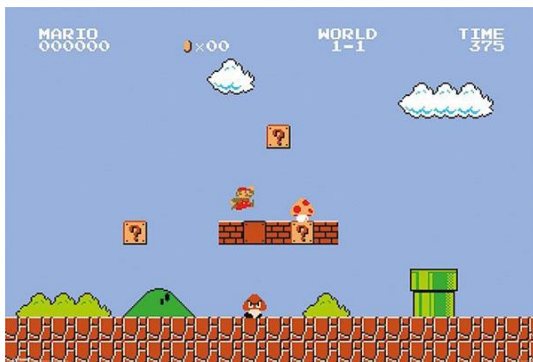


## The Warrior

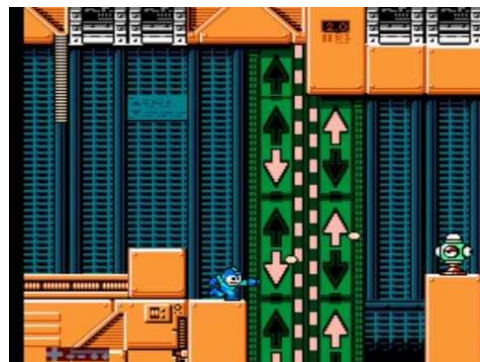


The Warrior เป็นเกมแนวผจญภัยโจมตีมอนสเตอร์และผ่านด่านเพิ่มความท้าทายเกมไปเรื่อย ๆ ที่มาของชื่อเกม The Warrior มาจากที่ตัวเอกเราจะรับบทเป็นนักรบในการปราบมอนสเตอร์และฝ่าฟันอุปสรรคต่าง ๆ และบอสของเกมนี้เป็นมิโนทอร์ ตามตำนานกรีก มิโนทอร์จะอยู่ในวงกตและริสซุสเป็นนักรบผู้ที่ฝ่าฟันอุปสรรคในวงกตและสามารถพิชิตมิโนทอร์ลงได้ จึงตั้งชื่อเกมว่า The Warrior ที่แปลว่า นักรบ เพราะอยากให้ผู้เล่นรับบทเป็นนักรบผู้กล้าหาญฝ่าฟันอุปสรรคและเอาชนะเกมได้

ซึ่งเกมผมได้รับแรงบันดาลใจมาจากเกม Mario กับ Rockman ซึ่งจะเป็นเกมแนวผจญภัยที่ดังในยุค 90 แล้วผมก็เคยเล่นและเคยเห็นผ่านตามาบ้าง การเล่นไม่เข้าใจยากและสนุกมาก



เกม Mario



เกม Rockman

## วิธีการเล่น

### หน้า Menu



ปุ่มเริ่มเกม

ปุ่มออกเกม

ปุ่ม How To Play

### หน้า How To Play



ปุ่มคำสั่งต่าง ๆ ใน

วิธีการเก็บคะแนน

HP ลด

ปุ่มกลับหน้าเมนู

## หน้าเกม



## เกมนี้จะจบเมื่อ

- หัวใจหมด เกมจะ Over
- ตกลาวา เกมจะ Over
- มาบอสเสร็จ เกมจะ Clear

การเก็บคะแนน จะขึ้นอยู่กับจำนวน Coin ที่เก็บได้โดยถ้า Score ปัจจุบันมากกว่า High Score จะทำการเขียนข้อมูล High Score ขึ้นมาใหม่

# อธิบายโค้ด

## EMPTY WINDOW

```
TheWarrior.py > ...
1 import pygame
2 from pygame import mixer
3 import os
4 import random
5 import csv
6
7 mixer.init()
8 pygame.init()
9
10 #set หน้าเกม
11 WINDOW_WIDTH = 680
12 WINDOW_HEIGHT = 600
13 screen = pygame.display.set_mode((WINDOW_WIDTH, WINDOW_HEIGHT))
14 pygame.display.set_caption("The Warrior")
```

## Set ค่าต่าง ๆ ที่ใช้

```
16 #set FPS
17 clock = pygame.time.Clock()
18 FPS = 0
19
20 #set ค่าต่างๆ
21 GRAVITY = 0.75
22 TILE_SIZE = 40
23 ROWS = 15
24 COLS = 17
25 TILE_SIZE = WINDOW_HEIGHT // ROWS
26 TILE_TYPES = 10
27 MAX_LEVELS = 6
28 level = 1
29 start_game = False
30 score = 0
31 moving_left = False
32 moving_right = False
33 shoot = False
```

