Neeraj Appan

Game Programming
Practical 6 & 7

Aim: Diffuse, Lightening & loading models (image and fonts) into Direct 11 and rendering

Description

1) Custom Vert. Position Normal Colored() - Describes a Custom vertex format structure that contains position colour and normal data

2) Light Type - Light is a directional light

3) Font - Defines a particular format for text including font face, size and style attributes

4) Font Style - Specifies style information applied to text

5) Texture loader - Creates a texture from a file

6) Sprite flags - Define flags used to specify sprite rendering options

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help   Search (Ctrl+Q)   WindowsFormsApp6   Sign in

Debug - Any CPU - ▶ Start -   Live Share   ADMIN

Form1.cs* ⊕ × WindowsFormsApp6   Form1.cs [Design]*   Program.cs   Solution Explorer

WindowsFormsApp6   WindowsFormsApp6.Form1   device

```csharp
1   using System;
2   using System.Collections.Generic;
3   using System.ComponentModel;
4   using System.Data;
5   using System.Drawing;
6   using System.Text;
7   using System.Windows.Forms;
8   using Microsoft.DirectX;
9   //NEERAJ APPARI TY73
10  using Microsoft.DirectX.Direct3D;
11  namespace WindowsFormsApp6
12  {
        -references
13      public partial class Form1 : Form
14      {
15          Microsoft.DirectX.Direct3D.Device device;
16          CustomVertex.PositionNormalColored[] vertex = new CustomVertex.PositionNormalColored[3];
            -references
17          public Form1()
18          {
19              InitializeComponent();
20          }
            -references
21          private void Form1_Load(object sender, EventArgs e)
22          {
23              PresentParameters pp = new PresentParameters();
24              pp.Windowed = true;
25              pp.SwapEffect = SwapEffect.Discard;
26              device = new Device(0, DeviceType.Hardware, this, CreateFlags.HardwareVertexProcessing, pp);
27              device.Transform.Projection = Matrix.PerspectiveFovLH(3.14f / 4, device.Viewport.Width /
28              device.Viewport.Height, 1f, 1000f);
29              device.Transform.View = Matrix.LookAtLH(new Vector3(0, 0, 10), new Vector3(), new Vector3(0, 1, 0));
30              device.RenderState.Lighting = false;
31              vertex[0] = new CustomVertex.PositionNormalColored(new Vector3(0, 1, 1), new Vector3(1, 0, 1),
32              Color.Red.ToArgb());
33              vertex[1] = new CustomVertex.PositionNormalColored(new Vector3(-1, -1, 1), new Vector3(1, 0, 1),
```

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WindowsFormsApp6' (1 of 1 pr
  WindowsFormsApp6
    Properties
    References
      Analyzers
      Microsoft.DirectX
      Microsoft.DirectX.Direct3D
      Microsoft.DirectX.Direct3DX
      Microsoft.VisualC
      System
      System.Data
      System.Deployment
      System.Drawing
      System.Windows.Forms

