import pygame

import random

from os import path

img\_dir = path.join(path.dirname(\_\_file\_\_), 'img')

snd\_dir = path.join(path.dirname(\_\_file\_\_), 'sound')

WIDTH = 480

HEIGHT = 600

FPS = 60

# Задаем цвета

WHITE = (255, 255, 255)

BLACK = (0, 0, 0)

RED = (255, 0, 0)

GREEN = (0, 255, 0)

BLUE = (0, 0, 255)

YELLOW = (255, 255, 0)

# Создаем игру и окно

pygame.init()

pygame.mixer.init()

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

pygame.display.set\_caption("Аркада")

clock = pygame.time.Clock()

font\_name = pygame.font.match\_font('arial')

def draw\_text(surf, text, size, x, y):

font = pygame.font.Font(font\_name, size)

text\_surface = font.render(text, True, WHITE)

text\_rect = text\_surface.get\_rect()

text\_rect.midtop = (x, y)

surf.blit(text\_surface, text\_rect)

def newmob():

m = Mob()

all\_sprites.add(m)

mobs.add(m)

def draw\_shield\_bar(surf, x, y, pct):

if pct < 0:

pct = 0

BAR\_LENGTH = 150

BAR\_HEIGHT = 20

fill = (pct / 100) \* BAR\_LENGTH

outline\_rect = pygame.Rect(x, y, BAR\_LENGTH, BAR\_HEIGHT)

fill\_rect = pygame.Rect(x, y, fill, BAR\_HEIGHT)

pygame.draw.rect(surf, RED, fill\_rect)

pygame.draw.rect(surf, WHITE, outline\_rect, 2)

class Player(pygame.sprite.Sprite):

def \_\_init\_\_(self):

pygame.sprite.Sprite.\_\_init\_\_(self)

self.image = pygame.transform.scale(player\_img, (50, 38))

self.image.set\_colorkey(BLACK)

self.rect = self.image.get\_rect()

self.radius = 20

self.rect.centerx = WIDTH / 2

self.rect.bottom = HEIGHT - 10

self.speedx = 0

self.shield = 100

def update(self):

self.speedx = 0

keystate = pygame.key.get\_pressed()

if keystate[pygame.K\_LEFT]:

self.speedx = -8

if keystate[pygame.K\_RIGHT]:

self.speedx = 8

self.rect.x += self.speedx

if self.rect.right > WIDTH:

self.rect.right = WIDTH

if self.rect.left < 0:

self.rect.left = 0

def shoot(self):

bullet = Bullet(self.rect.centerx, self.rect.top)

all\_sprites.add(bullet)

bullets.add(bullet)

shoot\_sound.play()

class Mob(pygame.sprite.Sprite):

def \_\_init\_\_(self):

pygame.sprite.Sprite.\_\_init\_\_(self)

self.image\_orig = random.choice(meteor\_images)

self.image\_orig.set\_colorkey(BLACK)

self.image = self.image\_orig.copy()

self.rect = self.image.get\_rect()

self.radius = int(self.rect.width \* .85 / 2)

self.rect.x = random.randrange(WIDTH - self.rect.width)

self.rect.y = random.randrange(-150, -100)

self.speedy = random.randrange(1, 8)

self.speedx = random.randrange(-3, 3)

self.rot = 0

self.rot\_speed = random.randrange(-8, 8)

self.last\_update = pygame.time.get\_ticks()

def rotate(self):

now = pygame.time.get\_ticks()

if now - self.last\_update > 50:

self.last\_update = now

self.rot = (self.rot + self.rot\_speed) % 360

new\_image = pygame.transform.rotate(self.image\_orig, self.rot)

old\_center = self.rect.center

self.image = new\_image

self.rect = self.image.get\_rect()

self.rect.center = old\_center

def update(self):

self.rotate()

self.rect.x += self.speedx

self.rect.y += self.speedy

if self.rect.top > HEIGHT + 10 or self.rect.left < -25 or self.rect.right > WIDTH + 20:

self.rect.x = random.randrange(WIDTH - self.rect.width)

self.rect.y = random.randrange(-100, -40)

self.speedy = random.randrange(1, 8)

class Bullet(pygame.sprite.Sprite):

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

pygame.sprite.Sprite.\_\_init\_\_(self)

self.image = bullet\_img

self.image.set\_colorkey(BLACK)

self.rect = self.image.get\_rect()

self.rect.bottom = y

self.rect.centerx = x

self.speedy = -10

def update(self):

self.rect.y += self.speedy

# убить, если он заходит за верхнюю часть экрана

if self.rect.bottom < 0:

self.kill()

# Загрузка всей игровой графики

background = pygame.image.load(path.join(img\_dir, "Фон\Plant\_0.png")).convert()

background\_rect = background.get\_rect()

player\_img = pygame.image.load(path.join(img\_dir, "Игрок\P0\_orange.png")).convert()

bullet\_img = pygame.image.load(path.join(img\_dir, "Лазеры\laserRed16.png")).convert()

meteor\_images = []

meteor\_list = ['Метеориты\meteorBrown\_big1.png', 'Метеориты\meteorBrown\_med1.png', 'Метеориты\meteorBrown\_med1.png',

'Метеориты\meteorBrown\_med3.png', 'Метеориты\meteorBrown\_small1.png', 'Метеориты\meteorBrown\_small2.png',

'Метеориты\meteorBrown\_tiny1.png']

for img in meteor\_list:

meteor\_images.append(pygame.image.load(path.join(img\_dir, img)).convert())

# Загрузка мелодий игры

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shoot\_sound = pygame.mixer.Sound(path.join(snd\_dir, 'Звук\pew.wav'))

expl\_sounds = []

for snd in ['Звук\expl3.wav', 'Звук\expl6.wav']:

expl\_sounds.append(pygame.mixer.Sound(path.join(snd\_dir, snd)))

all\_sprites = pygame.sprite.Group()

mobs = pygame.sprite.Group()

bullets = pygame.sprite.Group()

player = Player()

all\_sprites.add(player)

for i in range(8):

newmob()

score = 0

# Цикл игры

running = True

while running:

# Держим цикл на правильной скорости

clock.tick(FPS)

# Ввод процесса (события)

for event in pygame.event.get():

# проверка для закрытия окна

if event.type == pygame.QUIT:

running = False

elif event.type == pygame.KEYDOWN:

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

player.shoot()

# Обновление

all\_sprites.update()

# проверка, попала ли пуля в моб

hits = pygame.sprite.groupcollide(mobs, bullets, True, True)

for hit in hits:

score += 50 - hit.radius

random.choice(expl\_sounds).play()

newmob()

# Проверка, не ударил ли моб игрока

hits = pygame.sprite.spritecollide(player, mobs, True, pygame.sprite.collide\_circle)

for hit in hits:

#устанавливаем во сколько возрастёт урон

player.shield -= hit.radius \* 1

newmob()

if player.shield <= 0:

running = False

# Рендеринг

screen.fill(BLACK)

screen.blit(background, background\_rect)

all\_sprites.draw(screen)

draw\_text(screen, str(score), 18, WIDTH / 2, 10)

draw\_shield\_bar(screen, 5, 5, player.shield)

# После отрисовки всего, переворачиваем экран

pygame.display.flip()

pygame.quit()