
Subject: Re: Is 'texture mapping' possible on Painter?

Posted by [mirek](#) on Tue, 04 Feb 2020 12:28:10 GMT

[View Forum Message](#) <> [Reply to Message](#)

```
#include <CtrlLib/CtrlLib.h>
```

```
#include <plugin/jpg/jpg.h>
```

```
using namespace Upp;
```

```
Xform2D MapTriangle(Pointf s1, Pointf s2, Pointf s3)
```

```
{ // maps 0,0 -> s3, 1,0 -> s1, 0,1 -> s2
```

```
  Xform2D s;
```

```
  s.x.x = s1.x - s3.x;
```

```
  s.y.x = s1.y - s3.y;
```

```
  s.x.y = s2.x - s3.x;
```

```
  s.y.y = s2.y - s3.y;
```

```
  s.t = s3;
```

```
  return s;
```

```
}
```

```
Xform2D MapTriangles(Pointf s1, Pointf s2, Pointf s3, Pointf t1, Pointf t2, Pointf t3)
```

```
{
```

```
  return Inverse(MapTriangle(s1, s2, s3)) * MapTriangle(t1, t2, t3);
```

```
}
```

```
struct MyApp : TopWindow {
```

```
  Image img;
```

```
  virtual void Paint(Draw& dw)
```

```
  {
```

```
    Size sz = GetSize();
```

```
    DrawPainter w(dw, sz);
```

```
    w.Co();
```

```
    w.DrawRect(sz, White());
```

```
    Pointf center = (Point)sz / 2;
```

```
    double radius = 0.95 * min(center.x, center.y);
```

```
    Size isz = img.GetSize();
```

```
    int steps = 200;
```

```
    for(double i = 0; i < steps; i++) {
```

```
      Pointf q = Polar(i * M_2PI / steps);
```

```
      Pointf p1 = radius * q + center;
```

```
      Pointf p2 = radius * Polar((i + 1) * M_2PI / steps + 0.4 / steps) + center;
```

```
      Xform2D m = Xform2D::Scale(Distance(p1, p2) * steps / isz.cx, radius / isz.cy);
```

```
      m = m * Xform2D::Rotation(Bearing(p2 - p1));
```

```

    Pointf h = p1 - i * isz.cx / steps * Orthogonal(q);
    m = m * Xform2D::Translation(h.x, h.y);

    double x1 = i * isz.cx / steps;
    double x2 = (i + 1) * isz.cx / steps;
    double xc = (x1 + x2) / 2;
    w.Move(center).Line(p1).Line(p2).Fill(img,
        MapTriangles(Pointf(xc, isz.cy), Pointf(x1, 0), Pointf(x2, 0),
            center, p1, p2));
}

w.Finish();
};

GUI_APP_MAIN
{
    MyApp app;
    app.img = StreamRaster::LoadFileAny("C:/xxx/aukro.jpg");
    app.Run();
}

```

(Adding MapTriangles as Xform2D static method...)
