Assignment-3

Python Programming

Assignment Date	3 October 2022
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Marks	2 Marks

Question-1:

Write a python code for blinking LED for Raspberry pi.

Solution:

```
#!/user/bin/env python
import RPi.GPIO as GPIO # RPi.GPIO can be referred as GPIO from now
import time

ledPin = 22   # pin22

def setup():
        GPIO.setmode(GPIO.BOARD)      # GPIO Numbering of Pins
        GPIO.setup(ledPin, GPIO.OUT)  # Set ledPin as output
        GPIO.output(ledPin, GPIO.LOW) # Set ledPin to LOW to turn Off
the LED

def loop():
    while True:
        print 'LED on'
        GPIO.output(ledPin, GPIO.HIGH)   # LED On
        time.sleep(1.0  )   # wait 1 sec
        print 'LED off'
        GPIO.output(ledPin, GPIO.LOW)    # LED Off
        time.sleep(1.0)   # wait 1 sec
```

```
def endprogram():

                GPIO.output(ledPin, GPIO.LOW)    # LED Off
                GPIO.cleanup()                   # Release resources
if_name_=='_main_': # Program starts from here
                setup()
                try:
                        loop()
                except KeyboardInterrupt:   # When 'Ctrl+C' is pressed, the destroy()
will be executed.
                        endprogram()
```

Question-2:

Write a python code for Traffic lights for Raspberry pi.

Solution:

```
#!/usr/bin/python3.4
import RPi.GPIO as GPIO
import time

GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GPIO.setup(4, GPIO.IN, pull_up_down = GPIO.PUD_DOWN)  # Button
GPIO.setup(17, GPIO.OUT, initial = GPIO.HIGH)    # RED
GPIO.setup(27, GPIO.OUT, initial = GPIO.HIGH)    # YELLOW
GPIO.setup(18, GPIO.OUT, initial = GPIO.HIGH)    # GREEN
GPIO.setup(22, GPIO.OUT, initial = GPIO.LOW)     # Buzzer

 x = 1  # Variable to control traffic light system
```

```
                try:
               while True:
                       if(GPIO.input(4) == True):
                           while(x == 1):
                             GPIO.output(17, GPIO.LOW)
                              GPIO.output(22, GPIO.HIGH)
                              time.sleep(2)
                            GPIO.output(22, GPIO.LOW)
GPIO.output(27, GPIO.LOW)
                             time.sleep(3)
                            GPIO.output(17, GPIO.HIGH)
                            GPIO.output(27,GPIO.HIGH)
GPIO.output(18, GPIO.LOW)
                            time.sleep(5)
                           GPIO.output(18, GPIO.HIGH)
                            time.sleep(2)
              except Exception as ex:
                 print("error occured",ex)
              finally:
                 GPIO.cleanup()
```