## Load Images

```
54 #Images
55 img_list = []
56 for x in range(TILE_TYPES):
57     img = pygame.image.load('img/tile/x.png')
58     if x % 7:
59         img = pygame.transform.scale(img, (50, 80))
60     else:
61         img = pygame.transform.scale(img, (TILE_SIZE, TILE_SIZE))
62     img_list.append(img)
63
64 #Weapon
65 bullet_img = pygame.image.load('img/Fire/fire.png').convert_alpha()
66 bullet_img = pygame.transform.scale(bullet_img, (59, 42))
67
68 #Weapon demon
69 bullet_demon = pygame.image.load('img/Fire/demon.png').convert_alpha()
70 bullet_demon = pygame.transform.scale(bullet_demon, (59, 42))
71
72 #Heal Item
73 heal_box_img = pygame.image.load('img/Icons/heart.png').convert_alpha()
74 heal_box_img = pygame.transform.scale(heal_box_img, (30, 30))
75 heal_bar = pygame.image.load('img/Icons/heart_bar.png').convert_alpha()
76 heal_bar = pygame.transform.scale(heal_bar, (125, 25))
77 coin_box_img = pygame.image.load('img/Icons/coin.png').convert_alpha()
78 coin_box_img = pygame.transform.scale(coin_box_img, (20, 20))
79
80 items = {
81     'heal': heal_box_img,
82     'coin': coin_box_img
83 }
84
85 #Game Menu
86 menu_img = pygame.image.load('img/GUI/main.png')
87 menu_img = pygame.transform.scale(menu_img, (600, 600))
88 over_img = pygame.image.load('img/GUI/over.png')
89 over_img = pygame.transform.scale(over_img, (600, 600))
90 clear_img = pygame.image.load('img/GUI/clear.png')
91 clear_img = pygame.transform.scale(clear_img, (600, 600))
92 howplay_img = pygame.image.load('img/GUI/howplay.png')
93 howplay_img = pygame.transform.scale(howplay_img, (600, 600))
94
95 #Game Home
96 start_img = pygame.image.load('img/GUI/Start.png').convert_alpha()
97 exit_img = pygame.image.load('img/GUI/out.png').convert_alpha()
98 howplay_img = pygame.image.load('img/GUI/how.png').convert_alpha()
99 home_img = pygame.image.load('img/GUI/home.png').convert_alpha()
100
101 #Background
102 bg_img_1 = pygame.image.load('img/background/parallax-mountain-bg.png')
103 bg_img_2 = pygame.image.load('img/background/parallax-mountain-foreground-trees.png')
104 bg_img_2 = pygame.transform.scale(bg_img_2, (1000, 600))
105 bg_img_3 = pygame.image.load('img/background/parallax-mountain-mountain-far.png')
106 bg_img_3 = pygame.transform.scale(bg_img_3, (1000, 600))
107 bg_img_4 = pygame.image.load('img/background/parallax-mountain-mountains.png')
108 bg_img_4 = pygame.transform.scale(bg_img_4, (1000, 600))
109 bg_img_5 = pygame.image.load('img/background/parallax-mountain-trees.png')
110 bg_img_5 = pygame.transform.scale(bg_img_5, (1000, 600))
```

## Sounds and Music

```
35 #โหลดเพลง
36 pygame.mixer.music.load('sound/Sound_BG.wav')
37 pygame.mixer.music.set_volume(0.3)
38 pygame.mixer.music.play(-1, 0.0, 5000)
39 coin_fx = pygame.mixer.Sound('sound/coin.wav')
40 coin_fx.set_volume(2)
41 health_fx = pygame.mixer.Sound('sound/alive.wav')
42 health_fx.set_volume(2)
43 hit_fx = pygame.mixer.Sound('sound/hit.wav')
44 hit_fx.set_volume(0.3)
45 completed_fx = pygame.mixer.Sound('sound/completed.wav')
46 completed_fx.set_volume(0.3)
47 over_fx = pygame.mixer.Sound('sound/game_over.wav')
48 over_fx.set_volume(0.3)
49 fire_fx = pygame.mixer.Sound('sound/fire.wav')
50 fire_fx.set_volume(0.3)
51 hit_player_fx = pygame.mixer.Sound('sound/hit_player.wav')
52 hit_player_fx.set_volume(0.3)
53
```

## Load Font

```
112 #โหลด font
113 font_score = pygame.font.Font('GROBOLD.ttf', 50)
114 font = pygame.font.Font('Noah-Bold.otf', 20)
```

## ฟังก์ชัน ใช้ Score บนเกม

```
116 #Score
117 def draw_text(text, font, text_col, x, y):
118     coin_img = pygame.image.load('img/Icons/coin.png').convert_alpha()
119     coin_img = pygame.transform.scale(coin_img, (20, 20))
120     img = font.render(text, True, text_col)
121     screen.blit(coin_img, (x, y-2))
122     screen.blit(img, (x + 20, y-5))
```

