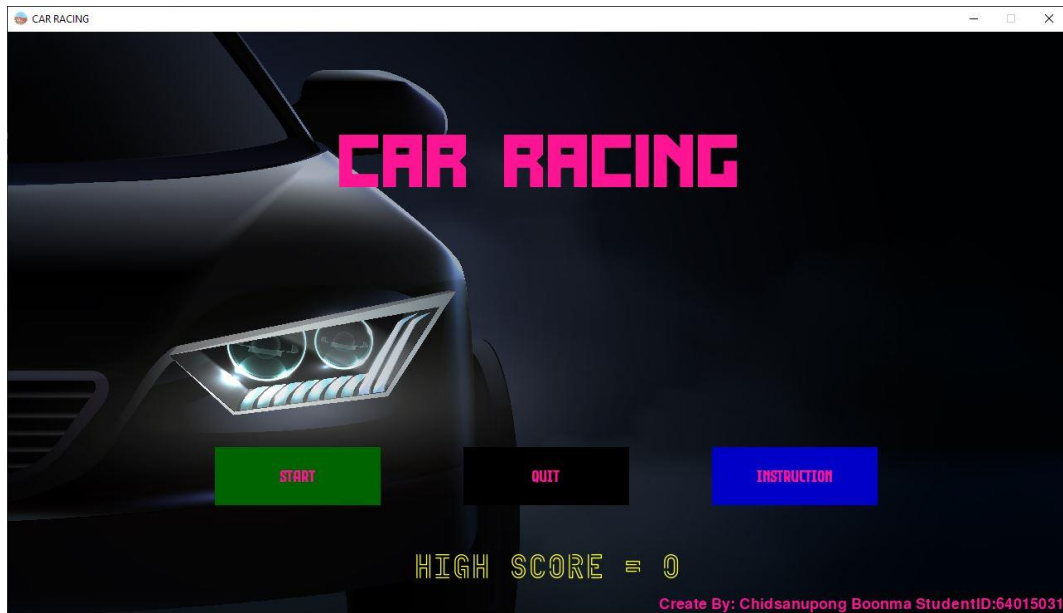CAR RACING GAME

จัดทำโดย

นายชิษณุพงศ์ บุญมา

รหัส 64015031

สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง

คณะวิศวกรรมศาสตร์ สาขาคอมพิวเตอร์(ต่อเนื่อง) พ.ศ.2564
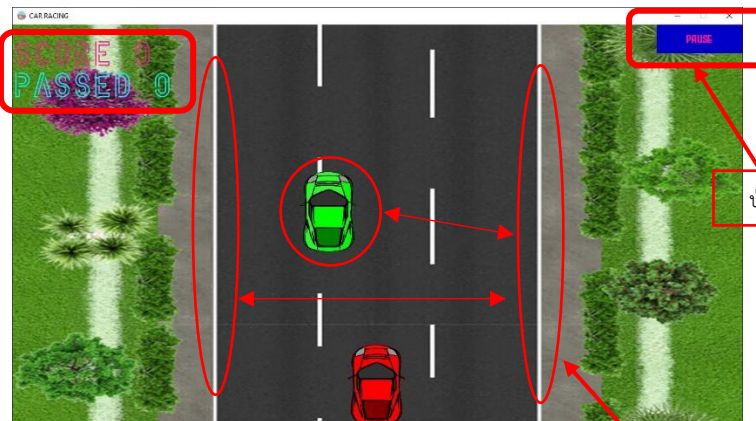
CAR RACING GAME เป็นเกมที่ผมสร้างขึ้นเป็นเกมแรก แนวทางการเล่นก็เป็นเกมควบคุมรถไม่ให้ชน
รถคันอื่นและห้ามชนขอบถนน ยิ่งLevel สูงความเร็วของของรถก็จะเพิ่มมากขึ้นเรื่อยๆ ซึ่งที่ผมทำเกม
นี้ขึ้นมาเพราะได้แนวคิดมาจากเกม Retro Speed ซึ่งผมลองทำเกมแนวนี้ขึ้นมาเอง

