombineInstance[] TBC = new CombineInstance[meshes.Length];

        // top part of the geometry
        for (int ii = 0; ii < numberOfRectangles; ii++)
        {
            //creting the different rectangles
            child = new GameObject("DiffRect"+ii);
            child.transform.parent = pathcontainer;
            tempMeshF = child.gameObject.AddComponent<MeshFilter>();
            meshRender = child.gameObject.AddComponent<MeshRenderer>();
            meshRender.material = matRectangles;
            meshRender.enabled = false;

            // four points of the mesh
                float z1 = b / a * Mathf.Sqrt(Mathf.Pow(a, 2) - Mathf.Pow(ii *
Xdiv - width / 2, 2)) - b;
                float z2 = b / a * Mathf.Sqrt(Mathf.Pow(a, 2) - Mathf.Pow((ii +
1) * Xdiv - width / 2, 2)) - b;

            points[0] = transform.position+new Vector3(-width/2,-
height/2,0)+new Vector3(ii * Xdiv, 0,z1);
            points[1] = transform.position + new Vector3(-width / 2, -height /
2, 0) + new Vector3((ii+1) * Xdiv, 0, z2);
            points[3] = transform.position + new Vector3(-width / 2, height /
2, 0) + new Vector3((ii+1) * Xdiv, 0, z2);
            points[2] = transform.position + new Vector3(-width / 2, height /
2, 0) + new Vector3(ii * Xdiv, 0, z1);



            // create quads
            meshes[ii]= createGeometry(points[0], points[1], points[2],
points[3], tempMeshF, ii*Xdiv/2, (ii+1)*Xdiv/2);

            TBC[ii].mesh=meshes[ii];
            TBC[ii].transform = child.transform.localToWorldMatrix;

        }

        // combine quads
        Mesh meshOut = new Mesh();
        meshOut.CombineMeshes(TBC,true);

        mshFiltOutput.mesh = meshOut;
        mshFiltOutput.transform.GetComponent<MeshCollider>().sharedMesh =
meshOut;



        // the new object has the same events that the ones set on the initial
object
```

```
        //click event
        EventTrigger.Entry entry = new EventTrigger.Entry();
        entry.eventID = EventTriggerType.PointerClick;
        entry.callback.AddListener((eventData) => { MyFunction_CLICK
(mshFiltOutput.gameObject); });
        mshFiltOutput.GetComponent<EventTrigger>().triggers.Add(entry);

        //enter event
        entry = new EventTrigger.Entry();
        entry.eventID = EventTriggerType.PointerEnter;
        entry.callback.AddListener((eventData) => {
MyFunction_ENTER(mshFiltOutput.gameObject); });
        mshFiltOutput.GetComponent<EventTrigger>().triggers.Add(entry);

        //quit event
        entry = new EventTrigger.Entry();
        entry.eventID = EventTriggerType.PointerExit;
        entry.callback.AddListener((eventData) => {
MyFunction_EXIT(mshFiltOutput.gameObject); });
        mshFiltOutput.GetComponent<EventTrigger>().triggers.Add(entry);

    }
```

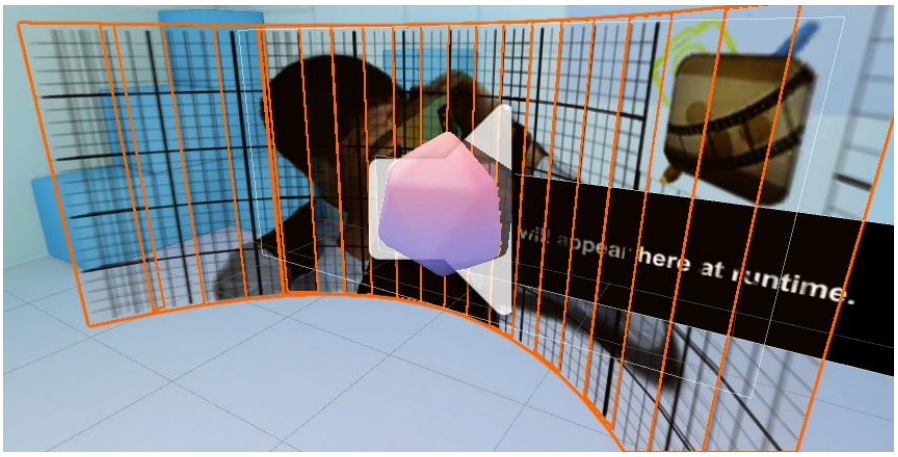


The script generates a curved surface that follows the expression of an ellipse with parameters a and b (main axis).



$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1,$$

The curved surface is generated by infinitesimal quads that are joined into a single mesh.



4. Video tutorial

We have a video tutorial explaining how the scripts and game mechanics works.

https://www.youtube.com/watch?v=ZBdrK2EA844