Subject: (SOLVED) ScatterCtrl, 2 questions.
Posted by rxantos on Tue, 20 Aug 2013 10:26:22 GMT

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Sorry for the big image. But is easier for me to explain.

The code I use for the example

```
#include <ScatterCtrl/ScatterCtrl.h>
using namespace Upp;

#define LAYOUTFILE <TestScatter/TestScatter.lay>
#include <CtrlCore/lay.h>

class TestScatter : public WithTestScatterLayout<TopWindow> {
public:
 enum {
  NPOINTS = 1000,
 };
 typedef TestScatter CLASSNAME;
 Vector<Pointf> points;
 TestScatter();
};

TestScatter::TestScatter()
{
 int x,y,yMax = 0;


 points.SetCount(NPOINTS);
 Pointf * pv = points.Begin();

 for(x = 0; x < NPOINTS; x++, pv++) {
  pv->x = (double)x;
  y = rand();
  if(yMax < y) {
   yMax = y;
  }
  pv->y = (double)(y);
 }

 sv.AddSeries(points).Legend("Y").Opacity(0.3).NoMark().Stroke(1);
 sv.SetFastViewX().SetSequentialX().SetDrawXReticle().SetDrawYReticle().SetSequentialXAll();
 sv.ShowInfo().ShowContextMenu().SetMouseHandling().SetMaxZoom(1000).SetMinZoom(10);
 sv.ShowHGrid(false).ShowVGrid(false).SetLabels("X","Y");
 sv.SetXYMin(0,0,0).SetRange(NPOINTS, yMax);
```

```
 sv.Refresh();

 Zoomable().Sizeable();
 CtrlLayout(*this, "Window title");
}

GUI_APP_MAIN
{
 TestScatter().Run();
}
```

The Layout is just

```
LAYOUT(TestScatterLayout, 368, 248)
 ITEM(ScatterCtrl, sv, HSizePosZ(28, 40).VSizePosZ(24, 24))
END_LAYOUT
```

The first problem (the one in which the points are not in the correct position) does not happen when the image is exported, only when its shown.

As for the 2nd problem. How I get a zoom out limited to the size of the data?

File Attachments
1) scatter.png, downloaded 726 times

Subject: Re: ScatterCtrl, 2 questions.
Posted by koldo on Fri, 23 Aug 2013 14:29:15 GMT
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Hello rxantos

To be sure of your questions:

- You want to programatically zoom the data just to fit data in X and Y axis
- You want to avoid that the user would over zoom out the data.

Subject: Re: ScatterCtrl, 2 questions.
Posted by rxantos on Fri, 23 Aug 2013 15:07:25 GMT
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Thanks for responding.

When the mouse wheel is used, the user can zoom in and out. I want to know how to I limit the zoom out so that the x range is never greater than the data range. In the x I just use 0,1,2,3, etc. Lets say its from 0 to 1,000. Right now if the user zooms out with the wheel, the range goes in the negative in one side and over 1,000 in the other. I want it so that it always stays at a maximum zoom out of 0 to 1000. while allowing a zoom in lets say 0 to 10,

The 2nd problem:

The Y data is not the random I show in the example, but it has the same problem. Sometimes the spikes in the data are skipped and the data seem clean when in reality there is a spike on an area. The problem does not happen when exporting a png from the control only when using the control. My guess is that for speed reason some of the data is skipped when rendering the control. Lets say the same data 0 to 1000 and there are 100 pixels. And point 7 is an 8, point 9 a 100 and point 10 a 10. Sometimes the spike (The 100) is not shown. And sometimes it is. I wonder if there is a setting to avoid this and make it always show the spike (a flag maybe).

Subject: Re: ScatterCtrl, 2 questions.
Posted by koldo on Fri, 23 Aug 2013 16:02:14 GMT
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Hello rxantos

factor. If y is -1, only x zoom is considered.". Is it enough for you?

- About the spikes, SetFastViewX() renders faster as it only takes a point per pixel column, so there is data that is discarded. However i am surprised that it does not work for you saving the control to a .png image. Could you confirm this? You can do it with a sv.SaveToFile(filename).

Subject: Re: ScatterCtrl, 2 questions.
Posted by rxantos on Sat, 24 Aug 2013 05:21:43 GMT
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Here is a screen shot of the control.

