Hexagon实现文档

1.首先新建项目按"Rendering a Triangle项目"配置好环境

注意事项：着色器的配置和WindowSDK的选择
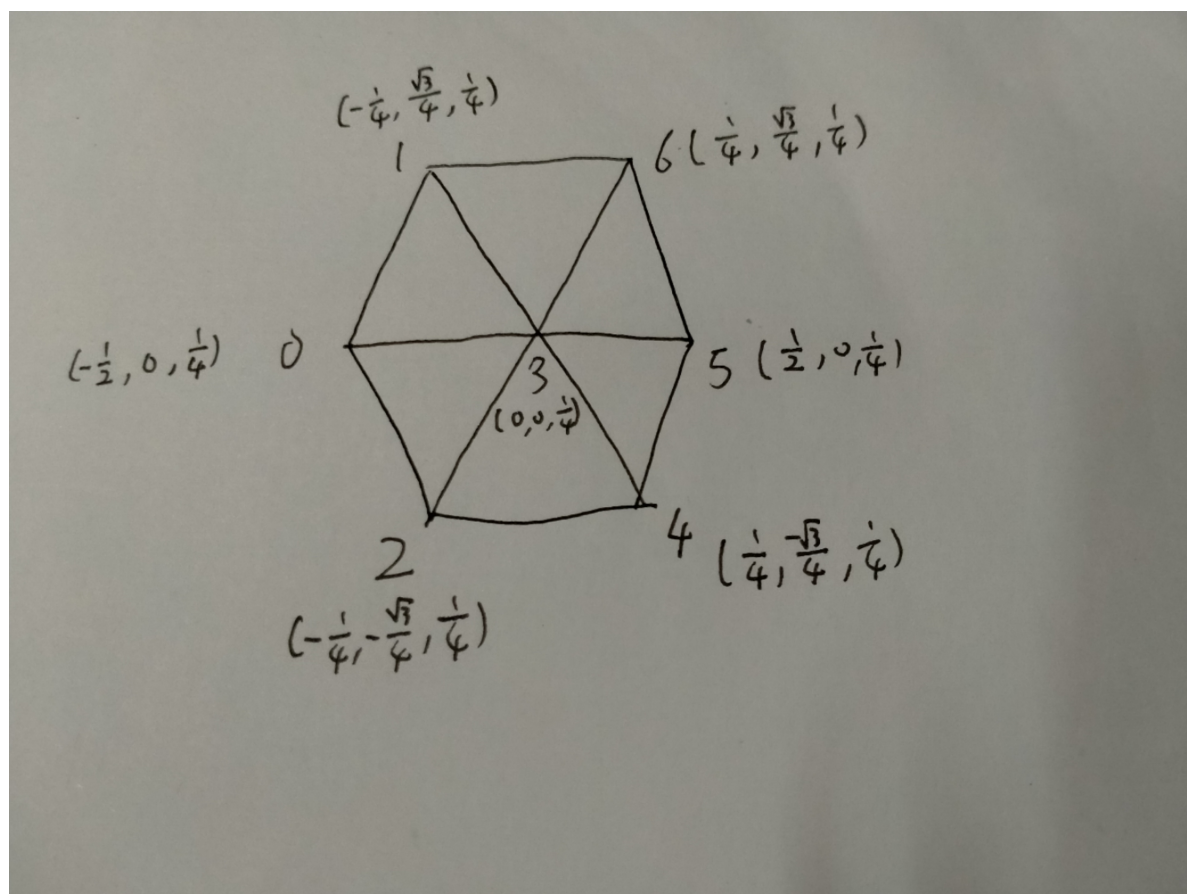
若没有对着色器进行配置会出现以下报错：

windowSDK不能选择默认的10.0，否则会出现以下报错：

2.按两种图元类型制订所需六边形的各点坐标以及排序方式(防止出现逆时针情况)