Retro Speed

แสดง Score ของผู้เล่นและรถที่เรารอดผ่านไปว่าผ่านไปแล้วกี่คัน

ปุ่ม PAUSE

ห้ามชนในส่วนนี้

เกมจะจบลงก็ต่อเมื่อ

- รถของผู้เล่นชนกับรถของศัตรู
- รถของผู้เล่นชนกับขอบถนน

การเก็บ Score

คะแนนเมื่อรอดจากรถศัตรู 1 คัน จะได้ 50 คะแนน Player ที่ทำคะแนนมากสุดจะนำไปโชว์ไว้ที่ High Score

Code

```python
import pygame
from pygame import mixer
import time
import random
import os


pygame.init()

# ขนาดของหน้าต่าง
width = 1280
height = 700

# สีเก็บเป็น RGB
green = (0, 100, 0)
cyan = (0, 255, 255)
red = (240, 0, 0)
blue = (0,0, 200)
yellow = (255,255,51)
pink = (255,20,147)
black = (0,0,0)
bright_red = (255,0,0)
bright_light = (240,255,255)
bright_blue = (0,0,255)
bright_yellow = (255,255,51)


# สร้างหน้าต่างของเกม
screen = pygame.display.set_mode((width, height))
pygame.display.set_caption("CAR RACING")
clock = pygame.time.Clock()
carimg = pygame.transform.scale(pygame.image.load('car_imgs/tile000.png'),(100,
140))
icon = pygame.image.load('imgs/icon.png')
pygame.display.set_icon(icon)
pygame.display.update()

# ส่วนของพื้นหลัง
backgroundimg = pygame.image.load('imgs/road.png')
background1 =
pygame.transform.scale(pygame.image.load("imgs/road2.jpg"),(width,height))
background2 = pygame.transform.scale(pygame.image.load("imgs/road1.jpg"),(width,
height))
```

```python
background3 = pygame.transform.scale(pygame.image.load("imgs/bg01.jpg"),(width,
height))
car_width = 50
pause=False


# เสียงที่ใช้ในเกม
player_sound = mixer.Sound('sounds/car-music-other.mp3')
hit_sound = mixer.Sound('sounds/hit.wav')
horn_sound = mixer.Sound('sounds/horn.wav')
countdown_sound = mixer.Sound('sounds/countdown.wav')
end_sound = mixer.Sound('sounds/end.wav')
pygame.mixer.music.load("sounds/music.wav")

# เก็บ High Score
score=0
high_score = 0
if os.path.exists('highscore.txt'):
    with open('highscore.txt', 'r') as file:
        high_score = int(file.read())
else:
    high_score = 0

# หน้า Menu ของเกม
def intro_loop():
    global high_score,score
    intro=True
    if score > high_score:
            high_score = score
            with open('highscore.txt', 'w') as file:
                file.write(str(high_score))
    print(high_score)
    pygame.mixer.music.play(-1)
    while intro:
        for event in pygame.event.get():
            if event.type==pygame.QUIT:
                pygame.quit()
                quit()

        screen.blit(background1,(0,0))
        largetext = pygame.font.Font('font/PixelPowerline-11Mg.ttf', 80)
        mediumtext= pygame.font.Font('freesansbold.ttf',18)
        TextSurf, TextRect = text_object("CAR RACING", largetext)
        TextRect.center = ((width/2),(height/4.5))
        screen.blit(TextSurf,TextRect)
```

```python
        button("START",250,500,200,70,green,bright_light,"play")
        button("QUIT",550,500,200,70,black,bright_yellow,"quit")
        button("INSTRUCTION",850,500,200,70,blue,bright_blue,"intro")
        font = pygame.font.Font("font/NeonSans.ttf", 40)
        text = font.render("High Score = " + str(high_score), 1, yellow)
        screen.blit(text, (490, 620))
        Textname,Textrext= text_object("Create By: Chidsanupong Boonma
StudentID:64015031",mediumtext)
        Textrext.center=((1030),(690))
        screen.blit(Textname,Textrext)
        pygame.display.update()
        clock.tick(100)


# ส่วนควบคุมปุ่ม
def button(msg,x,y,w,h,ic,ac,action=None):
    mouse=pygame.mouse.get_pos()
    click=pygame.mouse.get_pressed()
    if x+w>mouse[0]>x and y+h>mouse[1]>y:
        pygame.draw.rect(screen,ac,(x,y,w,h))
        if click[0]==1 and action!=None:
            if action=="play":
                countdown()
            elif action=="quit":
                pygame.quit()
                quit()