## สร้างไฟล์ txt เก็บ High Score

```
124 #High Score
125 if os.path.exists('score.txt'):
126     with open('score.txt', 'r') as file:
127         high_score = int(file.read())
128 else:
129     high_score = 0
```

## ฟังก์ชัน Reset ด้าน

```
131 #Reset ด้าน
132 def reset_level():
133     bullet_group.empty()
134     item_box_group.empty()
135     zombie_group.empty()
136     demon_group.empty()
137     boss_group.empty()
138     exit_group.empty()
139     nava_group.empty()
140     property_group.empty()
141
142 data = []
143 for row in range(ROWS):
144     r = [-1] * COLS
145     data.append(r)
146 return data
```

## Class Player

```
148 class Player(pygame.sprite.Sprite):
149     def __init__(self, x, y, speed):
150         pygame.sprite.Sprite.__init__(self)
151         self.alive = True
152         self.speed = speed
153         self.shoot_cooldown = 0
154         self.health = 5
155         self.max_health = self.health
156         self.coins = 0
157         self.direction = 1
158         self.vel_y = 0
159         self.jump = False
160         self.in_air = True
161         self.flip = False
162         self.animation_list = []
163         self.frame_index = 0
164         self.action = 0
165         self.update_time = pygame.time.get_ticks()
166         self.immortal = False
167         self.complete = False
168
169     #animation
170     animation_types = ['Idle', 'run', 'Jump', 'Attack', 'Death']
171     for animation in animation_types:
172         temp_list = []
173         num_of_frames = len(os.listdir(f'img/player/{animation}'))
174         for num in range(num_of_frames):
175             img = pygame.image.load(f'img/player/{animation}/{num}.png').convert_alpha()
176             img = pygame.transform.scale(img, (120, 110))
177             temp_list.append(img)
178             self.animation_list.append(temp_list)
179
180     self.image = self.animation_list[self.action][self.frame_index]
181     self.rect = self.image.get_rect()
182     self.rect.center = (x, y)
183     self.rect.x = x
184     self.rect.y = y
185     self.width = self.image.get_width()
186     self.height = self.image.get_height()
187     self.hitbox = (self.rect.x + 45, self.rect.y + 35, 20, 75)
188
```

## การเคลื่อนไหวของ Class Player

```
189 #update #action
190 def update(self):
191     self.update_animation()
192     self.check_alive()
193     if self.shoot_cooldown > 0 :
194         self.shoot_cooldown -= 1
195
196     def move(self, moving_left, moving_right):
197         dx = 0
198         dy = 0
199         #วิ่งซ้าย/ขวา
200         if moving_left:
201             dx = -self.speed
202             self.flip = True
203             self.direction = -1
204         if moving_right:
205             dx = self.speed
206             self.flip = False
207             self.direction = 1
208         #กระโดด
209         if self.jump == True and self.in_air == False :
210             self.vel_y = -12
211             self.jump = False
212             self.in_air = True
213
214         self.vel_y += GRAVITY
215         if self.vel_y > 10:
216             self.vel_y = 10
217         dy += self.vel_y
218         #hitbox
219         for tile in world.obstacle_list:
220             if tile[1].colliderect(self.rect.x + 45 + dx, self.rect.y + 35, 20, 75):
221                 dx = 0
222             if tile[1].colliderect(self.rect.x + 45, self.rect.y + 35 + dy, 20, 75):
223                 dy = 0
224             if self.vel_y < 0:
225                 self.vel_y = 0
226                 dy = tile[1].bottom - self.rect.top
227             elif self.vel_y >= 0:
228                 self.vel_y = 0
229                 self.in_air = False
230                 dy = tile[1].top - self.rect.bottom
231
```

## ตรวจสอบสถานะของ Class Player

```
232 #หาเหรียญ
233 for rava in rava_group:
234     if rava.rect.colliderect(self.hitbox) :
235         self.health = 0
236
237 #ตรวจอุปสรรค
238 self.rect.x += dx
239 self.rect.y += dy
240 self.hitbox = (self.rect.x + 45, self.rect.y + 35, 20, 75)
241
242 #ตรวจจบ
243 level_complete = False
244 for next in exit_group:
245     if next.rect.colliderect(self.hitbox) :
246         level_complete = True
247         return level_complete
248
249 #จบ
250 for property in property_group:
251     if property.rect.colliderect(self.hitbox) and clear_num == 1:
252         self.complete = True
253         completed_fx.play()
254
```

