
Subject: Qtf and drawing

Posted by [pivica](#) on Wed, 15 Feb 2006 19:55:38 GMT

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Here is situation. I have some input data and then some calculation and some output data. And on the end I generate some Qtf text and all is very nice and good looking:))

But now I want to generate some images, based on calculated data, and put them in qtf document. After some investigation in uppsrc I figure a way how to generate simple png image in qtf:

```
String GenerateQtfImage() const
{
    int w = 1;
    int dist = 400;
    const Point p1(0, 0);
    const Point p2(dist, 0);
    const Point p3(dist, dist);
    const Point p4(0, dist);

    Size simg(p3);
    DrawingDraw dw(simg);

    for(int i = 0; i < 10; i++)
        dw.DrawLine(dist/2, dist/2,
                    int(dist/2 + dist/2 * sin(i * M_PI / 10)),
                    int(dist/2 + dist/2 * cos(i * M_PI / 10)),
                    w, SLtGray);

    Size sz = dw.GetTextSize("DRAWING", Courier(dist/5).Italic());
    dw.DrawText((p2.x - sz.cx) / 2, (p3.y - sz.cy) / 2, "DRAWING", Courier(dist/5).Italic());

    int scale = 4;
    Image img (dist/scale, dist/scale, dw.GetResult(), SWhite());

    String qtfimg;
    {
        RichPara::CharFormat cformat;
        cformat.Face(Font::COURIER).Height(dist/20);

        // What's this for??
        /*Size size = dw.Dots() ? img.GetSize()
        : iscale(size, Size(DOTS_PER_METER_INT, DOTS_PER_METER_INT),
        GetPixelsPerMeter(draw));*/

        RichPara para;// rich paragraf

        para.Cat(RichObject("PNG",
```

```

        PngEncoder().SaveImage(img),
        img.GetSize()
    )
    , cformat);

    RichText rtext;
    rtext.Cat(para);
    qtfimg = BodyAsQTF(rtext);
}
return qtfimg;
}

```

Now this stuff is working, but is this a good way?

Also I have some problem with resolution when changing scale parameter. With 1 image is looking good, but when I raise scale (2,4,..) image is losing resolution.

What I need is to generate images for pie diagram and gauss distribution diagram. Maybe it's better to use Geom package for this?

One more question. There is DrawArc method for drawing arc, but how to fill arc with some color?

Subject: Re: Qtf and drawing
 Posted by [mirek](#) on Wed, 15 Feb 2006 21:11:16 GMT
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If it is fast enough for you then it is adequate way. Somewhat more straight approach would be to use

```
RichObject CreateDrawingObject(const Drawing& dwg, Size dot_size, Size out_size);
```

However, this is drawback that such QTF is not guaranteed to be compatible across platforms (PNG is).

If speed is absolute concern (rarely is), faster would be to generate RichText directly (without QTF), but I would really reserve that just for cases where it is absolutely necessary.

```
Image img (dist/scale, dist/scale, dw.GetResult(), SWhite());
```

- this line renders Drawing (vetor image) into raster Image, scaling it to the size established by first two parameters. No wonder that by increasing scale you are loosing the resolution.

Mirek

Subject: Re: Qtf and drawing
Posted by [mirek](#) on Sat, 18 Feb 2006 18:04:28 GMT
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Well, as the things were little bit too ugly, I have added direct solution for this problem:

QtRichObject solves problems when generating qtf by code and combining it with graphics.

It creates simple helper object that stores RichObject and converts itself to string (using ToString) with special QTF syntax that contains the value of the pointer to stored RichObject. QTFParse then picks the pointer...

This both greatly simplifies the client code AND reduces all the overhead needed to convert RichObject to QTF and back... The only thing to be careful about is that QtRichObject MUST exist by the time QTF is parsed (otherwise the pointer stored in QTF text would be dangling).

Demonstrated by QtfDrawing example:

```
GUI_APP_MAIN
{
    DrawingDraw dw(100, 100);
    dw.DrawRect(0, 0, 100, 100, White);
    dw.DrawEllipse(10, 10, 80, 80, Red, 5, Blue);
    dw.DrawRect(50, 50, 50, 50, Yellow);
    QtRichObject pict(CreateDrawingObject(dw.GetResult(), Size(500, 500), Size(500, 500)));
    String qtf;
    qtf << "[A6 This is some drawing in QTF: " << pict << "&";
    qtf << "[C3*@B And now in the table: {{1:1 " << pict << ":: Another cell " << pict << "}}";
    PromptOK(qtf);
}
```

Mirek
