RASPBERRY PI ASSEMBLY

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#Girls Who Build
#Raspberry Pi Camera
#by Kristen Railey 04/17/16

#Picamera python resource: https://www.raspberrypi.org/documentation/
usage/camera/python/README.md
import picamera #Import picamera library
import RPi.GPIO as GPIO #Import general input/outputs on Raspberry pi
import time
from time import sleep
import pygame

#Set up buttons
GPIO.setmode(GPIO.BCM)
GPIO.setup(17,GPIO.IN,pull_up_down=GPIO.PUD_UP) #Set up button input on
pin 17
#Button is a pull-up resistor https://learn.sparkfun.com/tutorials/pull-up-
resistors
GPIO.setup(22,GPIO.IN,pull_up_down=GPIO.PUD_UP) #Set up button input on
pin 17

#LCD Screen setup
WIDTH=256 #160-320
HEIGHT=160 #128-256

#Camera initialization
camera=picamera.PiCamera()
pygame.init()
screen=pygame.display.set_mode((WIDTH,HEIGHT))
camera.start_preview()

count=1
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```python
while True: #Checking if button has been pressed
    button_unpressed=GPIO.input(17) #Normally the button is unpressed
    button_unpressed_camera=GPIO.input(22) #Normally the button is unpressed

    #For displaying the image on the lcd screen
    camera.capture('image.jpg')
    img=pygame.image.load('image.jpg')
    img=pygame.transform.scale(img,(WIDTH,HEIGHT))
    screen.blit(img,(0,0))
    pygame.display.flip()
  #If button is pressed, take a picture
  if button_unpressed==False:
      print ('Button Pressed')

      #Camera settings http://picamera.readthedocs.io/en/release-1.10/api_camera.html
      camera.sharpness = 0
      camera.contrast = 0
      camera.brightness = 50
      camera.saturation = 0
      camera.ISO = 0
      camera.video_stabilization = False
      camera.exposure_compensation = 0
      camera.exposure_mode = 'auto'
      camera.meter_mode = 'average'
      camera.awb_mode = 'auto'
      camera.image_effect = 'none' #Choose 'oilpant', 'sketch','cartoon'
      camera.color_effects = None
      camera.rotation = 0
      camera.hflip = False
      camera.vflip = False
      camera.crop = (0.0, 0.0, 1.0, 1.0)
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      #Save picture
      camera.capture('image'+repr(count)+'.jpg')
#       sleep(5) #in seconds
#       count=count+1
#       camera.capture('imageA'+repr(count)+'.jpg')
#     sleep(5)
#       count=count+1
#       camera.capture('imageA'+repr(count)+'.jpg')
       #Overlay text
       text="Took a Selfie!"
      FONTSIZE=30
      font=pygame.font.Font(None,FONTSIZE)
      font_surf=font.render(text,True,pygame.Color(255,255,0))
      font_rect=font_surf.get_rect()
      font_rect.left=30
      font_rect.top=30
      screen.blit(font_surf,font_rect)
      pygame.display.update()
      count+=1

  #Turn off camera
    if button_unpressed_camera==False:
      pygame.quit()
```

Resource: Girls Who Build Cameras
Kristen Railey, Bob Schulein, Olivia Glennon, Leslie Watkins, Alex Lorman, Carol Carveth, and Sara James