Subject: capture mouse and limit all events to window
Posted by slashupp on Tue, 17 Jan 2017 08:19:27 GMT
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I'm writing a little game and for it to be functional I need full control over the mouse.
I want to capture the mouse and contain it within a window regardless of how far the mouse is moved.
e.g.: if the mouse is moved far to the right I want to show the pointer as 'stuck' within the right edge
of the window but still responding to vertical movement; all mouse-events(move, clicks, wheel, etc) must
come to my window

how can I achieve this, SetCapture() does not work for this
how/should/can I implement a MouseHook to achieve this?

Also:
how can I set the mouse-pointer to a specific point within my window?
e.g.: if want to (based on some hotkey) place the mousepointer at the center of my window

Subject: Re: capture mouse and limit all events to window
Posted by slashupp on Fri, 20 Jan 2017 07:14:31 GMT
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I managed to achieve exclusive grab of mouse by modifying Ctrl:

In CtrlCore.h
    Added attribute:
    [1049]   bool bcaptureLock;

    Added parameters:
    [1050]   bool SetCapture(bool bLock=false);
    [1051]   bool ReleaseCapture(bool bUnlock=false);

In Ctrl.cpp (ctor)
    [596]   bcaptureLock=false;

In CtrlMouse.cpp (changed lines marked with: ///mais)
[301]
```
Image Ctrl::MEvent0(int e, Point p, int zd)
{
 GuiLock __;
 LLOG("MEvent0 " << Name() << " event: " << FormatIntHex(e, 0) << " point:" << p);
 Ptr<Ctrl> _this = this;
 mousepos = p;
 dword mm = 0;
 if((e & ACTION) == DOUBLE)
```

```
  mm |= K_MOUSEDOUBLE;
 if((e & ACTION) == TRIPLE)
  mm |= K_MOUSETRIPLE;

 if (bcaptureLock) return MouseEventH(e, p, zd, GetMouseFlags() | mm); ///mais...

 Rect view = GetView();
 if(mouseCtrl != this) {
        ...


[587]
Image Ctrl::DispatchMouseEvent(int e, Point p, int zd) {
 GuiLock __;
#if defined(flagWINGL) || defined(flagLINUXGL)
 if(!IsEnabled() && this != (Ctrl*) &infoPanel)
  return Image::Arrow();
#else
 if(!IsEnabled())
  return Image::Arrow();
#endif

 if(captureCtrl && captureCtrl->bcaptureLock) ///mais...
 {
  if (captureCtrl!=this) return captureCtrl->DispatchMouseEvent(e, p, zd);
  return captureCtrl->MEvent0(e, p, zd);
 }

 if(captureCtrl && captureCtrl != this && captureCtrl->IsMouseActive())
        ...


[618]
bool Ctrl::SetCapture(bool bLock) { ///mais...
 GuiLock __;
 ReleaseCtrlCapture();
 if(!GetTopCtrl()->SetWndCapture()) return false;
 captureCtrl = mouseCtrl = this;
 bcaptureLock=bLock; ///mais...
 return true;
}


[628]
bool Ctrl::ReleaseCapture(bool bUnlock) { ///mais...
 GuiLock __;
 if (bcaptureLock) bcaptureLock=!bUnlock; ///mais...
 return this == captureCtrl && ReleaseCtrlCapture();
```

```
}
```

```
[634]
bool Ctrl::ReleaseCtrlCapture() {
 GuiLock __;
 if (captureCtrl && captureCtrl->bcaptureLock) return false; ///mais...
 if(captureCtrl) {
  captureCtrl->CancelMode();
  Ctrl *w = captureCtrl->GetTopCtrl();
  captureCtrl = NULL;
  if(w->HasWndCapture()) {
   w->ReleaseWndCapture();
   return true;
  }
 }
 captureCtrl = NULL;
 return false;
}
```

All mouse events now goes to my control exclusively (for testing I use K_ESCAPE hotkey to release)

These changes 'should' not affect any other uses of the functions. - mirek, what say you?

I'm looking at 'XWarpPointer()' to force pointer to remain physically within my control's view-area (don't know what MSWindows would require)

Adding test-code:

File Attachments

1) main.cpp, downloaded 219 times

Subject: Re: capture mouse and limit all events to window
Posted by slashupp on Sun, 22 Jan 2017 12:02:57 GMT
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@mirek:

I made the above changes to my copy of upp-svn10672 and done make & make install and is using the resultant theide without problem - there shouldn't be. (In these changes I've replaced the phrase 'lock' with 'exclusive')

Would it be possible to make the changes part of the official source?

Subject: Re: capture mouse and limit all events to window
Posted by slashupp on Mon, 29 Apr 2019 07:16:26 GMT
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This applies to Linux-only.

To position the mouse-pointer anywhere in the window, or centered on a specific control in the window
I came up with this 'hack':

Header:

```
#ifndef _xfunc_h_
#define _xfunc_h_

#include <CtrlCore/CtrlCore.h>

namespace XFUNC
{

void set_Xmouse_pos(int x, int y);
void set_Xmouse_pos(Upp::Ctrl *pCtrl);

} //namespace XFUNC


#endif
```

Implementation:

```
#include "xfunc.h"

namespace XFUNC
{

#include <X11/Xlib.h>

void set_Xmouse_pos(int x, int y) //Ctrl *pCtrl)
{
 Upp::GuiLock __;
 static Display *disp=XOpenDisplay(0);
 if (disp)
```

```
 {
  Window wroot=XRootWindow(disp, 0);
  XWarpPointer(disp, 0, wroot, 0, 0, 0, 0, x, y);
  XFlush(disp);
 }
}

void set_Xmouse_pos(Upp::Ctrl *pCtrl)
{
 if (!pCtrl) return;
 Upp::GuiLock __;
 int x, y;
 Upp::Rect r=pCtrl->GetScreenRect();
 x=(r.left+r.Width()/2);
 y=(r.top+r.Height()/2);
 static Display *disp=XOpenDisplay(0);
 if (disp)
 {
  Window wroot=XRootWindow(disp, 0);
  XWarpPointer(disp, 0, wroot, 0, 0, 0, 0, x, y);
  XFlush(disp);
 }
}


} //namespace XFUNC
```

Hope this helps someone

Subject: Re: capture mouse and limit all events to window
Posted by mirek on Thu, 04 Jul 2019 09:06:49 GMT
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This should not be mixed with "capture" concept. It is already hard to make capture consistent across platforms (win/x11/macos) and this would add another level of complication.

What we need instead IMO is to encapsulate platform specific apis like warp.

Mirek