## ฟังก์ชันการโจมตีของ Class Player

```
255 #ยิง
256 def shoot(self):
257     if self.shoot_cooldown == 0 :
258         hit_fx.play()
259         self.shoot_cooldown = 20
260         bullet = Bullet(self.rect.centerx + 25 * self.direction, self.rect.centery + 5, self.direction, 1)
261         bullet_group.add(bullet)
262
```

## Animation ของ Class Player

```
280 #เปลี่ยนรูป
281 def update_action(self, new_action):
282     if new_action != self.action :
283         self.action = new_action
284         self.frame_index = 0
285         self.update_time = pygame.time.get_ticks()
286
```

## เช็คสถานะ HP ของ Class Player

```
287 #เช็คเลือด
288 def check_alive(self):
289     if self.health <= 0 :
290         self.health = 0
291         self.speed = 0
292         self.alive = False
293         self.update_action(4)
294
```

## ฟังก์ชันตำแหน่ง และ Draw Class Player

```
295 #set #hitbox
296 def setlocation(self, x, y):
297     self.rect.center = (x, y)
298     self.rect.x = x
299     self.rect.y = y
300     self.hitbox = (self.rect.x + 45, self.rect.y + 35, 20, 75)
301
302 def draw(self):
303     screen.blit(pygame.transform.flip(self.image, self.flip, False), self.rect)
304     # pygame.draw.rect(screen, (255,255,255), self.hitbox, 2)
305
```

## Class Enemy

```
307 class Enemy(pygame.sprite.Sprite):
308     def __init__(self, char_type, x, y, speed):
309         pygame.sprite.Sprite.__init__(self)
310         self.alive = True
311         self.char_type = char_type
312         self.speed = speed
313         self.shoot_cooldown = 0
314         if self.char_type == 'Zombie' :
315             self.health = 20
316         if self.char_type == 'demon' :
317             self.health = 10
318         if self.char_type == 'boss' :
319             self.health = 100
320         self.direction = 1
321         self.flip = False
322         self.animation_list = []
323         self.frame_index = 0
324         self.action = 0
325         self.update_time = pygame.time.get_ticks()
326         self.attack_time = 0
327
328     #animation
329     animation_types = ['Idle', 'run', 'Death', 'Attack']
330     for animation in animation_types:
331         temp_list = []
332         num_of_frames = len(os.listdir(f'img/enemy/{self.char_type}/{animation}'))
333         for num in range(num_of_frames):
334             img = pygame.image.load(f'img/enemy/{self.char_type}/{animation}/{num}.png').convert_alpha()
335
336             if self.char_type == 'boss' :
337                 img = pygame.transform.scale(img, (150, 150))
338                 temp_list.append(img)
339
340             elif animation == 'Death' and self.char_type != 'boss' :
341                 img = pygame.transform.scale(img, (80, 80))
342                 temp_list.append(img)
343             elif self.char_type != 'boss':
344                 img = pygame.transform.scale(img, (80, 80))
345                 temp_list.append(img)
346             self.animation_list.append(temp_list)
347
348     self.image = self.animation_list[self.action][self.frame_index]
349     self.rect = self.image.get_rect()
350     self.rect.center = (x, y)
351     self.rect.x = x
352     self.rect.y = y
353     self.move_counter = 0
354     self.idling = False
355     self.idling_counter = 0
356     self.vision = pygame.Rect(0, 0, 350, 20)
357     if self.char_type == 'boss' :
358         self.hitbox = (self.rect.x + 40, self.rect.y + 35, 60, 100)
359     elif self.char_type != 'boss' :
360         self.hitbox = (self.rect.x + 25, self.rect.y + 10, 40, 70)
361
```

