Subject: problems drawing in Linux (ubuntu 7.10)
Posted by nixnixnix on Mon, 07 Apr 2008 18:58:45 GMT
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Hi,

I am seeing what appear to be errors in the way that upp under linux handles:
=> Alpha()
=> DrawPolyPolygon()

The alpha function appears to make everything transparent all the time.

The DrawPolyPolygon function appears to not split up the constituent polygons correctly.

Here is my polygon layer drawing function in case I'm doing something wrong but all this code works very nicely in Windows XP.

Nick

```
void PolygonLayer::DrawLayer(    Draw& w, // info regarding the screen or drawing context
                    ImageBuffer& ibBk, // image that should be updated by each layer
                    void* pView // pointer to the main top window object
                    )
{
   OpenWind* ptr = (OpenWind*)pView;

   Rect rc = ptr->MPtoLP(m_rc);

   int alpha = (int)(255.0*m_fAlpha + 0.5);

   //check to see if we need to draw at all
   if(ptr->GetClientRect().Intersects(rc))
   {
      if(ptr->DrawAsBackground(this))
      {

         Size sz = ptr->GetClientRect().Size();
         ImageDraw id(sz);
         id.DrawRect(sz,White);
         id.Alpha().DrawRect(sz,Black);

         // every time we draw this we need to convert from MP to LP so its ok to convert from
         // a friendly data structure to a not so friendly one at the same time

         Point* vertices = new Point[GetTotalPoints()];
         int* subpolygon_counts = new int[10000];
         Point pt;
```

```
        Color colFill = m_bFill ? m_colFill : Null;
        Color colOutline = m_bLine ? m_colLine : Null;
        Font font(m_fontLabel.GetFace(),(int)(m_fontLabel.GetHeight()*ptr->GetTextMultiplier()));

        for(int k=0;k<m_polys.GetCount();k++)
        {
           rc = ptr->MPtoLP(m_polys[k].m_rc);
           if(!rc.Intersects(ptr->GetClientRect()))
              continue; // i.e. dont draw this object - see if next one is in view

           int vertex_count = GetTotalPoints(k);
           int subpolygon_count_count = m_polys[k].m_loops.GetCount();
           int nWidth = m_nWidth;
           uint64 pattern = 0;
           int c=0;

           for(int i=0;i<subpolygon_count_count;i++)
           {
              const int num = m_polys[k].m_loops[i].GetCount();
              subpolygon_counts[i] = num;
              for(int j=0;j<num;j++)
              {
                 vertices[c++] = ptr->MPtoLP(m_polys[k].m_loops[i][j]);
              }
           }

           // draw
           id.DrawPolyPolygon(vertices, vertex_count, subpolygon_counts,
                              subpolygon_count_count, colFill, nWidth, colOutline, pattern);

           id.Alpha().DrawPolyPolygon(vertices, vertex_count, subpolygon_counts,
                              subpolygon_count_count, Color((m_bFill ? alpha : 0),0,0), nWidth,
Color((m_bLine ? alpha : 0),0,0), pattern);

           if(m_bLabel)
           {
              pt = ptr->MPtoLP(m_polys[k].m_ptCOG);
              String s;
              if(m_bLabelField)
              {
                 s = CUtils::EatSpace(m_polys[k].m_valAt[m_nLabelField].ToString());
              }
              else // use object index + 1
              {
                 s = Format("%d",k+1);
              }
              Size tsz = GetTextSize(s,font);
              id.DrawText(pt.x-tsz.cx/2,pt.y-tsz.cy/2,s,font,m_colLabel);
```

```
                id.Alpha().DrawText(pt.x-tsz.cx/2,pt.y-tsz.cy/2,s,font,Color(255,0,0));
            }
        }

        delete[] vertices;
        delete[] subpolygon_counts;

        Image ib(id);
        ImageDraw id2(sz);
        id2.DrawImage(0,0,sz.cx,sz.cy,ibBk);
        id2.DrawImage(0,0,ib);
        Image ib2(id2);
        ibBk = ib2;
    }
  }

  // always call the base class last
  Layer::DrawLayer(w,ibBk,ptr);
}
```

Subject: Re: problems drawing in Linux (ubuntu 7.10)
Posted by mirek on Wed, 16 Apr 2008 11:31:59 GMT
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OK, problem no 1. Alpha(): For some weird reason, "g" channel was used instead of r for alpha in X11.

You can easily fix it by using "GrayColor" instead....

Mirek

Subject: Re: problems drawing in Linux (ubuntu 7.10)
Posted by mirek on Wed, 16 Apr 2008 12:15:48 GMT
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Fix for the polygon problem:

```
static void DrawPolyPolyPolygonRaw(Draw& draw, const Point *vertices, int vertex_count,
 const int *subpolygon_counts, int subpolygon_count_count, const int *, int)
```

```
{
 DrawLock __;
 Point offset = draw.GetOffset();
 const Point *in = vertices;
 for(int i = 0; i < subpolygon_count_count; i++) {
  int n = subpolygon_counts[i];
  Buffer<XPoint> out_points(n);
  XPoint *t = out_points;
  XPoint *e = t + n;
  while(t < e) {
   t->x = (short)(in->x + offset.x);
   t->y = (short)(in->y + offset.y);
   t++;
   in++;
  }
  XFillPolygon(Xdisplay, draw.GetDrawable(), draw.GetGC(), out_points, n, Nonconvex,
CoordModeOrigin);
 }
}
```

Mirek

Subject: Re: problems drawing in Linux (ubuntu 7.10)
Posted by nixnixnix on Wed, 16 Apr 2008 16:19:09 GMT
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Hi Mirek,

The code above appears to just draw each subpolygon as a filled polygon with no reference to the other subpolygons. This means that complex polygons containing holes cannot be drawn correctly. Having searched for information on drawing complex polygons with X11 it seems there is no way to do this. The XFillPolygon documentation talks about complex polygon but gives no way to actually draw one.

Got to say, sometimes Linux makes MS Windows look disappointingly good.

Nick

EDIT: I wonder how slow it would be to fill the polygons myself using line-crossing and an odd-even fill rule. I'll try to make time to look into this.

Subject: Re: problems drawing in Linux (ubuntu 7.10)
Posted by mirek on Wed, 16 Apr 2008 17:38:13 GMT

nixnixnix wrote on Wed, 16 April 2008 12:19Hi Mirek,

The code above appears to just draw each subpolygon as a filled polygon with no reference to the other subpolygons. This means that complex polygons containing holes cannot be drawn correctly. Having searched for information on drawing complex polygons with X11 it seems there is no way to do this. The XFillPolygon documentation talks about complex polygon but gives no way to actually draw one.

Yes, unfortunately, it seems to be impossible to do directly in X11.

Mirek