
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
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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

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;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(Tenemytime 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

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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] - difficulty 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

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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
```