D3D11_PRIMITIVE_TOPOLOGY_TRIANGLELIST的实现方式为：

301 316 365 354 342 320

D3D11_PRIMITIVE_TOPOLOGY_TRIANGLESTRIP的实现方式为：

012345631

3.在项目中写下已制定好的顶点坐标，并修改图元类型以及绘画的顶点数

注意：在GameApp.cpp上实现

1.D3D11_PRIMITIVE_TOPOLOGY_TRIANGLELIST

在InitResource中设定顶点坐标：

```
VertexPosColor vertices[] =
    {
        { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
        { XMFLOAT3(-0.5f, 0.0f, 0.25f), XMFLOAT4(0.0f, 1.0f, 0.0f, 1.0f)},
        { XMFLOAT3(-0.25f, sqrt(3) * 0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f,
0.0f, 1.0f)},

        { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
        { XMFLOAT3(-0.25f, sqrt(3) * 0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f,
0.0f, 1.0f)},
        { XMFLOAT3(0.25f, sqrt(3) * 0.25f, 0.25f), XMFLOAT4(0.0f, 1.0f,
0.0f, 1.0f) },

        { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
        { XMFLOAT3(0.25f, sqrt(3) * 0.25f, 0.25f), XMFLOAT4(0.0f, 1.0f,
0.0f, 1.0f) },
        { XMFLOAT3(0.5f, 0.0f, 0.25f), XMFLOAT4(1.0f,0.0f, 0.0f, 1.0f) },

        { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
        { XMFLOAT3(0.5f, 0.0f, 0.25f), XMFLOAT4(1.0f,0.0f, 0.0f, 1.0f) },
        { XMFLOAT3(0.25f, -sqrt(3) * 0.25f, 0.25f), XMFLOAT4(0.0f, 1.0f,
0.0f, 1.0f) },

        { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
        { XMFLOAT3(0.25f, -sqrt(3) * 0.25f, 0.25f), XMFLOAT4(0.0f, 1.0f,
0.0f, 1.0f) },
        { XMFLOAT3(-0.25f, -sqrt(3) * 0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f,
0.0f, 1.0f) },

        { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
        { XMFLOAT3(-0.25f, -sqrt(3) * 0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f,
0.0f, 1.0f) },
        { XMFLOAT3(-0.5f, 0.0f, 0.25f), XMFLOAT4(0.0f, 1.0f, 0.0f, 1.0f)}
    };
```
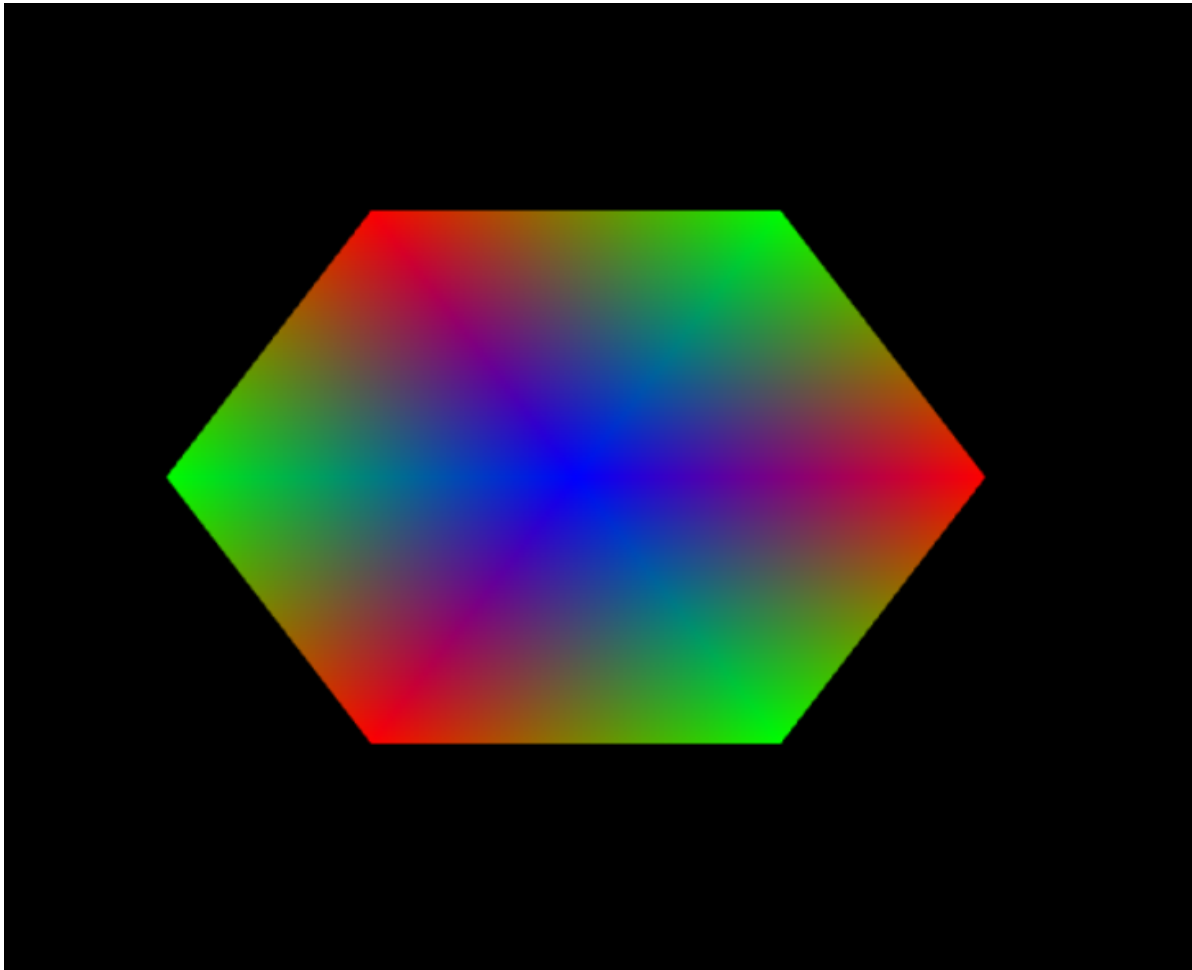
在DrawScene中：将绘制顶点数改为18

```
m_pd3dImmediateContext->Draw(18, 0);
```

