Subject: Re: Need an "atom" object
Posted by Michael Werger on Thu, 01 Apr 1999 08:00:00 GMT
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David Fanning wrote:
>
> Hi Folks,
>
> I'm trying to save myself a bit of time and help out a friend
> at the same time. We are looking for some kind of "atom"
> object that would be a sphere with a particular color
> and radius. It might have its own light source associated
> with it. The idea would be to clump these atoms together
> into a rotatable "molecule", if you like.
>

Hy object'lers,

I re-arranged code from the recent IDL distribution and
put it in some way together what we would think of a simple
atom/molecule demo..

IDL> .run cristal
IDL> cristal

be warned: have the examples directories of IDL also in
your searchable path because it uses surf_track.pro (wonderful app)
and orb__define.pro

(Oh' it doesn't work? feedback is appreciated and I will then
return code which should work...)

--
Michael Werger ----------o
ESA ESTEC & Praesepe B.V. |
Astrophysics Division mwerger@astro.estec.esa.nl|
| Postbus 299 http://astro.estec.esa.nl |
| 2200 AG Noordwijk +31 71 565 3783 (Voice)
o---------- The Netherlands +31 71 565 4690 (FAX)

File Attachments

1) cristal.pro, downloaded 133 times

Subject: Re: Need an "atom" object
Posted by steinhh on Thu, 01 Apr 1999 08:00:00 GMT
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David Fanning wrote:

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> and radius. It might have its own light source associated
> with it. The idea would be to clump these atoms together
> into a rotatable "molecule", if you like.

I think Richard Adams' suggestion of using the "orb" data type would probably fill your needs, David, but just in case you'd like a small, quick'n dirty thing to build on, I made the following implementation of a "ball" object the other day.

Like the "orb" object, it's subclassed from the IDLgrModel class, and contains a polygon object. The surface is built up by a square array, equally spaced in [theta,phi] "space". Input radius r and number of points n.

The polygon vertex list forms a "quad strip" to take advantage of polygon mesh optimization.

I see the "orb" class has an inherent "position", personally I like to implement this through a translation of the "ball" model itself.

Regars,

Stein Vidar

```
PRO ball::cleanup
  self->idlgrmodel::cleanup
END


FUNCTION ball::init,r,n,color=color

  if n_elements(color) eq 0 then color=[255,255,255]

  dummy = self->idlgrmodel::init()

  x = rebin(reform(findgen(n)/n,n,1,/overwrite),n,n,/sample)
  y = rebin(reform(findgen(n)/(n-1),1,n,/overwrite),n,n,/sample)
```

```
  theta = x*(360.0*!dtor)
  phi = (y-0.5)*(180.0*!dtor)

  sinphi = sin(phi)
  cosphi = cos(temporary(phi))

  costheta = cos(theta)
  sintheta = sin(temporary(theta))

  xp = r* temporary(costheta)*cosphi
  yp = r* temporary(sintheta)*temporary(cosphi)
  zp = r* temporary(sinphi)

  gons = lindgen(5,n*(n-1))

  FOR yi=0,n-2 DO BEGIN
    yyi = [yi,yi,yi+1,yi+1]
    FOR xi=0,n-1 DO BEGIN
      xxi = [xi,(xi+1) MOD n,(xi+1) MOD n,xi]
      gons(0,yi*n+xi) = [4,xxi + yyi*n]
    END
  END
  stop

  xp = reform(xp,n*n,/overwrite)
  yp = reform(yp,n*n,/overwrite)
  zp = reform(zp,n*n,/overwrite)

  ball = obj_new('idlgrpolygon',xp,yp,zp,polygons=gons,color=color)

  self->add,ball
  self->translate,100,0,2*r
  return,1
END

PRO ball__define
  dummy = {BALL,$
          INHERITS idlgrmodel $
         }
END
```

Subject: Re: Need an "atom" object
Posted by Richard J Adams on Thu, 01 Apr 1999 08:00:00 GMT
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Dear David,

I have used the 'orb' class that comes with the IDL distribution - I think it is with the planet example. I don't remember that it has its own lamp. However,once you get a few hundred of these, animation get a bit slow on my poor Mac :-(

Richard.

--
Richard J Adams richard.adams@physiol.ox.ac.uk
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University Laboratory of Physiology F: + 44 1865 272469
Parks Road
Oxford OX1 3PT
UK

In article <MPG.116c07a333e3cd2b98973e@news.frii.com>, davidf@dfanning.com (David Fanning) wrote:

> Hi Folks,
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> at the same time. We are looking for some kind of "atom"
> object that would be a sphere with a particular color
> and radius. It might have its own light source associated
> with it. The idea would be to clump these atoms together
> into a rotatable "molecule", if you like.
>
> I believe I know how to make such a thing, but I'm
> busy getting ready for an IDL class and would prefer to
> spend my evenings doing other things. :-)
>
> Any help would be greatly appreciated.
>
> Cheers,
>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting
> Phone: 970-221-0438 E-Mail: davidf@dfanning.com
> Coyote's Guide to IDL Programming: http://www.dfanning.com/
> Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Need an "atom" object
Posted by rmlongfield on Fri, 02 Apr 1999 08:00:00 GMT
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In article <37036F0B.2ABBE82F@astro.estec.esa.nl>,
  Michael Werger <mwerger@astro.estec.esa.nl> wrote:

> Hy object'lers,
>
> I re-arranged code from the recent IDL distribution and
> put it in some way together what we would think of a simple
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> (Oh' it doesn't work? feedback is appreciated and I will then
> return code which should work...)

Hi Michael,
 Just tried your program and it works on a Silicon Graphics with IDL5.2
(Once I realized that the name was cristal and not crystal :-).
The code looks very simple and its almost tempting to start learing objects.
I found just one problem when I pressed the right button:

% Tag name WLABEL is undefined for structure <Anonymous>.
% Execution halted at: CRISTAL_EVENT   91
/usr/people/dlhopols/IDL/crystal.pro
%   WIDGET_PROCESS_EVENTS
% $MAIN$

Also, after the error, I couldn't delete the widget at all and had to exit
IDL. Is there a command that would do this from within IDL?

Rose