## การเคลื่อนไหวของ Class Enemy

```
362 #update direction
363 def update(self):
364     self.update_animation()
365     self.check_alive()
366     if self.shoot_cooldown > 0 :
367         self.shoot_cooldown -= 1
368
369 def move(self, moving_left, moving_right):
370     dx = 0
371     dy = 0
372     #เคลื่อนซ้าย
373     if moving_left:
374         dx = -self.speed
375         self.flip = True
376         self.direction = -1
377     if moving_right:
378         dx = self.speed
379         self.flip = False
380         self.direction = 1
381
382     #เคลื่อนตามแนว y
383     self.rect.x += dx
384     self.rect.y += dy
385     if self.char_type == 'boss':
386         self.hitbox = (self.rect.x + 40, self.rect.y + 35, 60, 100)
387     elif self.char_type != 'boss':
388         self.hitbox = (self.rect.x + 25, self.rect.y + 10, 40, 70)
389
390 #ยิงกระสุนปืน
391 def ai(self):
392     # Zombie
393     if self.alive and self.char_type == 'zombie':
394         if self.direction == 1:
395             ai_moving_right = True
396         else:
397             ai_moving_right = False
398         ai_moving_left = not ai_moving_right
399         self.move(ai_moving_left, ai_moving_right)
400         self.update_action(1)
401         self.move_counter += 1
402
403         if self.move_counter > 10 :
404             self.direction *= -1
405             self.move_counter *= -1
406     # Demon
407     if self.alive and self.char_type == 'demon':
408         self.vision.center = (self.rect.centerx + 150 * self.direction, self.rect.centery)
409         if self.vision.collidect(player.hitbox) and player.alive :
410             self.shoot()
411         else:
412             if random.randint(1, 20) == 1:
413                 self.direction = -1
414                 self.flip = True
415             if random.randint(1, 20) == 5:
416                 self.direction = 1
417                 self.flip = False
418     #Boss
419     if self.alive and self.char_type == 'boss':
420         if self.idling == False and random.randint(1, 200) == 1:
421             self.update_action(0)
422             self.idling = True
423             self.idling_counter = 50
424         if self.vision.collidect(player.hitbox) and player.alive :
425             self.update_action(1)
426             self.shoot()
427         else:
428             if self.idling == False:
429                 if self.direction == 1:
430                     ai_moving_right = True
431                 else:
432                     ai_moving_right = False
433                 ai_moving_left = not ai_moving_right
434                 self.move(ai_moving_left, ai_moving_right)
435                 self.update_action(1)
436                 self.move_counter += 1
437                 self.vision.center = (self.rect.centerx + 150 * self.direction, self.rect.centery)
438                 # pygame.draw.rect(screen, (255,255,255), self.hitbox)
439
440                 if self.move_counter > 10:
441                     self.direction *= -1
442                     self.move_counter *= -1
443             else:
444                 self.idling_counter -= 1
445                 if self.idling_counter <= 0:
446                     self.idling = False
```

## ฟังก์ชันการโจมตีของ Class Enemy

```
390 #sh
391 def shoot(self):
392     if self.shoot_cooldown == 0 :
393         fire_fx.play()
394         self.shoot_cooldown = 30
395         bullet = Bullet(self.rect.centerx + 25 * self.direction, self.rect.centery + 5, self.direction, 2)
396         bullet.group.add(bullet)
```

## Animation และ เช็คสถานะ HP ของ Class Enemy

```
456 #update action
457 def update_animation(self):
458     ANIMATION_COOLDOWN = 100
459     self.image = self.animation_list[self.action][self.frame_index]
460     if pygame.time.get_ticks() > self.update_time + ANIMATION_COOLDOWN:
461         self.update_time = pygame.time.get_ticks()
462         self.frame_index += 1
463     if self.frame_index > len(self.animation_list[self.action]):
464         if self.action == 2 :
465             self.frame_index = len(self.animation_list[self.action]) - 1
466         else:
467             self.frame_index = 0
468
469 #update action
470 def update_action(self, new_action):
471     if new_action != self.action:
472         self.action = new_action
473         self.frame_index = 0
474         self.update_time = pygame.time.get_ticks()
475
476 #check alive
477 def check_alive(self):
478     if self.health <= 0 :
479         self.health = 0
480         self.speed = 0
481         self.alive = False
482         self.update_action(2)
483
```

## ฟังก์ชันโจมตี Player และ Draw Class Enemy

```
484 #draw
485 def attack(self):
486     if self.alive and player.alive :
487         if self.rect.collidect(player.hitbox):
488             self.attack_time += 0.2
489             if player.immortal == False:
490                 hit_player_fx.play()
491                 player.health -= 1
492             if int(self.attack_time) == 3 :
493                 player.immortal = False
494                 self.attack_time = 0
495             else:
496                 player.immortal = True
497
498 def draw(self):
499     screen.blit(pygame.transform.flip(self.image, self.flip, False), self.rect)
500     # pygame.draw.rect(screen, (255,255,255), self.hitbox, 2)
```

## ฟังก์ชันสร้าง Coin กับ HP

```
502 #load item box
503 class ItemBox(pygame.sprite.Sprite):
504     def __init__(self, item_type, x, y):
505         pygame.sprite.Sprite.__init__(self)
506         self.item_type = item_type
507         self.image = item_boxes[self.item_type]
508         self.rect = self.image.get_rect()
509         self.rect.midtop = (x + TILE_SIZE // 2, y + (TILE_SIZE - self.image.get_height()))
510
511 def update(self):
512     if self.rect.collidect(player.hitbox):
513         if self.item_type == 'Health':
514             health_fx.play()
515             player.health += 1
516             if player.health > player.max_health:
517                 player.health = player.max_health
518             player.coin += 20
519         elif self.item_type == 'coin':
520             coin_fx.play()
521             player.coin += 20
522         self.kill()
```

