Subject: AVALANCHE.PRO .... games in IDL FTW
Posted by munka on Mon, 14 Dec 2009 08:04:19 GMT
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If you have ever needed to plot a whole bunch of things, you may of put a plot command in a for/while loop. If you forgot to put something like wait,1 in your loop, you might have gotten something that looks like an animation almost. I noticed this, and this "animation" in combination with the cursor function, you can make some sweet games... like avalanche. I got bored and wrote out this game in IDL (It's less than 200 lines!)

I realize there is some crappy programming going on in this program, but oh well! I've only known of IDL (or programming for that matter) for less than 3 years. (I'm an undergrad in physics/astronomy)

Stuff like
for i=0,maxenemies-1,1 do Xenemypos[i]=0.0
instead of:
Xenemypos=replicate(0.0,maxenemies)
and the use of goto statements..... :O
But don't worry about that....

So, I don't really have any questions. I'm just here to share the wealth and show y'all this program. I have a better game written with the same... "engine"..... but I've been adding comments to it, because it is a bit more complicated. I'll post that on here a probably sometime later this week. If you have questions or comments, feel free to email me at billfreeman44 [at] yahoo.com. I don't check my gmail very often.

Also, all this was possible because of Dr. Fanning's amazingly helpful website ;)

Enjoy!
~Bill

(and if you look closely, you might even be able to cheat! :D )

```
pro avalanche
;VARIABLES
difficulty=1 ;set by user in game (see into game screen)
levelnum=1
maxnumlevels=50
usersizex=.5
usersizey=.5
maxenemies=1001
enemypsym=2
```

```
thetime=long(0)
thekey='string'
ans='string'
Xenemypos=fltarr(maxenemies)
Yenemypos=fltarr(maxenemies)
Yenemyvel=fltarr(maxenemies)
Tenemytim=fltarr(maxenemies)
for i=0,maxenemies-1,1 do Xenemypos[i]=0.0
for i=0,maxenemies-1,1 do Yenemypos[i]=0.0
for i=0,maxenemies-1,1 do Yenemyvel[i]=1./10*RANDOMU(S, 1)
for i=0,maxenemies-1,1 do Tenemytim[i]=0.0
enemynum=0
thetime=long(1)

;INTRO GAME SCREEN
 plot,[0,100],[0,100],/nodata
 xyouts,50,60, "AVALANCHE",alignment=.5,charsize=3.5
 xyouts,50,50, "click a difficulty to begin",alignment=.5,charsize=2.5
 xyouts,50,45, "hit p to pause (while playing)",alignment=.
5,charsize=2
 xyouts,50,40, "hit any key to EXIT (while playing)",alignment=.
5,charsize=1
 xyouts,25,25, "EASY",alignment=.5,charsize=1
 xyouts,50,25, "MEDIUM",alignment=.5,charsize=1
 xyouts,75,25, "HARD",alignment=.5,charsize=1

;GET DIFFICULTY
 cursor,xpos,ypos,/up
 if abs(xpos-25) lt abs(xpos-50) and abs(xpos-25) lt abs(xpos-75) then
difficulty=1
 if abs(xpos-50) lt abs(xpos-25) and abs(xpos-50) lt abs(xpos-75) then
difficulty=2
 if abs(xpos-75) lt abs(xpos-25) and abs(xpos-75) lt abs(xpos-50) then
difficulty=3
 plot,[0,100],[0,100],/nodata
 if difficulty eq 1 then xyouts,50,50, "EASY",charsize=2
 if difficulty eq 2 then xyouts,50,50, "MEDIUM",charsize=2
 if difficulty eq 3 then xyouts,50,50, "HARD",charsize=2
 WAIT,1

while levelnum lt maxnumlevels do begin

levelstart:
;LEVEL VARIABLES...
 levellength=long(320);length of level in frames
 diffnum=100.;fix(35+levelnum*1.5+difficulty*2);percent chance of
enemy spawn