            elif action=="intro":
                introduction()
            elif action=="menu":
                intro_loop()
            elif action=="pause":
                paused()
            elif action=="unpause":
                unpaused()
    else:
        pygame.draw.rect(screen,ic,(x,y,w,h))
    smalltext = pygame.font.Font("font/EvilEmpire-4BBVK.ttf",20)
    textsurf,textrect= text_object(msg,smalltext)
    textrect.center=((x+(w/2)),(y+(h/2)))
    screen.blit(textsurf,textrect)


# หน้าแนะนำวิธีการเล่น
def introduction():
    introduction = True
```

```python
    x_x0 = 0
    y_y0 = 0
    x2 = 0
    y2 = -height
    while introduction:
        for event in pygame.event.get():
            if event.type==pygame.QUIT:
                pygame.quit()
                quit()

        y2 += 5
        y_y0 += 5
        screen.blit(backgroundimg, (x_x0,y_y0))
        screen.blit(backgroundimg, (x2, y2))
        if y_y0 > height:
            y_y0 = -height
        if y2 > height:
            y2 = -height

        largetext = pygame.font.Font('font/PixelPowerline-11Mg.ttf',60)
        mediumtext = pygame.font.Font('freesansbold.ttf',30)
        nametext = pygame.font.Font('freesansbold.ttf',18)
        TextSurf,TextRect=text_object("INSTRUCTION",largetext)
        TextRect.center=((width/2),(height/6))
        sTextSurf,sTextRect = text_object("CONTROLS",mediumtext)
        sTextRect.center =((width/2),(height/2))
        stextSurf,stextRect=text_object("ARROW LEFT : LEFT TURN",mediumtext)
        stextRect=((445),(400))
        hTextSurf,hTextRect=text_object("ARROW RIGHT : RIGHT TURN",mediumtext)
        hTextRect.center=((663),(480))
        iTextSurf,iTextRect= text_object("Don't crash the curb!!",mediumtext)
        iTextRect.center=((width/2),(height/1.3))
        Textname,Textrext=text_object("Create By: Chidsanupong Boonma
StudentID:64015031",nametext)
        Textrext.center=((width/2),(height/1.02))

        screen.blit(TextSurf,TextRect)
        screen.blit(sTextSurf,sTextRect)
        screen.blit(stextSurf,stextRect)
        screen.blit(hTextSurf,hTextRect)
        screen.blit(iTextSurf,iTextRect)
        screen.blit(Textname,Textrext)

        button("BACK",800,600,100,50,blue,bright_blue,"menu")
        pygame.display.update()
```

```python
        clock.tick(30)


# หน้า Paised
def paused():
    global pause
    player_sound.stop()
    while pause:
            for event in pygame.event.get():
                if event.type==pygame.QUIT:
                    pygame.quit()
                    quit()
            screen.blit(background2,(0,0))
            largetext=pygame.font.Font('font/PixelPowerline-11Mg.ttf',115)
            TextSurf,TextRect=text_object("PAUSED",largetext)
            TextRect.center=((width/2),(height/4))
            screen.blit(TextSurf,TextRect)
            button("CONTINUE",250,500,200,70,green,bright_light,"unpause")
            button("RESTART",550,500,200,70,blue,bright_blue,"play")
            button("MAIN MENU",850,500,200,70,black,bright_light,"menu")
            pygame.display.update()
            clock.tick(30)



# Unpaused
def unpaused():
    global pause
    pause=False
    if pause==False:
        player_sound.play()


# พื้นหลังหน้านับถอยหลัง
def countdown_background():
    font= pygame.font.Font("font/NeonSans.ttf", 30)
    x = (width *0.46)
    y = (height * 0.8)
    screen.blit(backgroundimg, (0,0))
    screen.blit(carimg, (x, y))
    text = font.render("passed: 0", True, cyan)
    score = font.render("SCORE: 0", True, pink)
    screen.blit(text, (0, 50))
    screen.blit(score, (0, 20))
    button("PAUSE", 1130, 0, 150, 50, blue, bright_blue, "pause")
```

```python
