Subject: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Tue, 07 Feb 2017 08:46:07 GMT
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Hi there,
I am experimenting with ScatterDraw/ScatterCtrl. I have the need to add some kind of "text box" in a scatter. This is because I need to explain why a graph all of sudden change its behaviour. To give you some context: the graph describes the speed of a production line; usually it is almost constant, but sometimes it drops because of a breakdown of some component on the line. Is there a way to add some kind of text box?
Thanks,
Giorgio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Wed, 08 Feb 2017 07:35:02 GMT
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Hi Giorgio

Do you want the text located in a specific point
- of the control (coordinates relative to the Control) or
- of the Scatter data (coordinates relative to the data plotted; if plot is scrolled or zoomed, text would be scrolled or zoomed too)

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Wed, 08 Feb 2017 08:20:25 GMT
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Hi Koldo,
the latter (text located in a specific point of the Scatter data; I was actually trying to overload the DoPaint function, but it is a little bit over my knowledge.
Regards,
Giorgio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Wed, 08 Feb 2017 10:34:15 GMT
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OK. I always wanted to implement an OnPaint() or WhenPaint() callback to let the user to paint things... now it is the opportunity :)

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Wed, 08 Feb 2017 11:02:40 GMT
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That's fantastic! And of course I will give any feedback / user testing required :d

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Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Fri, 10 Feb 2017 13:12:56 GMT
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An advance:

File Attachments
1) User paint.jpg, downloaded 691 times

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Fri, 10 Feb 2017 14:38:46 GMT
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Hi Koldo,
it seems really good, much beyond what I asked for; if you need some user testing just give me
the new library and I will be more than happy to test it.
Regards,
Giorgio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Fri, 10 Feb 2017 22:15:17 GMT
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Hi Giorgio

Sources are updated. ScatterCtrl demo includes tab17_UserPaint including it.
Provisional interface uses:
- GetPlotWidth(), GetPlotHeight() to get plot area size in pixels
- Pointf GetPosPrimary(double x, double y)
  double GetSizeX(double cx)
  double GetSizeYPrimary(double cy)
  Pointf GetPosSecondary(double x, double y)
  double GetSizeYSecondary(double cy)
to get positions and sizes from plot units to pixel units.

As I do not know how to use templates in callbacks, it is used instead this:
```
void OnPainter(Painter &w)  {OnPaint(w);}
void OnDraw(Draw &w)   {OnPaint(w);}

template <class T>
void OnPaint(T& w) {
...
 }
```
Advice is acknowledged.

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Wed, 17 May 2017 10:11:19 GMT

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Hi Koldo,
it took me ages to test it... the project was stopped and then it suddenly restarted some weeks ago.

A little bit of context: there is an application used on a couple production lines in the factory I work for. This application registers automatically (in a db) the speed of the production line: the line operate on cables and can treat x meters of cable per minute depending on the type of operation. The machinist, using another applications, enters in the db what is doing (setting up the machine, running the machine...) and what product-id he is working on. The goal is to put together all the information to have a report on the production of each shift. This is the result:

https://pasteboard.co/7jRIiP3B3.png

-Using the standard scatter function AddSeries() I draw the blue line (the speed);
-I created also the green, red yellow, bars (those bars says what the operator is doing: running setting up etc.) with AddSeries(), but with a little trick: it is a very thick line with just two points: the first is the begin of e.g running time, the second is the end;

Now comes in the new method OnPaint; with that method:
-I add a letter on the bars to explains what the bar represents (e.g. 'R' for running);
-I add the product-id that has been processed (e.g. 160997100A-60-2 represents a certain type of cable).

That works very well, the problems come when I print or scroll the report:

https://pasteboard.co/7jQzP6HMn.png
https://pasteboard.co/7jStsxNhI.png

When I scroll the report:
-The texts stay "fixed" while the graphs are resized

When I print the report:

-All the texts are very small;
-The bars have rounded edges.

I had a look at the code of the tab "User paint" of the ScatterCtrl_Demo and saw that using scaled font you do not have the same problem I have, so is just a matter of checking the code and understand how scaled font works.

So, the feedback is that the UserPaint callback provides all the needed functionality, it works as expected and has no bugs (consider that the application that generates the report has been used on a daily basis by a couple of users for about 3 weeks and they have not found any problem).

