**Course Code: CE450**

**Lab 03**

**PREPARED BY**

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**Github Url:**

<https://github.com/KhandokerSamiulHoque/CE-450-LAB-3-QUIZ-1.git>

NOTE: video is in this github link , I uploaded over there. However sometimes when we try to copy and paste it from raspberry pi os linux to our real windows sometimes it creates problem in indentation please kindly look over that thing professor , however I have crosschecked several times to make things right.

1.

import RPi.GPIO as GPIO

import time

GPIO.setwarnings(False)

GPIO.setmode(GPIO.BCM)

RED\_GPIO\_PIN = 20

GREEN\_GPIO\_PIN = 16

BLUE\_GPIO\_PIN = 21

GPIO.setup(RED\_GPIO\_PIN, GPIO.OUT)

GPIO.setup(GREEN\_GPIO\_PIN, GPIO.OUT)

GPIO.setup(BLUE\_GPIO\_PIN, GPIO.OUT)

MORSE\_CODE\_SEQ = {

    'A': '.-',

    'B': '-...',

    'C': '-.-.',

    'D': '-..',

    'E': '.',

    'F': '..-.',

    'G': '--.',

    'H': '....',

    'I': '..',

    'J': '.---',

    'K': '-.-',

    'L': '.-..',

    'M': '--',

    'N': '-.',

    'O': '---',

    'P': '.--.',

    'Q': '--.-',

    'R': '.-.',

    'S': '...',

    'T': '-',

    'U': '..-',

    'V': '...-',

    'W': '.--',

    'X': '-..-',

    'Y': '--..',

    'Z': '-.--',

    '1': '.----',

    '2': '..---',

    '3': '...--',

    '4': '....-',

    '5': '.....',

    '6': '-....',

    '7': '--...',

    '8': '---..',

    '9': '----.',

    '0': '-----'

}

DOT\_INTERVAL = 0.3

DASH\_INTERVAL = 2 \* DOT\_INTERVAL

CHAR\_INTERVAL = 2 \* DASH\_INTERVAL

def blink(led\_pin, interval):

    GPIO.output(led\_pin, GPIO.HIGH)

    time.sleep(interval)

    GPIO.output(led\_pin, GPIO.LOW)

    time.sleep(DOT\_INTERVAL)

def send\_message(message):

    for char in message:

        char = char.upper()

        if char == ' ':

            time.sleep(CHAR\_INTERVAL)

        else:

            code = MORSE\_CODE\_SEQ[char]

            for symbol in code:

                if symbol == '.':

                    blink(RED\_GPIO\_PIN, DOT\_INTERVAL)

                elif symbol == '-':

                    blink(BLUE\_GPIO\_PIN, DASH\_INTERVAL)

            sleep\_length = CHAR\_INTERVAL - (len(code) \* DOT\_INTERVAL)

            if sleep\_length > 0:

                time.sleep(sleep\_length)

try:

    while True:

        send\_message("TEST123")

        time.sleep(CHAR\_INTERVAL)

except KeyboardInterrupt:

    GPIO.cleanup()