File Attachments
1) Screenshot - 8_24_2013 , 12_14_00 PM.png, downloaded 655 times

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Subject: Re: ScatterCtrl, 2 questions.
Posted by rxantos on Sat, 24 Aug 2013 05:24:22 GMT

And here is the resulting png. Look how in the result it has the spikes (what I need) and in the other it doesn't. I do not mind updating one second. But need to identify spikes.

Now that I think of it, it might be that the result is bigger in the png, thus less bars skipped.

Anyway, to keep things simple.

What would be the calls to:
- Disable bar skipping. Maybe enabling it while zooming and do a full render after the image is at the size the user one.

- Limiting the zoom out. If for example the data in x is 0 to 100, do not let the borders to be <0 or greater than 100.

```
File Attachments
1) test.png, downloaded 619 times
```

Subject: Re: ScatterCtrl, 2 questions.
Posted by rxantos on Sat, 24 Aug 2013 05:33:53 GMT

Just in case the sample code.

BTW: Thanks for taking time to respond.

```
File Attachments
1) TestScatter.zip, downloaded 516 times
```

Subject: Re: ScatterCtrl, 2 questions.
Posted by jerson on Sat, 24 Aug 2013 07:53:31 GMT

I found this .SetFastViewX() to be causing the behavior you describe.

Hope that helps

Subject: Re: ScatterCtrl, 2 questions.

Posted by rxantos on Sat, 24 Aug 2013 09:04:34 GMT

jerson wrote on Sat, 24 August 2013 03:53I found this .SetFastViewX() to be causing the behavior you describe.

Hope that helps
 A self inflicted problem. Sorry about that.
Thank you, that solved the missing spikes problem.

However the over zoom out one still present.

I tried

// NPOINTS = 1000 the number of points, where x = 0,1,2,...,999
sv.SetMaxZoom(NPOINTS, -1);

and still managed to get something like:

by using the mouse wheel.

File Attachments
1) Screenshot - 8_24_2013 , 03_51_20 PM.png, downloaded 643 times

Subject: Re: ScatterCtrl, 2 questions.
Posted by koldo on Sat, 24 Aug 2013 17:12:56 GMT

Hello rxantos

- About the spikes
You can see that when changing the window size. The bigger the window, the more spikes you can see. This is of course a limitation of SetFastViewX(): if data "jumps" too much, much information is lost.

- About the data range
Your use of SetMaxZoom(NPOINTS) is not right as it works with zoom factor instead of with data range.
To take care of this some new functions will be added tomorrow to set visible limits:
-- The minimum X and Y (X = 0 in your case)
-- The maximum X and Y (X = 1000 in your case)
-- The minimum X and Y ranges (X = 10 in your case)

-- The maximum X and Y ranges (X = 1000 in your case)

Subject: Re: ScatterCtrl, 2 questions.
Posted by rxantos on Sun, 25 Aug 2013 02:27:15 GMT
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Thank you.

Subject: Re: ScatterCtrl, 2 questions.
Posted by koldo on Mon, 26 Aug 2013 16:50:52 GMT
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Hello rxantos

Still working on it. I will try to upload it tomorrow.

Subject: Re: ScatterCtrl, 2 questions.
Posted by koldo on Thu, 29 Aug 2013 06:08:57 GMT
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Hello rxantos

It is done. Added and documented SetMinRange(), SetMaxRange(), SetMinXmin(), SetMinYmin(), SetMaxXmax(), SetMaxYmax().

To try to compensate the delay, the control now highlights when a limit in zoom or scroll is reached

You could put this in your code:
.SetMaxRange(1000).SetMinRange(10).SetMinXmin(0).SetMaxXmax(1000);

In addition instead of rand() there is a Random(dword max) to get a random number smaller than max.

My next comment was wrong   SetMaxZoom() == SetMaxRange(). It sets the visible data range.
Quote:Your use of SetMaxZoom(NPOINTS) is not right as it works with zoom factor instead of with data range.

Subject: Re: ScatterCtrl, 2 questions.
Posted by rxantos on Thu, 29 Aug 2013 08:48:43 GMT

Just tried and is now perfect. Thanks.

I have another question. When zooming the text in the X axis sometimes overlaps.

File Attachments
1) Screenshot - 8_29_2013 , 03_17_49 PM.png, downloaded 563 times

Subject: Re: ScatterCtrl, 2 questions.
Posted by koldo on Fri, 30 Aug 2013 06:18:26 GMT

Hello Rxantos

It is now solved.