Thanks a lot for your effort!
Regards,
Gio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Wed, 17 May 2017 15:04:18 GMT
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Hello Gio

I am very happy that everything is going well.

When you say "when I print the report" do you mean when saving it to a file or when copying it to the clipboard?
Could you include more details about the problems?

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Wed, 17 May 2017 15:43:06 GMT
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In my class I have a method Preview (I think I copied it from the ScattrCtrl_demo) as follows:

```
void OeeReport::Preview()
{
 Report r;

 r.Landscape();
 Size pageSize = r.GetPageSize();
 Drawing drw = scOee.GetDrawing();
 r.DrawDrawing(0, 0, pageSize.cx, pageSize.cy, drw);

 Perform(r);
}
```

scOee is the ScatterCtrl in the graphical interface (the .lay file) where my report is.

Regards,
Gio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Fri, 19 May 2017 11:11:54 GMT
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Got the time to work a little bit on the project this morning and solved the problem related to the font dimension and the text that did not scroll when the graphic was scrolled.
The only thing I do not understand is why when the graph is inside the scatter control showed on screen, bars have "squared" edges, while when in print-preview the report bars have rounded edges.
The code to preview the report is almost identical to that used in the ScatterCtrl_demo.

Scatter Control
https://pasteboard.co/87VQcUcfo.png

Print preview
https://pasteboard.co/87XAZsL8V.png

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Thu, 25 May 2017 18:07:36 GMT
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Hello Giorgio

An update has been uploaded setting default Painter line caps. Please try it.

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Fri, 26 May 2017 12:45:25 GMT
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Hi Koldo,
thank you for you prompt support.

I have noticed something weird with this release.

This is the application compiled with the old version:

---

https://ibb.co/hjKz5v

This is the one with the the new version:

https://ibb.co/cuMJyF

A little background: to draw the big bars in the lower part of the screen I use this code

```
Vector<Pointf> b_temp = {};
b_temp << Pointf(t_in, posBarre) << Pointf(t_fine, posBarre);
barre.Add(b_temp);

...

for(int i = 0; i < barre.size(); i++){

  ...

  scOee.AddSeries(barre[i]).NoMark().Stroke(30, t_color).Dash(LINE_SOLID).Legend(AsString(i));
}
```

To draw the light green line I use the following code:

```
Vector<Pointf> v_media_temp = {};
v_media_temp << Pointf(t_in, lista_ml_l[i].QuestaMLav.v_media ) << Pointf(t_fine,
lista_ml_l[i].QuestaMLav.v_media);
vel_media.Add(v_media_temp);

...

for(int i = 0; i < vel_media.size(); i++)
{

  ...

  scOee.AddSeries(vel_media[i]).NoMark().Stroke(1,
LtGreen).Dash(LINE_SOLID).Legend("vm"+AsString(i));
}
```

The important thing here is that both the big bars and the light green line share the same x (t_in in my code). Thus, they are aligned. This is what happened with the old version, but with the new version they are no more aligned.

As far as regards, the report, I still get round edges:

https://ibb.co/gEXQdF

Regards,
Gio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Mon, 29 May 2017 10:45:26 GMT
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Dear Giorgio

The problem is that you use Painter to render the control, but Draw is used to render to the Clipboard and the plot legend.

In Windows, Draw uses GDI API, and it sets pen using U++ function SetDrawPen(), that calls CreatePen(). However, CreatePen() by default uses rounded caps (see this link).

To solve this, it would be necessary to review U++ drawing to use SetDrawPen() with PS_GEOMETRIC | PS_ENDCAP_SQUARE | PS_SOLID.

I think the easiest solution would be just to use OnPaint capability filling rectangles instead of 30 points thick lines.

If you would need a sample I can include something for you in Controls4U_demo.

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by Giorgio on Mon, 12 Jun 2017 09:52:06 GMT
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Hi Koldo,
thank you for your suggestion: I drew the bars inside OnPaint and finally I got squared edges.
Regards,
Gio

Subject: Re: Adding a text box in a scatterDraw/ScatterCtrl
Posted by koldo on Tue, 13 Jun 2017 07:51:35 GMT
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Excellent Giorgio :)