**Getting Started - Chapter 3 - Extruding Polygons**

**@@启程-第三章-压制多边形@@**

**Building the Car**

**@@建造小车@@**

The car is going to be a very simple one. The body will be built using the *extrudePolygon* method. This is another shape that can be built using *MeshBuilder*. The outline of the shape is drawn in the XZ plane, with points in counter-clockwise order and the extrusion is in the Y direction. The origin for the polygon is the zero point on the bottom plane.

@@这将是一辆很简单的小车。车体将由“*挤出多边形*”方法构建。这是可以通过“*网格建造器*”构建的又一种形状，这种形状的轮廓绘制在XZ平面内，按照逆时针循序排列顶点，然后沿着y方向挤压而成（最简单的2d变3d！）。而最终多边形的原点将是底面中的第零个点。@@

The outline for the car consists of an array of vector3 points forming a horizontal base line, a quarter circle for the front, followed by a horizontal base line. The vertical back with be formed by the *extrudePolygon* method as it automatically joins the first and last point.

@@车的轮廓由一个以三元向量点为元素的数组组成，这些点将组成一条直线，在线的前端有一个四分之一圆（车头），再接着又是一条直线线。垂直的车尾将由“*挤出多边形*”方法生成，这个方法会自动闭合路径的首尾@@

//base车底

const outline = [

new BABYLON.Vector3(-0.3, 0, -0.1),

new BABYLON.Vector3(0.2, 0, -0.1),

]

//curved front弯曲的前部

for (let i = 0; i < 20; i++) {

outline.push(new BABYLON.Vector3(0.2 \* Math.cos(i \* Math.PI / 40), 0, 0.2 \* Math.sin(i \* Math.PI / 40) - 0.1));

}

//top 车顶

outline.push(new BABYLON.Vector3(0, 0, 0.1));

outline.push(new BABYLON.Vector3(-0.3, 0, 0.1));

（也就是这个样子：）



These and the depth to extrude along Y, give the shape for the car

@@然后是沿着Y方向的挤压深度，这就形成了车的形状@@

const car = BABYLON.MeshBuilder.ExtrudePolygon("car", {shape: outline, depth: 0.2});

Learning to Extrude

学习挤压方法

https://playground.babylonjs.com/#KDPAQ9#10

We form the wheel for the right back position from a cylinder and add it as a child to the car. Then make copies for the right front, left back and left front wheels. This time using *clone* rather than *createInstance* since we can clone a clone. When we clone a wheel its parent is made the parent of the clone.

@@接着我们在车体的右后位置用圆柱体网格生成一个轮子，然后把它添加为车体网格的子元素。然后建立这个轮子的复制体作为右前、左后和左前轮。这次我们使用“*克隆*”方法而不是“*建立实例*”方法，因为我们可以克隆一个克隆体。当我们克隆出一个轮子网格时，克隆体的父元素将自动设置为克隆来源的父元素。@@

const wheelRB = BABYLON.MeshBuilder.CreateCylinder("wheelRB", {diameter: 0.125, height: 0.05})

wheelRB.parent = car;

wheelRB.position.z = -0.1;

wheelRB.position.x = -0.2;

wheelRB.position.y = 0.035;

wheelRF = wheelRB.clone("wheelRF");

wheelRF.position.x = 0.1;

wheelLB = wheelRB.clone("wheelLB");

wheelLB.position.y = -0.2 - 0.035;

wheelLF = wheelRF.clone("wheelLF");

wheelLF.position.y = -0.2 - 0.035;

Extruding Wheels

挤压轮子（圆柱体可以看作一种特殊的挤压体）

https://playground.babylonjs.com/#KDPAQ9#11

Now we will make the car look a bit more like a car using some textures.

@@现在我们将使用一些纹理，让这个小车看起来更像小车。@@