在InitResource中：设置图元类型为D3D11_PRIMITIVE_TOPOLOGY_TRIANGLELIST

```
1  m_pd3dImmediateContext-
   >IASetPrimitiveTopology(D3D11_PRIMITIVE_TOPOLOGY_TRIANGLELIST);
```

实现六边形结果为:

2.D3D11_PRIMITIVE_TOPOLOGY_TRIANGLESTRIP

在InitResource中设定顶点坐标:

```
1   VertexPosColor vertices[] =
2       {
3           { XMFLOAT3(-0.5f, 0.0f, 0.25f), XMFLOAT4(0.0f, 1.0f, 0.0f, 1.0f)},
4           { XMFLOAT3(-0.25f, sqrt(3)*0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f, 0.0f,
    1.0f)},
5           { XMFLOAT3(-0.25f, -sqrt(3) * 0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f,
    0.0f, 1.0f) },
6           { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
7           { XMFLOAT3(0.25f, -sqrt(3) * 0.25f, 0.25f), XMFLOAT4(0.0f, 1.0f,
    0.0f, 1.0f) },
8           { XMFLOAT3(0.5f, 0.0f, 0.25f), XMFLOAT4(1.0f,0.0f, 0.0f, 1.0f) },
9           { XMFLOAT3(0.25f, sqrt(3) * 0.25f, 0.25f), XMFLOAT4(0.0f, 1.0f,
    0.0f, 1.0f) },
10          { XMFLOAT3(0.0f, 0.0f, 0.25f), XMFLOAT4(0.0f, 0.0f, 1.0f, 1.0f)},
11          { XMFLOAT3(-0.25f, sqrt(3) * 0.25f, 0.25f), XMFLOAT4(1.0f, 0.0f,
    0.0f, 1.0f)}
12      };
```

在DrawScene中：将绘制顶点数改为9

```
1 │ m_pd3dImmediateContext->Draw(9, 0);
```

在InitResource中：设置图元类型为D3D11_PRIMITIVE_TOPOLOGY_TRIANGLESTRIP

```
1 │ m_pd3dImmediateContext-
  │ >IASetPrimitiveTopology(D3D11_PRIMITIVE_TOPOLOGY_TRIANGLESTRIP);
```

实现六边形结果为：