import pygame

import random

pygame.init()

# 設定螢幕大小

screen\_width = 600

screen\_height = 400

screen = pygame.display.set\_mode((screen\_width, screen\_height))

pygame.display.set\_caption('Snake Game')

# 顏色定義

white = (255, 255, 255)

black = (0, 0, 0)

red = (213, 50, 80)

green = (0, 255, 0)

yellow = (255, 255, 0)

# 蛇的尺寸和速度

block\_size = 10

snake\_speed = 15

# 字體設置

font\_style = pygame.font.SysFont(None, 30)

score\_font = pygame.font.SysFont(None, 35)

def your\_score(score):

value = score\_font.render("Score: " + str(score), True, black)

screen.blit(value, [0, 0])

def our\_snake(block\_size, snake\_list):

for x in snake\_list:

pygame.draw.rect(screen, black, [x[0], x[1], block\_size, block\_size])

def our\_enemy(block\_size, enemy\_list):

for x in enemy\_list:

pygame.draw.rect(screen, yellow, [x[0], x[1], block\_size, block\_size])

def message(msg, color):

mesg = font\_style.render(msg, True, color)

screen.blit(mesg, [screen\_width / 6, screen\_height / 3])

def generate\_food(block\_size):

return round(random.randrange(0, screen\_width - block\_size) / block\_size) \* block\_size, round(random.randrange(0, screen\_height - block\_size) / block\_size) \* block\_size

def gameLoop():

game\_over = False

game\_close = False

x1, y1 = screen\_width / 2, screen\_height / 2

x1\_change, y1\_change = 0, 0

snake\_List = []

length\_of\_snake = 1

# 初始敵人設定（三個敵人）

enemies = [{"body": [generate\_food(block\_size)], "dir": random.choice([(block\_size, 0), (-block\_size, 0), (0, block\_size), (0, -block\_size)]), "length": 1} for \_ in range(3)]

food\_positions = [generate\_food(block\_size) for \_ in range(10)] # 生成 10 個食物

score = 0

clock = pygame.time.Clock()

while not game\_over:

while game\_close:

screen.fill(white)

message("You Lost! Press Q-Quit or C-Play Again", red)

your\_score(score)

pygame.display.update()

for event in pygame.event.get():

if event.type == pygame.KEYDOWN:

if event.key == pygame.K\_q:

game\_over = True

game\_close = False

if event.key == pygame.K\_c:

gameLoop()

for event in pygame.event.get():

if event.type == pygame.QUIT:

game\_over = True

if event.type == pygame.KEYDOWN:

if event.key == pygame.K\_LEFT:

x1\_change = -block\_size

y1\_change = 0

elif event.key == pygame.K\_RIGHT:

x1\_change = block\_size

y1\_change = 0

elif event.key == pygame.K\_UP:

x1\_change = 0

y1\_change = -block\_size

elif event.key == pygame.K\_DOWN:

x1\_change = 0

y1\_change = block\_size

x1 += x1\_change

y1 += y1\_change

# 如果蛇撞到牆壁，遊戲結束

if x1 >= screen\_width or x1 < 0 or y1 >= screen\_height or y1 < 0:

game\_close = True

screen.fill(white)

for foodx, foody in food\_positions:

pygame.draw.rect(screen, green, [foodx, foody, block\_size, block\_size])

snake\_Head = [x1, y1]

snake\_List.append(snake\_Head)

if len(snake\_List) > length\_of\_snake:

del snake\_List[0]

for x in snake\_List[:-1]:

if x == snake\_Head:

game\_close = True

# 更新和繪製所有敵人

for enemy in enemies:

if random.randint(1, 20) == 1:

enemy['dir'] = random.choice([(block\_size, 0), (-block\_size, 0), (0, block\_size), (0, -block\_size)])

enemy\_Head = [enemy['body'][-1][0] + enemy['dir'][0], enemy['body'][-1][1] + enemy['dir'][1]]

if enemy\_Head[0] < 0 or enemy\_Head[0] >= screen\_width or enemy\_Head[1] < 0 or enemy\_Head[1] >= screen\_height:

enemy['dir'] = random.choice([(block\_size, 0), (-block\_size, 0), (0, block\_size), (0, -block\_size)])

else:

enemy['body'].append(enemy\_Head)

if len(enemy['body']) > enemy['length']:

del enemy['body'][0]

our\_enemy(block\_size, enemy['body'])

our\_snake(block\_size, snake\_List)

your\_score(score)

pygame.display.update()

for i, (foodx, foody) in enumerate(food\_positions):

if x1 == foodx and y1 == foody:

food\_positions[i] = generate\_food(block\_size)

length\_of\_snake += 1

score += 1

for enemy in enemies:

for i, (foodx, foody) in enumerate(food\_positions):

if enemy['body'][-1][0] == foodx and enemy['body'][-1][1] == foody:

food\_positions[i] = generate\_food(block\_size)

enemy['length'] += 1

# 檢查蛇是否碰到敵人

for part in enemy['body']:

if snake\_Head == part:

game\_close = True

clock.tick(snake\_speed)

pygame.quit()

quit()

if \_\_name\_\_ == "\_\_main\_\_":

gameLoop()