#**AUTOMATED SMART BIN MANAGEMENT SYSTEM USING HCSR04 DISTANCE SENSOR**

#Libraries

import RPi.GPIO as GPIO

import time

#set up components

GPIO.setwarnings(False)

GPIO.setmode(GPIO.BCM) #using broadcom pin system GPIO

TRIG=23

ECHO=24

#Program Logic

while True:

GPIO.setup(TRIG,GPIO.OUT)

GPIO.setup(ECHO,GPIO.IN)

GPIO.output(TRIG,False)

time.sleep(0.2)

GPIO.output(TRIG,True)

time.sleep(0.00001)

GPIO.output(TRIG,False)

while GPIO.input(ECHO)==0:

pulse\_start=time.time()

#When the trigger pin sends out a pulse, the echo pin becomes high

#this will give us the pulse start time, the time when the echo pin was last low

#then, the Echo pin remains high until the pulse echo is received back

#by the receiver. At this point, the echo pin will drop to low - pulse\_end time

while GPIO.input(ECHO)==1:

pulse\_end=time.time()

pulse\_duration=pulse\_end-pulse\_start

distance=pulse\_duration\*34300 #distance = speed of sound \* time taken

distance = distance / 2

distance=round(distance,2)

**print("distance:",distance,"cm")**