**Unity3D教程：抛物线的画法**

Posted on 2013年07月09日 by U3d / [Unity3D 基础教程](http://www.unitymanual.com/category/manual/unity3d-%e5%9f%ba%e7%a1%80%e6%95%99%e7%a8%8b)/被围观 55 次

抛物线公式y=a\*x\*x+b\*x+c;a>0,开口向上；a<0,开口向下。b=0,抛物线对称轴为y轴。c=0,抛物线经过原点。获取一些抛物线上的点，然后相邻的两点和原点画三角面，这样可以用三角面拼成了“抛物面”了，而且还可以通过修改a的值来改变小山峰的陡峭程度。下面来看看代码吧！

新建一个空的GameObject，然后绑定Parabola.js脚本就ok了。

Parabola.js：

|  |  |  |
| --- | --- | --- |
|  |  |  |

|  |  |
| --- | --- |
| 01 | **private** **var** a:**int**;*//a>0,开口向上；a<0,开口向下。* |
| 02 |  |
| 03 | **private** **var** b:**int**;*//b=0,抛物线对称轴为y轴* |
| 04 |  |
| 05 | **private** **var** c:**int**;*//c=0,抛物线经过原点* |
| 06 |  |
| 07 | **private** **var** size:**int**; |
| 08 |  |
| 09 | function Start () { |
| 10 |  |
| 11 | a=-1; |
| 12 |  |
| 13 | b=0; |
| 14 |  |
| 15 | c=0; |
| 16 |  |
| 17 | size=22; |
| 18 |  |
| 19 | gameObject.AddComponent("MeshFilter"); |
| 20 |  |
| 21 | gameObject.AddComponent("MeshRenderer"); |
| 22 |  |
| 23 | **var** mesh : Mesh = GetComponent(MeshFilter).mesh; |
| 24 |  |
| 25 | mesh.Clear(); |
| 26 |  |
| 27 | **var** v:Vector3[]=new Vector3[size]; |
| 28 |  |
| 29 | **var** v2:Vector2[]=new Vector2[size]; |
| 30 |  |
| 31 | **var** index:**int** []=new **int**[(size-2)\*3]; |
| 32 |  |
| 33 | **for**(**var** i:**int**=0;i<size;i++){ |
| 34 |  |
| 35 | **if**(i==0) |
| 36 | { |
| 37 | v[i]=Vector3(0,-1,0); |
| 38 |  |
| 39 | } |
| 40 | **else** |
| 41 | { |
| 42 | **var** x:**float**=(i-size/2)\*0.1; |
| 43 |  |
| 44 | v[i].x=x; |
| 45 |  |
| 46 | v[i].y=a\*x\*x+b\*x+c; |
| 47 |  |
| 48 | v[i].z=0; |
| 49 | } |
| 50 |  |
| 51 | **if**(i>1){ |
| 52 |  |
| 53 | index[3\*i-6]=0; |
| 54 |  |
| 55 | index[3\*i-5]=i-1; |
| 56 |  |
| 57 | index[3\*i-4]=i; |
| 58 | *//Unity3D教程手册：www.unitymanual.com* |
| 59 | } |
| 60 |  |
| 61 | print("v["+i+"]="+v[i]); |
| 62 | } |
| 63 |  |
| 64 | mesh.vertices = v; |
| 65 |  |
| 66 | mesh.uv = v2; |
| 67 |  |
| 68 | mesh.triangles = index; |
| 69 |  |
| 70 | **for**(**var** j:**int**=0;j<index.Length;j++){ |
| 71 |  |
| 72 | print(j+"=="+index[j]); |
| 73 | } |
| 74 |  |
| 75 | } |