Archived:How to develop brick-breaker game in PySymbian - Part 1

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The article is believed to be still valid for the original topic scope.

Brick-Breaker is a simple arcade game where the player moves a paddle on the screen and bounces a ball towards bricks at the top of the screen. When the ball hits a brick it breaks and the ball bounces back - the objective of the game is to destroy all the bricks. This is the first article explaining the PySymbian implementation of Brick-Breaker - it covers the different slider functions in detail.

Development tools

02 Aug 2009

1. Text editor - notepad is sufficient.
2. PySymbian - preferred version: PySymbian 1.4.5 stable release
3. PySymbian script shell - preferred version: PySymbian 1.4.5 stable release

The PySymbian tools can be downloaded from Sourceforge resources.

The following modules are used when developing this application:

- appuifw module
- sysinfo module
- graphics module
- e32 module
- key_codes module
- random module
- math module
- time module

Functions

The following functions are used in Brick Breaker game.

1. **`draw_screen`**: draw black screen in canvas.
2. **`draw_slider`**: draw slider.
3. **`leftkey`**: control the slider by left key.
4. **`rightkey`**: control the slider by right key.
5. **`draw_bricks`**: draw number of bricks.
6. **`erase_bricks`**: erase bricks.

Initializing slider parameter

Before discussing, any functions in detail - let us define some of the slider parameters.

```
#SLIDER PARAMETERS#####

SliderX1=120
SliderY1=305
SliderX2=160
SliderY2=315
SliderSpeed=22

SliderColor=RED
```


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```
import sysinfo
TotalScreenWidth=sysinfo.display_pixels()[1]
```

draw_screen()

By using this function, We create a black screen in canvas. The definition of the draw_screen() is as follows:

```
#defining draw function
def draw_screen():
       #Set the screen to full
       appuifw.app.screen = 'full'

       #Global variable for application UI
       global canvas
       canvas = appuifw.Canvas(redraw_callback=handle_redraw)
       appuifw.app.body = canvas
       appuifw.app.exit_key_handler = quit

       #Global variable for application UI
       global img
       img = graphics.Image.new(canvas.size)

       #Clear the image
       img.clear(BLACK)
       handle_redraw(None)
```

draw_slider()

By using this function, we create a slider in canvas using keyboard shortcuts. The definition of the draw_screen() is as follows:

```
#defining slider function
def draw_slider():
 global canvas

 #Keyboard shortcuts
 canvas.bind(key_codes.EKeyLeftArrow,lambda:  leftkey())
 canvas.bind(key_codes.EKeyRightArrow,lambda: rightkey())
 appuifw.app.body = canvas
 appuifw.app.exit_key_handler = quit

       #draw the rectangle
 img.rectangle((SliderX1,SliderY1,SliderX2,SliderY2),fill=SliderColor)
 handle_redraw(None)
```

leftkey()

The leftkey() is called from the draw_slider() function. By using this function, we can move the slider to left side by pressing left key. Thus, the code of leftkey() function is as follows:

```
#defining leftkey function
def leftkey():
 if (SliderX1>0):
```

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```
                #draw the rectangle
   img.rectangle((SliderX1, SliderY1, SliderX2, SliderY2),fill=BLACK)

                #globally define variables
   global img, canvas,SliderX1, SliderY1, SliderX2, SliderY2

                #defining the slider coordinate X1 and X2
   SliderX1=SliderX1-SliderSpeed
   SliderX2=SliderX2-SliderSpeed
   img.rectangle((SliderX1, SliderY1, SliderX2, SliderY2),fill=SliderColor)

         #appuifw.note(u"Left arrow was pressed")
   handle_redraw(None)
```

rightkey()

The rightkey() is called from the draw_slider() function. By using this function, we can move the slider to right side by pressing right key. Thus the code of rightkey() function is as follows:

```
#defining right key function
def rightkey():
 if (SliderX2<TotalScreenWidth):
 #if (SliderX2<sysinfo.display_pixels()[1]):
                #draw rectangle
   img.rectangle((SliderX1, SliderY1, SliderX2, SliderY2),fill=BLACK)

                #globally define variables
   global img, canvas,SliderX1, SliderY1, SliderX2, SliderY2

               #defining the slider coordinate X1 and X2
  SliderX1=SliderX1+SliderSpeed
  SliderX2=SliderX2+SliderSpeed
  img.rectangle((SliderX1, SliderY1, SliderX2, SliderY2),fill=SliderColor)

  #appuifw.note(u"Left arrow was pressed")
   handle_redraw(None)
```

That finishes the slider functions (Part 1) for the Brick-Breaker Game.

The next article in the series : Part 2 for brick-Breaker, would cover Brick functions for this game.

Screenshots

These screenshots demonstrate the Slider and its movable position on canvas. The screenshots are relevant only to Part 1.

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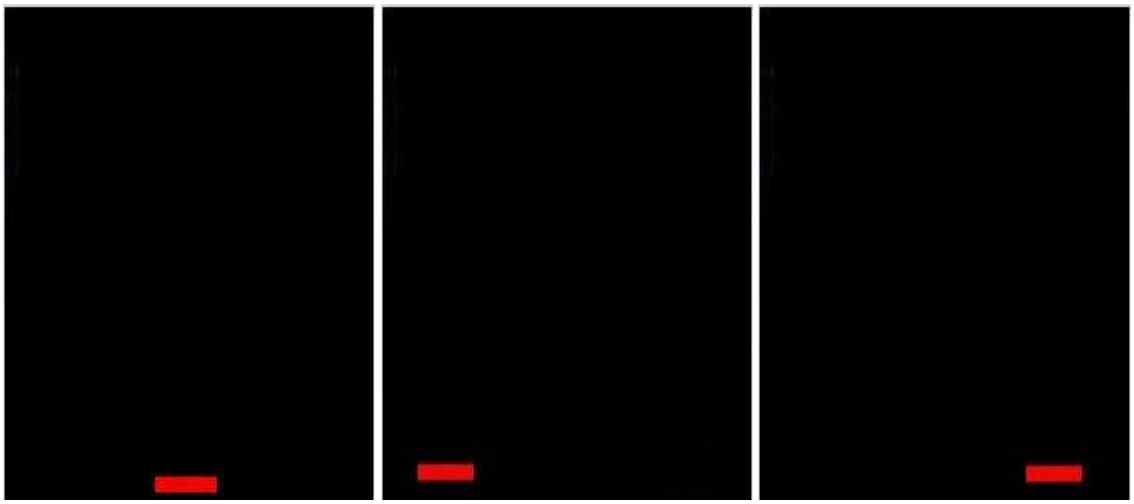

Related Links

- How to develop brick-breaker game in PySymbian - Part 2
- How to develop brick-breaker game in PySymbian - Part 3
- Introduction to PySymbian

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