
Subject: Re: An Interactively rotating 3D animation ?
Posted by [Rick Towler](#) on Mon, 09 Feb 2004 23:06:37 GMT
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"Erica Stanley" wrote in message...

> Currently, I am using XObjView to display a 3D icon (IDLgrPolygon) at
> different positions inside a volume. I take a snapshot of the icon at
> each position via XObjView_Write_Image and then stream the images
> together using XInterAnimate. The problem is I need this in the form
> of a 3D animation because I want the user to be able to interactively
> rotate the model as the icon is animating through the volume. Does
> anyone have some thoughts on how I might accomplish this?

You'll want to set up a timer event loop to animate your icon while still processing events from the user.

You might be able to do this with XOBJVIEW by using the REFRESH keyword and some creative event handling. An example is attached. The problem is that as written, XOBJVIEW isn't handling button events properly. You can select the zoom or pan tools but it still only rotates the model. Sorry, but you'll probably have to dig around in the XOBJVIEW objects to figure this out.

This would be easy to do in a custom built application. For example, David's simple_surface program could be modified to do this. Simply set a timer event on a widget that doesn't usually generate events (base or label) and in that widget's event handler move your icon and draw. One caveat, setting your timer events too close together will swamp IDL's event processing queue and inhibit user input.

If both smooth animation and user feedback are important, you'll have to set up a single timer based event loop and poll inside that loop for user input. The downside of this approach is that it isn't portable.

-Rick

; Semi-broken XOBJVIEW example

```
pro test_xobj_anim_event, event
```

```
    WIDGET_CONTROL, event.id, GET_UVALUE=info, /NO_COPY
```

```
    xPos = SIN(info.tick * !DTOR) * 4.
```

```
    zPos = COS(info.tick * !DTOR) * 4.
```

```
    info.oModel -> Reset
```

```

info.oModel -> Translate, xPos, 0 , zPos

XOBJVIEW, REFRESH=info.xObjTlb

info.tick=info.tick + 1L

WIDGET_CONTROL, event.id, SET_UVALUE=info, TIMER=0.02

end

pro test_xobj_anim_cleanup, tlb

    WIDGET_CONTROL, tlb, GET_UVALUE=info
    OBJ_DESTROY, info.oModel

end

pro test_xobj_anim

    oOrb = OBJ_NEW('orb', COLOR=[200,100,50], STYLE=1, $
        RADIUS=6)
    oModel = OBJ_NEW('IDLgrModel')
    oModel -> Add, oOrb

    XOBJVIEW, oModel, TLB=xObjTlb

    oOrb -> SetProperty, RADIUS=1

    wBase = WIDGET_BASE(MAP=0, GROUP_LEADER=xObjTlb, $
        EVENT_PRO='test_xobj_anim_event')

    info = {xObjTlb:xObjTlb, $
        tick:0L, $
        oModel:oModel $
    }
    WIDGET_CONTROL, wBase, /REALIZE
    WIDGET_CONTROL, wBase, SET_UVALUE=info, TIMER=0.02

    XMANAGER, 'test_xobj_anim', wBase, $
        CLEANUP='test_xobj_anim_cleanup'
end

```

Subject: Re: An Interactively rotating 3D animation ?
 Posted by [David Fanning](#) on Mon, 09 Feb 2004 23:57:24 GMT
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Rick Towler writes:

- > If both smooth animation and user feedback are important, you'll have to set
- > up a single timer based event loop and poll inside that loop for user input.
- > The downside of this approach is that it isn't portable.

Why wouldn't this be portable?

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: An Interactively rotating 3D animation ?
Posted by [Rick Towler](#) on Tue, 10 Feb 2004 00:42:33 GMT
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"David Fanning" wrote in message...

> Rick Towler writes:

>

>> If both smooth animation and user feedback are important, you'll have to set

>> up a single timer based event loop and poll inside that loop for user input.

>> The downside of this approach is that it isn't portable.

>

> Why wouldn't this be portable?

>

Well, I should have said "The only way I know how..." since I don't know how to actually poll for mouse input within IDL. The docs advise against using CURSOR in draw widgets and I have to admit I haven't tried it. Looking at the docs it looks like it blocks if you want button data which would eliminate it as a possible kludge in this case anyways. So we're back to capturing input via events, aren't we?

I'm sure there is a way of structuring an event-based application to provide smooth animation and user feedback but it is much more difficult than simply firing a timer event every n/th of a second then polling, updating and drawing. Which is why I wrote a DLM to poll for mouse, keyboard, and game device input in windows using directInput. But like I said, it isn't very portable.

-Rick

Subject: Re: An Interactively rotating 3D animation ?
Posted by [David Fanning](#) on Tue, 10 Feb 2004 02:47:23 GMT
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Rick Towler writes:

- > Well, I should have said "The only way I know how..." since I don't know
- > how to actually poll for mouse input within IDL. The docs advise against
- > using CURSOR in draw widgets and I have to admit I haven't tried it.
- > Looking at the docs it looks like it blocks if you want button data which
- > would eliminate it as a possible kludge in this case anyways. So we're back
- > to capturing input via events, aren't we?

I guess I thought you were talking about a "WHILE 1 DO" sort of event loop, ala CW_DEFROI, which appears to propagate its havoc everywhere in a device independent way. :-)

- > I'm sure there is a way of structuring an event-based application to provide
- > smooth animation and user feedback but it is much more difficult than simply
- > firing a timer event every n/th of a second then polling, updating and
- > drawing. Which is why I wrote a DLM to poll for mouse, keyboard, and game
- > device input in windows using directInput. But like I said, it isn't very
- > portable.

I'm not sure a DLM is necessary. I'm working on a fairly large medical imaging application that has a cine going pretty much all the time with a timer, and we don't have much trouble drawing ROIs in other widget windows, etc. I guess the key is getting through your event handlers in a timely fashion, but this really doesn't seem to be much of a problem on today's standard computers.

Object graphics can obviously be a bit slower, but even there, I don't think this would be particularly difficult.

Cheers,

David

--

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