Subject: Re: Finding a points inside polygon
Posted by James Kuyper on Thu, 24 Oct 2002 15:17:32 GMT
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James Kuyper wrote:
>
> Gunho Sohn wrote:
>>
>> Dear All,
>>
>> I have a problem to determine whether a point (x,y) is inside the polygon.
>> Simply I've used IDLanROI::ContainsPoints method in my code. However, it
>> seems to make a serious problem. Please, check this problem together. I used
>> following polygons and point
>>
>> polygon vertices (vx,vy):
>> vx=[35.859278 55.591451 155.00000 155.00000]
>> vy=[0.00000000 0.00000000 19.279154 23.105984]
>>
>> point (x,y):
>> x=122.87897 y=13.049367
>>
>> When I simply coded this as follows, it printes as 0 which means this point
>> is located outside of polygon. But, it is not!

By the way, the range of values you were using made me wonder - by any chance are those values geographic latitudes and longitudes? In that case, you have to be very careful about how you define your polygon edges. Each map projection constitutes a different definition of what it means to be a "straight line". The most natural definition is that the edges are great circle arcs. In that case, to see the boundaries of your polygon properly, you need to use the gnomonic projection, because it's the only one that maps all great circle arcs as straight lines. Try the following:

```
IDL>  map_set,21.0,92.0,/gnomic,/continents,/grid,/label,scale=2e8
IDL> oplot,vx,vy
```

That will give you the overview of the problem. To get down to the details, use:

```
IDL>  map_set,13.049367,122.87897,/gnomic,/hires,/grid,/label,scal e=2e7
IDL> oplot,vx,vy
IDL> plots,122.87897,13.049367, psym=2
```

So, if these are latitude-longitude values connected by great circle arcs, the specified point is not merely outside the polygon, it's hundreds of miles outside the polygon.