# นับถอยหลัง
def countdown():
    global score
    countdown=True
    mixer.music.stop()
    countdown_sound.play()
    while countdown:
            for event in pygame.event.get():
                if event.type==pygame.QUIT:
                    pygame.quit()
                    quit()

            screen.fill(green)
            countdown_background()
            largetext=pygame.font.Font('font/PixelPowerline-11Mg.ttf',115)
            TextSurf,TextRect=text_object("3",largetext)
            TextRect.center=((width/2),(height/2))
            screen.blit(TextSurf,TextRect)
            pygame.display.update()
            clock.tick(1)
            screen.fill(green)
            countdown_background()

            largetext=pygame.font.Font('font/PixelPowerline-11Mg.ttf',115)
            TextSurf,TextRect=text_object("2",largetext)
            TextRect.center=((width/2),(height/2))
            screen.blit(TextSurf,TextRect)
            pygame.display.update()
            clock.tick(1)
            screen.fill(green)
            countdown_background()

            largetext=pygame.font.Font('font/PixelPowerline-11Mg.ttf',115)
            TextSurf,TextRect=text_object("1",largetext)
            TextRect.center=((width/2),(height/2))
            screen.blit(TextSurf,TextRect)
            pygame.display.update()
            clock.tick(1)
            screen.fill(green)
            countdown_background()

            largetext=pygame.font.Font('font/PixelPowerline-11Mg.ttf',115)
            TextSurf,TextRect=text_object("GO!!!",largetext)
            TextRect.center=((width/2),(height/2))
            screen.blit(TextSurf,TextRect)
```

```python
            pygame.display.update()
            clock.tick(1)
            score = 0
            main()


# import enemy เข้ามา
def Enemy(enemy_startx,enemy_starty,enemy):
    if enemy==0:
        enemy_pic =
pygame.transform.scale(pygame.image.load("car_imgs/tile001.png"), (100, 140))
    elif enemy==1:
        enemy_pic =
pygame.transform.scale(pygame.image.load("car_imgs/tile002.png"), (100, 140))
    else:
        enemy_pic =
pygame.transform.scale(pygame.image.load("car_imgs/tile003.png"), (100, 140))

    screen.blit(enemy_pic, (enemy_startx,enemy_starty))


# Show score
def score_system(passed,score):
    font = pygame.font.Font("font/NeonSans.ttf", 60)
    text = font.render("passed " +str(passed),True,cyan)
    score = font.render("score " +str(score),True,pink)

    screen.blit(text, (0,70))
    screen.blit(score, (0,15))


def text_object(text,font):
    textsurface = font.render(text, True, pink)
    return textsurface,textsurface.get_rect()


def message_display(text):
    largetext = pygame.font.Font("font/PixelPowerline-11Mg.ttf", 80)
    textsurf,textrect = text_object(text,largetext)
    textrect.center = ((width/2),(height/2))
    screen.blit(textsurf,textrect)
    pygame.display.update()
    time.sleep(3)


# หน้า Restart
```

```python
def restart():
    global pause
    player_sound.stop()
    end_sound.play()
    while pause:
            for event in pygame.event.get():
                if event.type==pygame.QUIT:
                    pygame.quit()
                    quit()

            screen.blit(background3,(0,0))
            largetext=pygame.font.Font('font/PixelPowerline-11Mg.ttf',80)
            TextSurf,TextRect=text_object("Can you play again?",largetext)
            TextRect.center=((width/2),(height/3.5))
            screen.blit(TextSurf,TextRect)
            button("RESTART",250,430,200,70,green,bright_light,"play")
            button("QUIT",550,430,200,70,black,bright_yellow,"quit")
            button("MAIN MENU",850,430,200,70,blue,bright_light,"menu")
