
Subject: Re: Arc of a circle

Posted by [Craig Markwardt](#) on Wed, 21 Apr 2010 03:01:06 GMT

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On Apr 20, 9:16 pm, Fred <fedef...@gmail.com> wrote:

> Hello! simple question: does anybody know how to draw an arc of a
> circle in plot. A circle can be easily created, knowing the center
> coordinates and radius, through the routine "tvcircle". What I am
> missing is how to create a simple arc subtending an arbitrary angle.

Are you familiar with cosines and sines? The set of points X, Y

$$X = X0 + R * \cos(TH)$$
$$Y = Y0 + R * \sin(TH)$$

where TH is an array spanning 0 to 2*!DPI, is a circle centered on (X0,Y0).

If you choose a smaller span of angles, then you will get a circular arc instead of a full circle.

Craig

Subject: Re: Arc of a circle

Posted by [jeanh](#) on Wed, 21 Apr 2010 17:24:59 GMT

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On 20/04/2010 9:16 PM, Fred wrote:

> Hello! simple question: does anybody know how to draw an arc of a
> circle in plot. A circle can be easily created, knowing the center
> coordinates and radius, through the routine "tvcircle". What I am
> missing is how to create a simple arc subtending an arbitrary angle.
> Thanks!
> Fred

Hi Fred,

here is a function I have that does basically what Craig just described.
This function makes a pie (connects the arc to the center point), so
feel free to remove the 1st and last point to remove this part.

Jean

```
function pie, x_center, y_center, radius, angle_base, angle_arc, radian =  
radian
```

```
;return a 2*102 array providing the coordinates of a pie. (straight  
line from the center to the beginning of the
```

```

; arc, the arc, straight line from the end of the line to the center
point.)
;The user can draw the pie as lines or as a polygon
;
;example:
; POLYFILL, pie(0,0,10,45,90)
; PLOTS, pie(0,0,10,45,90)

;INPUTS:
; X_center, Y_center: the coordinates of the center of the pie
; radius: the radius of the pie
; angle_base: arc of the pie will start to be drawn at this angle
; angle_arc: the other end of the arc will be at "angle_arc" degree
COUNTERclockwise from the begining of the arc
;
;KEYWORD:
; radian: set if the anles are specified in Radian. Default is Degree
;
;AUTHOR: Jean-Gabriel Hasbani jean-gabriel@.....hasbani.....ca
(remove the dots)
;      March 2008

if n_elements(angle_arc) eq 0 then return,-1

angle_base_PIE = 1.0 * angle_base
angle_arc_PIE = 1.0 * angle_arc

if ~keyword_set(radian) then begin
angle_base_PIE = angle_base_PIE * !DtoR
angle_arc_PIE = angle_arc_PIE * !DtoR
endif

;get 100 points defining the arc
arc_points = ((angle_arc_PIE / 99.0) * FINDGEN(100))+angle_base_PIE
arc_x = x_center + radius * COS(arc_points)
arc_y = y_center + radius * SIN(arc_points)

;Add a straigth line from the center to the start and end points of the arc
x = [x_center, arc_x, x_center]
y = [y_center, arc_y, y_center]

arc_x = 0B
arc_y = 0B

;Create a 2 * 102 array of coordinates
pts = TRANSPOSE([x],[y])

RETURN, pts

```

end