## ฟังก์ชันสร้างประตูเปลี่ยนด่าน

```
524 #door
525 class Exit(pygame.sprite.Sprite):
526     def __init__(self, img, x, y):
527         pygame.sprite.Sprite.__init__(self)
528         self.image = img
529         self.rect = self.image.get_rect()
530         self.rect.midtop = (x + TILE_SIZE // 2, y + (TILE_SIZE - self.image.get_height()))
531
```

## ฟังก์ชันสร้างลาวา

```
532 #lava
533 class Lava(pygame.sprite.Sprite):
534     def __init__(self, img, x, y):
535         pygame.sprite.Sprite.__init__(self)
536         self.image = img
537         self.rect = self.image.get_rect()
538         self.rect.midtop = (x + TILE_SIZE // 2, y + (TILE_SIZE - self.image.get_height()))
```

## ฟังก์ชันสร้างสมบัติ

```
540 #item
541 class Property(pygame.sprite.Sprite):
542     def __init__(self, img, x, y):
543         pygame.sprite.Sprite.__init__(self)
544         self.image = img
545         self.rect = self.image.get_rect()
546         self.rect.midtop = (x + TILE_SIZE // 2, y + (TILE_SIZE - self.image.get_height()))
547
```



## ฟังก์ชันสร้างกระสุน

```
540 #self.bullet
541 class Bullet(pygame.sprite.Sprite):
542     def __init__(self, x, y, direction, types):
543         pygame.sprite.Sprite.__init__(self)
544         self.types = types
545         if self.types == 1 :
546             type_img = bullet_img
547             self.speed = 20
548         elif self.types == 2 :
549             type_img = bullet_demon
550             self.speed = 10
551         if direction == 1 :
552             self.image = type_img
553         elif direction == -1 :
554             self.image = pygame.transform.flip(type_img, True, False)
555         self.rect = self.image.get_rect()
556         self.rect.center = (x, y)
557         self.direction = direction
558
559     def update(self):
560         self.rect.x += (self.direction * self.speed)
561         if self.rect.right < 0 or self.rect.left > WINDOW_WIDTH:
562             self.kill()
563
564     #กระสุนโจมตีผู้เล่น
565     for tile in world.obstacle_list:
566         if tile[1].colliderect(self.rect):
567             self.kill()
568
569     #ผู้เล่นโจมตีกระสุน
570     if self.rect.colliderect(player.hitbox) and self.types == 2 :
571         if player.alive:
572             player.health -= 1
573             self.kill()
574
575     #กระสุนโจมตีมอนสเตอร์
576     for zombie in zombie_group:
577         if pygame.sprite.spritecollide(zombie, bullet_group, False):
578             if self.rect.colliderect(zombie.hitbox) and self.types == 1:
579                 if zombie.alive:
580                     zombie.health -= 5
581                     player.coin += 5
582                     self.kill()
583
584     #มอนสเตอร์โจมตีกระสุน
585     for demon in demon_group:
586         if pygame.sprite.spritecollide(demon, bullet_group, False):
587             if self.rect.colliderect(demon.hitbox) and self.types == 1 :
588                 if demon.alive:
589                     demon.health -= 5
590                     player.coin += 5
591                     self.kill()
592
593     #bossโจมตีกระสุน
594     for boss in boss_group:
595         if pygame.sprite.spritecollide(boss, bullet_group, False):
596             if self.rect.colliderect(boss.hitbox) and self.types == 1 :
597                 if boss.alive:
598                     boss.health -= 5
599                     player.coin += 5
600                     self.kill()
```

## ฟังก์ชันสร้างปุ่ม Button

```
602 #self.button
603 class Button():
604     def __init__(self, x, y, image, scale):
605         width = image.get_width()
606         height = image.get_height()
607         self.image = pygame.transform.scale(image, (int(width * scale), int(height * scale)))
608         self.rect = self.image.get_rect()
609         self.rect.topleft = (x, y)
610         self.clicked = False
611
612     def draw(self, screen):
613         action = False
614         pos = pygame.mouse.get_pos()
615
616         #คลิกปุ่ม
617         if self.rect.collidepoint(pos):
618             if pygame.mouse.get_pressed()[0] == 1 and self.clicked == False:
619                 action = True
620                 self.clicked = True
621             if pygame.mouse.get_pressed()[0] == 0:
622                 self.clicked = False
623
624         #วาดปุ่ม
625         screen.blit(self.image, (self.rect.x, self.rect.y))
626         return action
627
628 #สร้างปุ่ม
629 start_button = Button(155, 320, start_img, 2)
630 howplay_button = Button(280, 320, howplay_img, 2)
631 exit_button = Button(400, 320, exit_img, 2)
632 home_button = Button(10, 480, home_img, 2)
```

