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Subject: Draw/Paint speed slow  
Posted by [deep](#) on Sat, 16 Feb 2013 09:30:24 GMT  
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Hi,

I am making spirograph ( Epitrochoid/Hypotrochoid curves) drawing app. Paint derived from Examples/PainterExamples.

I have attached the project.

To draw spirograph with 12300 path points my routine take approximately 500 ms.

Want some suggestions to improve speed of draw.

I want to show animation like this

<http://en.wikipedia.org/wiki/File:EpitrochoidOn3-generation.gif>

Logged time data

Prepare S : 17183790  
Prepare E : 17183790

Time paint0 start : 17183806  
Time paint0 end : 17185335

Path points : 12313

Draw Image S : 17185335  
Draw Image E : 17185350

### File Attachments

1) [GeoFun.7z](#), downloaded 177 times

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Subject: Re: Draw/Paint speed slow  
Posted by [mirek](#) on Sat, 16 Feb 2013 18:47:56 GMT  
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Not sure what is your CPU, but mine 2.6Ghz Celeron does it in 25ms.

Do you benchmark it in Optimal mode? (For painter there is a HUGE difference...)

About optimizations:

The only thing that comes to mind is to combine all lines (or those possible with same width and

color) lines into single Stroke, something like (quick fix):

```
for(int i = 0; i < data.GetCount(); i++) {  
    Vector<Pointf>& p = data[i].point;  
    sw.Move(x1 + p[0].x, y1 + p[0].y);  
  
    cnt2 = p.GetCount();  
  
    for(int j = 1; j < p.GetCount(); j++)  
        sw.Line(x1 + p[j].x, y1 + p[j].y);  
  
    // if(data[i].filled) sw.Fill(data[i].color).EvenOdd(true);  
    }  
    sw.Stroke(data[0].penwidth, data[0].color);
```

Anyway, it appears to only improve speed by 10%...

Mirek

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Subject: Re: Draw/Paint speed slow  
Posted by [deep](#) on Sun, 17 Feb 2013 06:40:33 GMT  
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Mirek,

Thank you for response.

I have i7 1.73 Gz processor.

In my test case all lines are same width and color.

When compiled "Release->optimal" and "Release->optimised for speed" It is working much faster.  
I get about 40 ms time for same result.

1. Any hint on animation. For incremental Draw/Paint.
2. For filling the colors like in enclosed image. Hints on how to achieve it.

### File Attachments

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1) [fig1.png](#), downloaded 433 times

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Subject: Re: Draw/Paint speed slow

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Posted by [mirek](#) on Sun, 17 Feb 2013 08:12:28 GMT

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deep wrote on Sun, 17 February 2013 01:40Mirek,

Thank you for response.

I have i7 1.73 Gz processor.

In my test case all lines are same width and color.

When compiled "Release->optimal" and "Release->optimised for speed" It is working much faster. I get about 40 ms time for same result.

1. Any hint on animation. For incremental Draw/Paint.

examples/AnimatedHello

Quote:

2. For filling the colors like in enclosed image. Hints on how to achieve it.

Not sure, but perhaps draw it twice with different winding rule?

Mirek

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**Subject: Re: Draw/Paint speed slow**

Posted by [deep](#) on Sun, 17 Feb 2013 09:38:49 GMT

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Quote:Not sure, but perhaps draw it twice with different winding rule?

What is 'Winding rule'?

When I use fill sw.Fill(Blue()) it fills the total shape to outer boundary.

This is a single closed curve intersecting to self multiple times. Is there any way to find bounding curve and fill color like mspaint does.

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**Subject: Re: Draw/Paint speed slow**

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Posted by [mirek](#) on Sun, 17 Feb 2013 09:55:07 GMT

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Painter::EvenOdd, try with "true".

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Subject: Re: Draw/Paint speed slow

Posted by [deep](#) on Sun, 17 Feb 2013 10:09:09 GMT

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```
sw.Fill(Yellow()).EvenOdd(true);
```

Gives full fill with single color.

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Subject: Re: Draw/Paint speed slow

Posted by [mirek](#) on Sun, 24 Feb 2013 13:30:28 GMT

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```
sw.EvenOdd(true).Fill(Yellow());
```

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Subject: Re: Draw/Paint speed slow

Posted by [deep](#) on Mon, 25 Feb 2013 06:20:17 GMT

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Hi Mirek,

Thanks, It worked.

Sequence is important. First set EvenOdd and then Fill.

I checked with gradient Fill also.

Is there any method to specify even and odd colors?

In this sample image I drawn circle first with gradient and then Spirograph.

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### File Attachments

1) [Image1.png](#), downloaded 374 times

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