Solution Explorer   Git Changes

Properties

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```csharp
22      {
23          PresentParameters pp = new PresentParameters();
24          pp.Windowed = true;
25          pp.SwapEffect = SwapEffect.Discard;
26          device = new Device(0, DeviceType.Hardware, this, CreateFlags.HardwareVertexProcessing, pp);
27          device.Transform.Projection = Matrix.PerspectiveFovLH(3.14f / 4, device.Viewport.Width /
28          device.Viewport.Height, 1f, 1000f);
29          device.Transform.View = Matrix.LookAtLH(new Vector3(0, 0, 10), new Vector3(), new Vector3(0, 1, 0));
30          device.RenderState.Lighting = false;
31          vertex[0] = new CustomVertex.PositionNormalColored(new Vector3(0, 1, 1), new Vector3(1, 0, 1),
32          Color.Red.ToArgb());
33          vertex[1] = new CustomVertex.PositionNormalColored(new Vector3(-1, -1, 1), new Vector3(1, 0, 1),
34          Color.Red.ToArgb());
35          vertex[2] = new CustomVertex.PositionNormalColored(new Vector3(1, -1, 1), new Vector3(-1, 0, 1),
36          Color.Red.ToArgb());
37          device.RenderState.Lighting = true;
38          device.Lights[0].Type = LightType.Directional;
39          device.Lights[0].Diffuse = Color.Plum;
40          device.Lights[0].Direction = new Vector3(0.8f, 0, -1);
41          device.Lights[0].Enabled = true;
42      }
            -references
43      private void Form1_Paint(object sender, PaintEventArgs e)
44
45      {
46          device.Clear(ClearFlags.Target, Color.CornflowerBlue, 1.0f, 0);
47          device.BeginScene();
48          device.VertexFormat = CustomVertex.PositionNormalColored.Format;
49          device.DrawUserPrimitives(PrimitiveType.TriangleList, vertex.Length / 3, vertex);
50          device.EndScene();
51          device.Present();
52      }
53      }
54  }
```

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.Windows.Forms;
using Microsoft.DirectX;

using Microsoft.DirectX.Direct3D;

namespace WindowsFormsApp7
{
    2 references
    public partial class Form1 : Form
    {
        Microsoft.DirectX.Direct3D.Device device;
        Microsoft.DirectX.Direct3D.Texture texture;
        Microsoft.DirectX.Direct3D.Font font;
        1 reference
        public Form1()
        {
            InitializeComponent();
            InitDevice();
            InitFont();
            LoadTexture();
        }
        1 reference
        private void InitFont()
        {
            System.Drawing.Font f = new System.Drawing.Font("Arial", 16f, FontStyle.Regular);
            font = new Microsoft.DirectX.Direct3D.Font(device, f);
        }

        1 reference
        private void LoadTexture()
```

Solution Explorer

Search Solution Explorer (Ctrl+;)

▲ References
  Analyzers
  Microsoft.DirectX
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  Microsoft.DirectX.Direct3DX
  Microsoft.VisualC
  System
  System.Data
  System.Deployment
  System.Drawing
  System.Windows.Forms
  System.Xml
  deaceNXy23NF8VsCrwZPgn-1200-
  ▶ Form1.cs

Solution Explorer   Git Changes

Properties

100 %   ⊘ No issues found   Ln: 34   Ch: 90   SPC   CRLF

Ready   Add to Source Control

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```csharp
33              {
34                  texture = TextureLoader.FromFile(device, "C:\\Users\\Administrator\\Desktop\\deaceNXy23NF8VsCrwZPgn-1200-80.jpg ", 400,
35          400, 1, 0, Format.A8B8G8R8, Pool.Managed, Filter.Point, Filter.Point, Color.Transparent.ToArgb());
36              }
                1 reference
37              private void InitDevice()
38              {
39                  PresentParameters pp = new PresentParameters();
40                  pp.Windowed = true;
41                  pp.SwapEffect = SwapEffect.Discard;
42                  device = new Device(0, DeviceType.Hardware, this, CreateFlags.HardwareVertexProcessing, pp);
43              }
                1 reference
44              private void Render()
45              {
46                  device.Clear(ClearFlags.Target, Color.CornflowerBlue, 0, 1);
47                  device.BeginScene();
48                  using (Sprite s = new Sprite(device))
49                  {
50                      s.Begin(SpriteFlags.AlphaBlend);
51                      s.Draw2D(texture, new Rectangle(0, 0, 0, 0), new Rectangle(0, 0, device.Viewport.Width,
52                      device.Viewport.Height), new Point(0, 0), 0f, new Point(0, 0), Color.White);
53                      font.DrawText(s,"NEERAJ APPARI TY73", new Point(0, 0), Color.Green);
54                      s.End();
55                  }
56                  device.EndScene();
57                  device.Present();
58              }
                1 reference
59              private void Form1_Paint(object sender, PaintEventArgs e)
60              {
61                  Render();
62              }
                1 reference
63              private void Form1_Load(object sender, EventArgs e)
64              {
```

Solution Explorer
References
    Analyzers
    Microsoft.DirectX
    Microsoft.DirectX.Direct3D
    Microsoft.DirectX.Direct3DX
    Microsoft.VisualC
    System
    System.Data
    System.Deployment
    System.Drawing
    System.Windows.Forms
    System.Xml
    deaceNXy23NF8VsCrwZPgn-1200-
    Form1.cs
Solution Explorer Git Changes
Properties