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#Import modules
import pygame
import random
import math

#Initialize Pygame
pygame.init()

#Screen
screen=pygame.display.set_mode((800, 600))

#Title and icons
pygame.display.set_caption("Space Invaders")
icon=pygame.image.load('imgs/bullet.png')
pygame.display.set_icon(icon)

#Background
background=pygame.image.load('imgs/background.png')

#Player
playerimg=pygame.image.load('imgs/si.png')
pX=360
pY=480
pXchange=0
pYchange=0
speed=4
def player(x, y):
    screen.blit(playerimg, (x,y))

#Enemy
enemyimg=pygame.image.load('imgs/alien.png')
eX=random.randint(100, 700)
eY=random.randint(100, 300)
eXchange=2.5
eYchange=15
def enemy(x, y):
    screen.blit(enemyimg, (x,y))

#Bullet
bulletimg=pygame.image.load('imgs/bullet.png')
bX=pX
bY=pY
bYchange=-10
bState=0 #Ready
def fire_bullet(x, y):
    global bState
    bState=1 #Fire
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        screen.blit(bulletimg, (x, y))

#Main Game Loop
running=True
while running:
    screen.fill((40, 40, 40))
    screen.blit(background, (0, 0))

    for event in pygame.event.get():
        #Quit
        if event.type==pygame.QUIT:
            running=False

        #Keystrokes
        if event.type==pygame.KEYDOWN:
            if event.key==pygame.K_LEFT:
                pXchange=-speed
            if event.key==pygame.K_RIGHT:
                pXchange=speed
            if event.key==pygame.K_UP:
                pYchange=-speed
            if event.key==pygame.K_DOWN:
                pYchange=speed
            if event.key==pygame.K_SPACE:
                bX, bY=pX, pY
                fire_bullet(bX, bY)

        if event.type==pygame.KEYUP:
            if event.key==pygame.K_LEFT or event.key==pygame.K_RIGHT:
                pXchange=0
            if event.key==pygame.K_UP or event.key==pygame.K_DOWN:
                pYchange=0

#Player movement
pX+=pXchange
pY+=pYchange
if pX<=0:
    pX=736
elif pX>=736:
    pX=0
player(pX, pY)

#Enemy movement
eX+=eXchange
if eX>=736:
    eY+=eYchange
    eXchange=-eXchange

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if eX<=0:
    eY+=eYchange
    eXchange=-eXchange
enemy(eX, eY)

#Bullet movement
if bState==1:
    fire_bullet(bX, bY)
    bY+=bYchange
    if bY<=0:
        bState=0

#Update
pygame.display.update()
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