from RPIO import PWM

import RPi.GPIO as GPIO

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import RPi.GPIO as GPIO

import time

from time import sleep

from subprocess import call

print"ok"

GPIO.setmode(GPIO.BCM)

GPIO.setup(19,GPIO.OUT)

GPIO.setup(26,GPIO.OUT)

GPIO.setup(16,GPIO.OUT)

GPIO.setup(20,GPIO.OUT)

GPIO.setup(21,GPIO.IN)

GPIO.setup(8,GPIO.OUT)

GPIO.setup(27,GPIO.OUT)

GPIO.setup(9,GPIO.OUT)

TRIG=18

ECHO=17

print"controls"

print"1: move forward"

print"2: move reverse"

print"3: stop robot"

print"4: take picture with user defined name"

print"5: move forward with speed control"

print"6: Rotate the Robot"

print"7: Turn the Robot"

print"8: for servo control please"

print"11 : welcome to autonomous control"

print"press enter to send command"

def takestillpic(inp):

print" please enter photo character"

inp = raw\_input()

call ( ["raspistill -vf -hf -o " + str(inp) + ".jpg" ],shell=True )

def fwd():

GPIO.output(19,True)

GPIO.output(26,False)

GPIO.output(16,True)

GPIO.output(20,False)

def rev():

GPIO.output(19,False)

GPIO.output(26,True)

GPIO.output(16,False)

GPIO.output(20,True)

def stop():

GPIO.output(19,False)

GPIO.output(26,False)

GPIO.output(16,False)

GPIO.output(20,False)

def distmeas():

print" Distance measurement in progress"

GPIO.setup(TRIG,GPIO.OUT)

GPIO.setup(ECHO,GPIO.IN)

GPIO.output(TRIG,False)

print" waiting for sensor to settle please"

time.sleep(2)

GPIO.output(TRIG,True)

time.sleep(0.00001)

GPIO.output(TRIG,False)

while GPIO.input(ECHO)==0:

pulse\_start=time.time()

while GPIO.input(ECHO)==1:

pulse\_end=time.time()

pulse\_duration = pulse\_end - pulse\_start

distance = pulse\_duration \* 17150

distance = round(distance,2)

print " Distance ", distance, "cm"

if distance < 50 :

GPIO.output(19,False)

GPIO.output(26,False)

GPIO.output(16,False)

GPIO.output(20,False)

time.sleep(1)

print " robot stopped as distance is less"

print " Now Robot going Backward"

GPIO.output(19,False)

GPIO.output(26,True)

GPIO.output(16,False)

GPIO.output(20,True)

time.sleep(1)

GPIO.output(19,False)

GPIO.output(26,False)

GPIO.output(16,False)

GPIO.output(20,False)

TLr()

time.sleep(4)

fwd()

distmeas()

else:

distmeas()

def TL():

GPIO.output(19,True)

GPIO.output(26,False)

GPIO.output(16,False)

GPIO.output(20,False)

def TLr():

GPIO.output(19,True)

GPIO.output(26,False)

time.sleep(0.75)

GPIO.output(19,False)

GPIO.output(26,False)

while True:

inp= raw\_input()

if inp =="1":

fwd()

print"robot moving in fwd direction"

elif inp =="2":

rev()

print"robot moving in rev direction"

elif inp=="3":

stop()

print"robot stopped"

elif inp =="4":

takestillpic(inp)

print " photo please"

elif inp =="5":

GPIO.output(7,False)

GPIO.output(8,False)

elif inp =="6":

TL()

elif inp =="7":

TLr()

elif inp =="8":

servo = PWM.Servo()

servo.set\_servo(27,1000)

time.sleep(2)

servo.stop\_servo(27)

elif inp =="9":

servo = PWM.Servo()

servo.set\_servo(27,1500)

time.sleep(2)

servo.stop\_servo(27)

elif inp =="10":

servo = PWM.Servo()

servo.set\_servo(27,2000)

time.sleep(2)

servo.stop\_servo(27)

elif inp == "11":

fwd()

distmeas()

GPIO.cleanup()