```

```
;LEVEL BEGIN
 for thetime=long(0),long(levellength),1 do begin

;DRAW LEVEL
  plot,[0,100],[0,100],/nodata,xminor=1,yminor=1,xmargin=[0,0] ,ymargin=
[0,0],ticklen=0,xticks=1,yticks=1

;DRAW SCORE
 xyouts,2,98, "score = "+strcompress(string(fix(((levelnum+float
(thetime)/float(levellength))*1000.-1000.)*difficulty)))

;INTRO TO EACH LEVEL..
 if thetime lt 32 then begin
  xyouts,50,70, "Beginning level "+strcompress(string(levelnum),/
remove_all),alignment=.5
  xyouts,50,65, "This will last "$
  +strcompress(string(fix(levellength)/32),/remove_all)+"
seconds",alignment=.5
  xyouts,50,60, "Enemies/sec= "+strcompress(string(diffnum*
(32.0/100.0)),/remove_all),alignment=.5
 endif

;DRAW USER...
 cursor,xpos,ypos,/nowait
 ;CHECK IF USER OUT OF RANGE.
 IF xpos lt usersizex then xpos=usersizex
 IF xpos gt 100-usersizex then xpos=100.-usersizex
 IF ypos lt usersizey then ypos=usersizey
 IF ypos gt 100.-usersizey then ypos=100.-usersizey
 oplot,[xpos-usersizex,xpos-usersizex,xpos+usersizex,xpos
+usersizex,xpos-usersizex],$
       [ypos-usersizey,ypos+usersizey,ypos+usersizey,ypos-
usersizey,ypos-usersizey],linestyle=0

;DRAW ENEMIES...
 index=WHERE(Tenemytim ge 1)
 check=size(index)
 if check[0] ne 0 then begin
 oplot,Xenemypos[index],Yenemypos[index],psym=enemypsym
 endif

;CHECK FOR PAUSE...
 input=get_kbrd(0)
 if input ne "" then thekey=input
 if thekey eq '.' then goto,hax
 if thekey ne 'string' then begin
  if thekey ne 'p' then begin
```

```
   print, "EXITING."
   plot,indgen(100),indgen(100)
   goto, theend
   endif
  print,'paused.. enter to continue, or type exit to exit.'
  read,ans
  if ans eq 'exit' then goto, theend
  thekey='string'
  endif

;CHECK FOR HIT...
 if thekey eq '.' then goto,hax
 hittest=WHERE((Xenemypos gt xpos-usersizex and Xenemypos lt xpos
+usersizex) $
                and (Yenemypos gt ypos-usersizey and Yenemypos lt
ypos+usersizey))
 check=size(hittest)
 if check[0] ne 0 then begin
  oplot,indgen(100),indgen(100),linestyle=difficulty
  print, "HIT!"
  PRINT, "YOU FAIL..."
  print, "Total score = ",fix(((levelnum+float(thetime)/float
(levellength))*1000.-1000.)*difficulty)
  goto, theend
 endif
 hax:

;WAIT
 wait,0.03125;32 fps

;RECALCULATE ENEMY LOCATION...
 index=where(Tenemytim ge 1)
 check=size(index)
 if check[0] ne 0 then begin
  Xenemypos[index]=Xenemypos[index]
   Yenemypos[index]=Yenemypos[index]+Yenemyvel[index]-difficult y/3.0
  Tenemytim[index]=Tenemytim[index]+1
 endif

;GENERATE NEW ENEMIES...
 rn1=FIX(levelnum*difficulty*RANDOMU(S, 1))
 while rn1 le levelnum*difficulty do begin
  enemynum++
  if enemynum ge maxenemies-1 then enemynum=0
  newvel=  fix(RANDOMU(S, 1)*32.0)/32.0+levelnum/maxnumlevels
  newpos=FIX(100*RANDOMU(S, 1))
  Tenemytim[enemynum]=1
  Xenemypos[enemynum]=newpos
```

```
  Yenemypos[enemynum]=100.0
  Yenemyvel[enemynum]=newvel*(-1)
 rn1++
 endwhile

;DELETE OLD ENEMIES
 del=WHERE(Yenemypos gt 101 or Yenemypos lt -1)
 check=size(del)
 if check[0] ne 0 then begin
  Xenemypos[del]=0.0
  yenemypos[del]=0.0
  yenemyvel[del]=0.0
  Tenemytim[del]=0
 endif

;LEVEL END
endfor

;END OF LEVEL CHANGES
 usersizex=usersizex+.1*difficulty
 usersizey=usersizey+.1*difficulty
 levelnum++
endwhile

print, "you win!"
theend:
print, "END OF PROGRAM."
end
```