

Single glyph button example using touchgui

```
#!/usr/bin/env python3

import pygame, touchgui, touchguipalate, touchguiconf, math, os
from pygame.locals import *

# display_width, display_height = 1920, 1080
display_width, display_height = 800, 600
display_width, display_height = 1920, 1080
full_screen = False
full_screen = True
toggle_delay = 250
```

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```
def event_test (event):  
    if (event.type == KEYDOWN) and (event.key == K_ESCAPE):  
        myquit (None)  
  
def myquit (name = None, tap = 1):  
    print ("quit called")  
    pygame.display.update () # need this to see the button pressed before we quit  
    pygame.time.delay (toggle_delay * 2) # delay program so we see the button change  
    pygame.quit () # now shutdown pygame  
    quit () # and shutdown python  
  
def myreturn (name, tap):  
    print ("return called")
```

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- the function `myquit` is a callback which is called when the off button is pressed
 - both parameters are optional
 - a single parameter is allowed and then `tap` will be assigned to 1

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```
def imagedir (name):  
    return os.path.join (touchguiconf.touchguidir, name)  
  
def button_list (name):  
    return [touchgui.image_gui (imagedir ("images/PNG/White/2x/%s.png") \  
        % (name)).white2grey (.5),  
            touchgui.image_gui (imagedir ("images/PNG/White/2x/%s.png") \  
        % (name)).white2grey (.1),  
            touchgui.image_gui (imagedir ("images/PNG/White/2x/%s.png") \  
        % (name)),  
            touchgui.image_gui (imagedir ("images/PNG/White/2x/%s.png") \  
        % (name)).white2rgb (.1, .2, .4)]
```

note the \ is a line continuation character

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- `button_list` is a function which returns a list of four images
- the four images in order represent the four states
 - frozen, active, activated or pressed state
- `button_list` takes a single white image and produces four images
 - darkgrey using `white2grey (.5)` representing frozen
 - lightgrey using `white2grey (.1)` representing active
 - brilliant white representing activated
 - dark blue `white2rgb (.1, .2, .4)` representing pressed

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```
#  
# buttons - create two buttons and return them as a list.  
#  
def buttons ():  
    return [touchgui.image_tile (button_list ("power"),  
                                touchgui.posX (0.95), touchgui.posY (1.0),  
                                100, 100, myquit),  
           touchgui.image_tile (button_list ("return"),  
                                touchgui.posX (0.0), touchgui.posY (1.0),  
                                100, 100, myreturn)]
```

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```
def main ():
    pygame.init ()
    if full_screen:
        gameDisplay = pygame.display.set_mode ((display_width, display_height), \
                                                FULLSCREEN)
    else:
        gameDisplay = pygame.display.set_mode ((display_width, display_height))

    pygame.display.set_caption ("Simple Test")
    touchgui.set_display (gameDisplay, display_width, display_height)

    forms = buttons ()
    gameDisplay.fill (touchguipalate.black)
    touchgui.select (forms, event_test)

main ()
```

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- `touchgui.select` can take 2 parameters (it can also take more - in future weeks this will be covered)
- the second parameter allows you to test pygame events
- the first parameter is a list of buttons on the touch device
 - only buttons in this list can be activated (mouse over) and/or tapped

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- `touchgui.image_tile` takes 6 parameters
 - `button_list` is the list of the four state images
 - `touchgui.posX` and `touchgui.posY` converts a floating point value in the range `0.0..1.0` onto the X or Y resolution of the screen (or window)
 - parameters 4 and 5 are the x and y image size
 - parameter 6 is the call back if tapped or double tapped