import pygame

import os

import time

import random

from pygame import mixer

pygame.font.init()

pygame.mixer.init()

WIDTH, HEIGHT = 750, 750

WIN = pygame.display.set\_mode((WIDTH, HEIGHT))

pygame.display.set\_caption("SHOOT LOGISTICS'S ENEMIES")

# Load images

RED\_SPACE\_SHIP = pygame.image.load(os.path.join("assets", "redship.png"))

BROWN\_SPACE\_SHIP = pygame.image.load(os.path.join("assets", "brownship.png"))

GREEN\_SPACE\_SHIP = pygame.image.load(os.path.join("assets", "greenship.png"))

# Player player

UEH\_SPACE\_SHIP = pygame.image.load(os.path.join("assets", "pixel\_ship\_UEH.png"))

# Lasers

RED\_LASER = pygame.image.load(os.path.join("assets", "red.png"))

BROWN\_LASER = pygame.image.load(os.path.join("assets", "brown.png"))

GREEN\_LASER = pygame.image.load(os.path.join("assets", "green.png"))

UEH\_LASER = pygame.image.load(os.path.join("assets", "pixel\_laser\_UEH.png"))

# Background

BG = pygame.transform.scale(pygame.image.load(os.path.join("assets", "background.png")), (WIDTH, HEIGHT))

#Sound

mixer.music.load('ASound.mp3')

mixer.music.set\_volume(1.0)

mixer.music.play(-1)

lasersound=pygame.mixer.Sound('laser.mp3')

lasersound.set\_volume(0.4)

lostsound=pygame.mixer.Sound('LOST.mp3')

lostsound.set\_volume(0.9)

class Laser:

    def \_\_init\_\_(self, x, y, img):

        self.x = x

        self.y = y

        self.img = img

        self.mask = pygame.mask.from\_surface(self.img)

    def draw(self, window):

        window.blit(self.img, (self.x, self.y))

    def move(self, vel):

        self.y += vel

    def off\_screen(self, height):

        return not(self.y <= height and self.y >= 0)

    def collision(self, obj):

        return collide(self, obj)

class Ship:

    COOLDOWN = 30

    def \_\_init\_\_(self, x, y, health=100):

        self.x = x

        self.y = y

        self.health = health

        self.ship\_img = None

        self.laser\_img = None

        self.lasers = []

        self.cool\_down\_counter = 0

    def draw(self, window):

        window.blit(self.ship\_img, (self.x, self.y))

        for laser in self.lasers:

            laser.draw(window)

    def move\_lasers(self, vel, obj):

        self.cooldown()

        for laser in self.lasers:

            laser.move(vel)

            if laser.off\_screen(HEIGHT):

                self.lasers.remove(laser)

            elif laser.collision(obj):

                obj.health -= 10

                self.lasers.remove(laser)

    def cooldown(self):

        if self.cool\_down\_counter >= self.COOLDOWN:

            self.cool\_down\_counter = 0

        elif self.cool\_down\_counter > 0:

            self.cool\_down\_counter += 1

    def shoot(self):

        if self.cool\_down\_counter == 0:

            laser = Laser(self.x, self.y, self.laser\_img)

            self.lasers.append(laser)

            self.cool\_down\_counter = 1

    def get\_width(self):

        return self.ship\_img.get\_width()

    def get\_height(self):

        return self.ship\_img.get\_height()

class Player(Ship):

    def \_\_init\_\_(self, x, y, health=100):

        super().\_\_init\_\_(x, y, health)

        self.ship\_img = UEH\_SPACE\_SHIP

        self.laser\_img = UEH\_LASER

        self.mask = pygame.mask.from\_surface(self.ship\_img)

        self.max\_health = health

    def move\_lasers(self, vel, objs):

        self.cooldown()

        for laser in self.lasers:

            laser.move(vel)

            if laser.off\_screen(HEIGHT):

                self.lasers.remove(laser)

            else:

                for obj in objs:

                    if laser.collision(obj):

                        objs.remove(obj)

                        if laser in self.lasers:

                            self.lasers.remove(laser)

    def draw(self, window):

        super().draw(window)

        self.healthbar(window)

    def healthbar(self, window):

        pygame.draw.rect(window, (255,0,0), (self.x, self.y + self.ship\_img.get\_height() + 10, self.ship\_img.get\_width(), 10))

        pygame.draw.rect(window, (0,255,0), (self.x, self.y + self.ship\_img.get\_height() + 10, self.ship\_img.get\_width() \* (self.health/self.max\_health), 10))

class Enemy(Ship):

    COLOR\_MAP = {

                "red": (RED\_SPACE\_SHIP, RED\_LASER),

                "brown": (BROWN\_SPACE\_SHIP, BROWN\_LASER),

                "green": (GREEN\_SPACE\_SHIP, GREEN\_LASER)