## ฟังก์ชันรวมกลุ่มของแต่ละฟังก์ชัน

```
694 #group
695 bullet_group = pygame.sprite.Group()
696 item_box_group = pygame.sprite.Group()
697 zombie_group = pygame.sprite.Group()
698 demon_group = pygame.sprite.Group()
699 boss_group = pygame.sprite.Group()
700 exit_group = pygame.sprite.Group()
701 rava_group = pygame.sprite.Group()
702 property_group = pygame.sprite.Group()
```

## โค้ดอ่านข้อมูลจากไฟล์อื่น

```
706 #รวมสกอร์ทั้งหมด
707 world_data = []
708 for row in range(ROWS):
709     r = [-1] * COLS
710     world_data.append(r)
711 with open('level/level_data.csv', newline='') as csvfile:
712     reader = csv.reader(csvfile, delimiter=',')
713     for x, row in enumerate(reader):
714         for y, tile in enumerate(row):
715             world_data[x][y] = int(tile)
716 world = world()
717 player = world.process_data(world_data)
```

## โค้ดหน้า Menu

```
610 #self.world
611 class World():
612     def __init__(self):
613         self.obstacle_list = []
614
615     def process_data(self, data, player_data = None):
616         for y, row in enumerate(data):
617             for x, tile in enumerate(row):
618                 if tile == 0 :
619                     img = img_list[tile]
620                     img_rect = img.get_rect()
621                     img_rect.x = x * TILE_SIZE
622                     img_rect.y = y * TILE_SIZE
623                     tile_data = (img, img_rect)
624                     if tile == 0 :
625                         self.obstacle_list.append(tile_data)
626                     elif tile == 1 :
627                         if player_data == None :
628                             player = Player(x * TILE_SIZE, y * TILE_SIZE, 15)
629                         else:
630                             player = player_data
631                             player.setlocation(x * TILE_SIZE, y * TILE_SIZE)
632                     elif tile == 2 :
633                         zombie = Enemy('zombie', x * TILE_SIZE, y * TILE_SIZE - 40, 3)
634                         zombie_group.add(zombie)
635                     elif tile == 3 :
636                         demon = Enemy('demon', x * TILE_SIZE, y * TILE_SIZE - 40, 15)
637                         demon_group.add(demon)
638                     elif tile == 4 :
639                         boss = Enemy('boss', x * TILE_SIZE, y * TILE_SIZE - 90, 3)
640                         boss_group.add(boss)
641                     elif tile == 5 :
642                         item_box = Itembox('coin', x * TILE_SIZE, y * TILE_SIZE)
643                         item_box_group.add(item_box)
644                     elif tile == 6 :
645                         item_box = Itembox('health', x * TILE_SIZE, y * TILE_SIZE)
646                         item_box_group.add(item_box)
647                     elif tile == 7 :
648                         exit = Exit(img, x * TILE_SIZE, y * TILE_SIZE)
649                         exit_group.add(exit)
650                     elif tile == 8 :
651                         rava = Rava(img, x * TILE_SIZE, y * TILE_SIZE)
652                         rava_group.add(rava)
653                     elif tile == 9 :
654                         property = Property(img, x * TILE_SIZE, y * TILE_SIZE)
655                         property_group.add(property)
656
657         return player
658
659     def draw(self):
660         for tile in self.obstacle_list:
661             screen.blit(tile[0], tile[1])
```

## โค้ดหน้า Menu

```
719 run = True
720 while run:
721     clock.tick(FPS)
722     #หน้าจอ
723     if start_game == False :
724         screen.blit(menu_img, (0, 0))
725         #score high score
726         high_score_surface = font.render('High Score : (high_score)', True, (255, 255, 255))
727         high_score_rect = high_score_surface.get_rect()
728         high_score_rect.center = (330, 300)
729         screen.blit(high_score_surface, high_score_rect)
730         if start_button.draw(screen) :
731             start_game = True
732         if exit_button.draw(screen) :
733             run = False
734         if howplay_button.draw(screen):
735             howplay = True
```