            font = pygame.font.Font("font/NeonSans.ttf", 60)
            text = font.render("High Score = " + str(high_score), 1, red)
            screen.blit(text, (400, 260))
            font1 = pygame.font.Font("font/NeonSans.ttf", 40)
            text = font1.render("Your Score = " + str(score), 1, yellow)
            screen.blit(text, (500, 350))
            pygame.display.update()
            clock.tick(30)


# แจ้งเตือนตอนชน
def crash():
    player_sound.stop()
    hit_sound.play()
    message_display("YOU CRASHED")
    restart()



def background():
    screen.blit(backgroundimg, (0, 0))


# Random เสียงบีบแตร
def probability(percent=100, chance=100):
    if 0 <= percent <= 100:
        number = random.randint(1, chance)
```

```python
        if number <= round(percent):  # 40 -> 40
            return True
        return False
    else:
        raise ValueError


# ตัวPlayer
def car(x, y):
    screen.blit(carimg, (x, y))
    if probability(1, 150):
        horn_sound.play()


# Loop ของเกม
def main():
    global pause,score
    FPS=120
    mixer.music.stop()
    player_sound.play()
    x = (width*0.46)
    y = (height*0.8)
    x_change = 0
    obstracle_speed = 5
    enemy=0
    enemy_startx= random.randint(360, 800)
    enemy_starty= 0
    enemy_width=85
    enemy_height=130
    passed=0
    level=0
    ax_y=15
    x_x = 0
    y_y = 0
    x1 = 0
    y1 = -height
    running = True
    while running:
        for event in pygame.event.get():
            if event.type == pygame.QUIT:
                pygame.quit()
                quit()

            if event.type == pygame.KEYDOWN:
                if event.key == pygame.K_LEFT:
```

```python
                    x_change -= 3
                if event.key == pygame.K_RIGHT:
                    x_change += 3
                if event.key == pygame.K_a:
                    obstracle_speed += 2
                if event.key == pygame.K_b:
                    obstracle_speed -= 2
            if event.type == pygame.KEYUP:
                if event.key == pygame.K_LEFT or event.key == pygame.K_RIGHT:
                    x_change = 0

        x += x_change
        pause=True

        y1 += 5
        y_y += 5
        screen.blit(backgroundimg, (x_x,y_y))
        screen.blit(backgroundimg, (x1, y1))
        if y_y > height:
            y_y = -height
        if y1 > height:
            y1 = -height

        ax_y+=obstracle_speed

        enemy_starty-=(obstracle_speed/2)
        Enemy(enemy_startx,enemy_starty,enemy)
        enemy_starty+=obstracle_speed

        car(x,y)
        score_system(passed,score)

        if x>868-car_width or x<360:
            crash()

        if enemy_starty > height:
            enemy_starty = 0 - enemy_height
            enemy_startx = random.randint(360, 800)
            enemy = random.randrange(0, 3)
            passed += 1
            score += 50


            if int(passed)%10 == 0:
                level+=1
```

```python
                obstracle_speed+=3
                largetext = pygame.font.Font("font/PixelPowerline-11Mg.ttf", 80)
                textsurf, textrect = text_object("LEVEL"+str(level),largetext)
                textrect.center = ((width / 2), (height / 2))
                screen.blit(textsurf, textrect)
                pygame.display.update()
                time.sleep(3)


        if y < enemy_starty+enemy_height:
            if x > enemy_startx-enemy_width and x < enemy_startx+enemy_width or
x+car_width > enemy_startx and x+car_width < enemy_startx+enemy_width:
                crash()


        button("Pause",1130,0,150,50,blue,bright_blue,"pause")
        pygame.display.update()
        clock.tick(FPS)

intro_loop()
main()
pygame.quit()
quit()
```