
Subject: Re: Anatomic object graphic in IDL
Posted by [Rick Towler](#) on Mon, 25 Apr 2005 15:11:34 GMT
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Valentine wrote:

> I would like you to ask how to catch the coordinates of an object 3D
> in IDL when you mouse down in it. I have tried with the pickdata comand
> but it doesn't goes on.

Can you be more specific?

All objects contain their coordinates in one form or another. Using IDLgrWindow::Select allows you to get the reference of the object(s) that you click on and from there you can determine that object's position in world space.

If you need to know *where* on an object you select you will either have to break up your object into smaller pieces or roll your own ray->triangle intersection code.

-Rick

Subject: Re: Anatomic object graphic in IDL
Posted by [vaesgar](#) on Tue, 26 Apr 2005 12:31:15 GMT
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Ok, what I mean is to return the coordinates (or better, their indexes) of a polygon of a polygon-model. I mean, I want to know exactly which are the indexes (x,y,z) of the object when I push down in my model with the mouse. I have used the next code to get it, but it doesn't work. It only get me values that belong (I think) to the coordinates of the window.

```
oarray = self.ocontainer->get(/ALL)
  opolygon = oarray[N_ELEMENTS(oarray)-1]

oSel = self.oWindow -> Select(self.oTransparentView,[event.x,
event.y],UNITS=[3] ); returns object array
  IF Size(oSel, /TName) EQ 'opolygon' THEN BEGIN
    pick = self.oWindow-> PickData(self.oTransparentView,
osel,$
    [event.x, event.y], dataxyz,pick_status=tt)
```

Where oTransparentView is my View.

Thanks, again

Subject: Re: Anatomic object graphic in IDL
Posted by [Rick Towler](#) on Wed, 27 Apr 2005 16:21:21 GMT
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Valentine wrote:

- > Ok, what I mean is to return the
- > coordinates (or better, their indexes) of a polygon of a
- > polygon-model. I mean, I want to know exactly which are the indexes
- > (x,y,z) of the object when I push down in my model with the mouse.

There is no built in function in IDL to do this that I know of...

Off the top of my head you would need to select your object, cast a ray from your viewpoint thru that object, then perform triangle/ray intersection tests on that object's polys. Selection is built into IDL.

Polygon/ray intersection is well published on the web and there are many algorithms to choose from (Here is an excellent resource: <http://www.realtimerendering.com/int/> I've used the Haines ray/poly code with success. I like the Gems code since it is available online and it is straightforward C. Easy to drop into a dlm.)

But casting the ray will take a bit more work.

Using the view parameters, I would construct the view pyramid (far clip plane to viewpoint). Then when you click on your window, get the X,Y window coordinates of the mouse click. Assuming your view is projected onto the near plane, your near plane location will give you your Z. Then cast your ray from your viewpoint thru this X,Y,Z location. My guess is that your coordinates returned from PickData will be in screen coords but you should be able to calculate position on the projection plane by normalizing the screen coordinates.

This approach may not work and even if it does there probably is a better way to cast your ray. I got very little sleep last night since my son has been fighting a cold and was up all night crying so I am not thinking too clearly (It was like when he was a newborn.) But at any rate this should get you started. :)

-Rick

Subject: Re: Anatomic object graphic in IDL
Posted by [vaesgar](#) on Tue, 10 May 2005 14:02:14 GMT
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At first, many thanks for your information. I hope your son is better now, so you could better sleep.

I am now studying the address you gave me. But I still haven't found the solution.

Nevertheless, I am writing you to ask another question. Do you know how to reduce the size of the triangles in an Idl polygon mesh?

Thanks again,
Valentine
