Traffic management

Python code:

import RPi.GPIO as GPIO

import time

red\_1 = 13

orange\_1 = 12

green\_1 = 11

red\_2 = 10

orange\_2 = 9

green\_2 = 8

red\_3 = 7

orange\_3 = 6

green\_3 = 5

red\_4 = 4

orange\_4 = 3

green\_4 = 2

GPIO.setmode(GPIO.BCM)

for pin in [red\_1, orange\_1, green\_1, red\_2, orange\_2, green\_2, red\_3, orange\_3, green\_3, red\_4, orange\_4, green\_4]:

GPIO.setup(pin, GPIO.OUT)

def direction\_1\_green():

GPIO.output(red\_1, GPIO.LOW)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.HIGH)

GPIO.output(red\_2, GPIO.HIGH)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.HIGH)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.HIGH)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.LOW)

def direction\_2\_orange():

GPIO.output(red\_1, GPIO.HIGH)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.LOW)

GPIO.output(orange\_2, GPIO.HIGH)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.HIGH)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.HIGH)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.LOW)

def direction\_2\_green():

GPIO.output(red\_1, GPIO.HIGH)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.LOW)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.HIGH)

GPIO.output(red\_3, GPIO.HIGH)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.HIGH)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.LOW)

def direction\_3\_orange():

GPIO.output(red\_1, GPIO.HIGH)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.HIGH)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.LOW)

GPIO.output(orange\_3, GPIO.HIGH)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.HIGH)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.LOW)

def direction\_3\_green():

GPIO.output(red\_1, GPIO.HIGH)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.HIGH)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.LOW)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.HIGH)

GPIO.output(red\_4, GPIO.HIGH)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.LOW)

def direction\_4\_orange():

GPIO.output(red\_1, GPIO.HIGH)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.HIGH)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.HIGH)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.LOW)

GPIO.output(orange\_4, GPIO.HIGH)

GPIO.output(green\_4, GPIO.LOW)

def direction\_4\_green():

GPIO.output(red\_1, GPIO.HIGH)

GPIO.output(orange\_1, GPIO.LOW)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.HIGH)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.HIGH)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.LOW)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.HIGH)

def direction\_1\_orange():

GPIO.output(red\_1, GPIO.LOW)

GPIO.output(orange\_1, GPIO.HIGH)

GPIO.output(green\_1, GPIO.LOW)

GPIO.output(red\_2, GPIO.HIGH)

GPIO.output(orange\_2, GPIO.LOW)

GPIO.output(green\_2, GPIO.LOW)

GPIO.output(red\_3, GPIO.HIGH)

GPIO.output(orange\_3, GPIO.LOW)

GPIO.output(green\_3, GPIO.LOW)

GPIO.output(red\_4, GPIO.HIGH)

GPIO.output(orange\_4, GPIO.LOW)

GPIO.output(green\_4, GPIO.LOW)

try:

while True:

direction\_1\_green()

time.sleep(5)

direction\_2\_orange()

time.sleep(3)

direction\_2\_green()

time.sleep(5)

direction\_3\_orange()

time.sleep(3)

direction\_3\_green()

time.sleep(5)

direction\_4\_orange()

time.sleep(3)

direction\_4\_green()

time.sleep(5)

direction\_1\_orange()

time.sleep(3)

except KeyboardInterrupt:

GPIO.cleanup()