                }

    def \_\_init\_\_(self, x, y, color, health=100):

        super().\_\_init\_\_(x, y, health)

        self.ship\_img, self.laser\_img = self.COLOR\_MAP[color]

        self.mask = pygame.mask.from\_surface(self.ship\_img)

    def move(self, vel):

        self.y += vel

    def shoot(self):

        if self.cool\_down\_counter == 0:

            laser = Laser(self.x-20, self.y, self.laser\_img)

            self.lasers.append(laser)

            self.cool\_down\_counter = 1

def collide(obj1, obj2):

    offset\_x = obj2.x - obj1.x

    offset\_y = obj2.y - obj1.y

    return obj1.mask.overlap(obj2.mask, (offset\_x, offset\_y)) != None

def main():

    run = True

    FPS = 60

    level = 0

    lives = 5

    main\_font = pygame.font.SysFont("Calibri", 50)

    lost\_font = pygame.font.SysFont("Calibri", 60)

    enemies = []

    wave\_length = 5

    enemy\_vel = 1

    player\_vel = 5

    laser\_vel = 5

    player = Player(300, 630)

    clock = pygame.time.Clock()

    lost = False

    lost\_count = 0

    def redraw\_window():

        WIN.blit(BG, (0,0))

        # draw text

        lives\_label = main\_font.render(f"Lives: {lives}", 1, (255,255,255))

        level\_label = main\_font.render(f"Level: {level}", 1, (255,255,255))

        WIN.blit(lives\_label, (10, 10))

        WIN.blit(level\_label, (WIDTH - level\_label.get\_width() - 10, 10))

        for enemy in enemies:

            enemy.draw(WIN)

        player.draw(WIN)

        if lost:

            lost\_label = lost\_font.render("You Lost!!", 1, (255,255,255))

            WIN.blit(lost\_label, (WIDTH/2 - lost\_label.get\_width()/2, 350))

        pygame.display.update()

    while run:

        clock.tick(FPS)

        redraw\_window()

        if lives <= 0 or player.health <= 0:

            mixer.music.pause()

            lostsound.play()

            lost = True

            lost\_count += 1

            mixer.music.play()

        if lost:

            if lost\_count > FPS \* 3:

                run = False

            else:

                continue

        if len(enemies) == 0:

            level += 1

            wave\_length += 5

            for i in range(wave\_length):

                enemy = Enemy(random.randrange(50, WIDTH-100), random.randrange(-1500, -100), random.choice(["red", "blue", "green"]))

                enemies.append(enemy)

        for event in pygame.event.get():

            if event.type == pygame.QUIT:

                quit()

#Dieu Khien (ADSW + SPACE)

        keys = pygame.key.get\_pressed()

        if keys[pygame.K\_a] and player.x - player\_vel > 0: # left

            player.x -= player\_vel

        if keys[pygame.K\_d] and player.x + player\_vel + player.get\_width() < WIDTH: # right

            player.x += player\_vel

        if keys[pygame.K\_w] and player.y - player\_vel > 0: # up

            player.y -= player\_vel

        if keys[pygame.K\_s] and player.y + player\_vel + player.get\_height() + 15 < HEIGHT: # down

            player.y += player\_vel

        if keys[pygame.K\_SPACE]:

            player.shoot()

            lasersound.play()

        for enemy in enemies[:]:

            enemy.move(enemy\_vel)

            enemy.move\_lasers(laser\_vel, player)

            if random.randrange(0, 2\*60) == 1:

                enemy.shoot()

            if collide(enemy, player):

                player.health -= 10

                enemies.remove(enemy)

            elif enemy.y + enemy.get\_height() > HEIGHT:

                lives -= 1

                enemies.remove(enemy)

        player.move\_lasers(-laser\_vel, enemies)

def main\_menu():

    title\_font = pygame.font.SysFont("Calibri", 60)

    title\_font1 = pygame.font.SysFont("Calibri", 35)

    run = True

    while run:

        WIN.blit(BG, (0,0))

        title\_label = title\_font.render("SHOOT LOGISTICS'S ENEMIES",1,(250,255,255))

        title\_label1 = title\_font1.render("click mouse to begin....", 1, (255,1,1))

        WIN.blit(title\_label, (WIDTH/2 - title\_label.get\_width()/2, 350))

        WIN.blit(title\_label1, (WIDTH/2 - title\_label.get\_width()/4, 650))

        pygame.display.update()

        for event in pygame.event.get():

            if event.type == pygame.QUIT:

                run = False

            if event.type == pygame.MOUSEBUTTONDOWN:

                main()

    pygame.quit()

main\_menu()