## โค้ดหลักของเกม ให้สร้างรูปต่างๆ และ Player

```
736 #player
737 #วาดพื้นหลัง
738 screen.blit(bg_img_1, (-100, 0))
739 screen.blit(bg_img_2, (-100, 0))
740 screen.blit(bg_img_3, (-100, 0))
741 screen.blit(bg_img_4, (-100, 0))
742 screen.blit(bg_img_5, (-100, 0))
743 screen.blit(heal_bar, (52, 12))
744
745 score += player.coin
746 player.coin = 0
747 draw_text(f' : {score}', font, (255, 255, 255), 50, 50) #vga score
748 for x in range(player.health):
749     screen.blit(heal_box_img, (50 + (25 * x), 10)) #vga health
750
751 player.draw()
752 bullet_group.draw(screen)
753 item_box_group.draw(screen)
754 exit_group.draw(screen)
755 rava_group.draw(screen)
756 world.draw()
757 player.update()
758 bullet_group.update()
759 item_box_group.update()
760 exit_group.update()
761 rava_group.update()
```

## โค้ดสร้าง Enemy

```
761         for zombie in zombie_group:
762             zombie.ai()
763             zombie.update()
764             zombie.draw()
765             zombie.attack()
766
767         for demon in demon_group:
768             demon.ai()
769             demon.update()
770             demon.draw()
771             demon.attack()
772
773         for boss in boss_group:
774             boss.ai()
775             boss.update()
776             boss.draw()
777             boss.attack()
778
779         #clear data
780         if boss.health <= 0:
781             property_group.draw(screen)
782             property_group.update()
783             clear_num = 1
784
```

## โค้ดเปลี่ยน Animation ของ Player และ เปลี่ยนด่าน

```
786     #player มีชีวิต
787     if player.alive:
788         if shoot :
789             player.update_action(1) # 1:1s
790             player.shoot()
791         elif moving_left or moving_right :
792             player.update_action(1) # 1:1s
793         elif player.in_air :
794             player.update_action(2) # 2:1m:1s
795         else:
796             player.update_action(0) # 0:0.5s
797         level_complete = player.move(moving_left, moving_right)
798         #เปลี่ยนด่าน
799         if level_complete :
800             level += 1
801             world_data = reset_level()
802             if level <= MAX_LEVELS :
803                 with open('level\\level_data.csv', newline='') as csvfile:
804                     reader = csv.reader(csvfile, delimiter=',')
805                     for x, row in enumerate(reader):
806                         for y, tile in enumerate(row):
807                             world_data[x][y] = int(tile)
808             world = World()
809             player = world.process_data(world_data, player)
```

## โค้ดตรวจสอบ Game Clear

```
811     #GameOver
812     if player.complete :
813         screen.blit(clear_img,(0, 0))
814         #make score
815         score_surface = font_score.render('Score : (score)',True,(255,255,255))
816         score_rect = score_surface.get_rect()
817         score_rect.center = (320, 350)
818         screen.blit(score_surface, score_rect)
819         #make high score
820         high_score_surface = font_score.render('High Score : (high_score)',True,(255,255,255))
821         high_score_rect = high_score_surface.get_rect()
822         high_score_rect.center = (320, 430)
823         screen.blit(high_score_surface, high_score_rect)
824         #show high score
825         if score > high_score:
826             high_score = score
827             with open('score.txt', 'w') as file:
828                 file.write(str(high_score))
829         #show home
830         if home_button.draw(screen) :
831             start_game = False
832             world_data = reset_level()
833             level = 1
834             score = 0
835             with open('level\\level_data.csv', newline='') as csvfile:
836                 reader = csv.reader(csvfile, delimiter=',')
837                 for x, row in enumerate(reader):
838                     for y, tile in enumerate(row):
839                         world_data[x][y] = int(tile)
840             world = World()
841             player = world.process_data(world_data)
```

## โค้ดตรวจสอบ Game Over

```
842     #player ไม่มีชีวิต
843     else:
844         over_fx.play()
845         screen.blit(over_img,(0, 0))
846         #make score
847         score_surface = font_score.render('Score : (score)',True,(255,255,255))
848         score_rect = score_surface.get_rect()
849         score_rect.center = (320, 350)
850         screen.blit(score_surface, score_rect)
851         #make high score
852         high_score_surface = font_score.render('High Score : (high_score)',True,(255,255,255))
853         high_score_rect = high_score_surface.get_rect()
854         high_score_rect.center = (320, 430)
855         screen.blit(high_score_surface, high_score_rect)
856         #show high score
857         if score > high_score:
858             high_score = score
859             with open('score.txt', 'w') as file:
860                 file.write(str(high_score))
861         #show home
862         if home_button.draw(screen) :
863             start_game = False
864             world_data = reset_level()
865             level = 1
866             score = 0
867             with open('level\\level_data.csv', newline='') as csvfile:
868                 reader = csv.reader(csvfile, delimiter=',')
869                 for x, row in enumerate(reader):
870                     for y, tile in enumerate(row):
871                         world_data[x][y] = int(tile)
872             world = World()
```

## โค้ดสร้างหน้า How To Play

```
876     #howplay
877     if howplay :
878         screen.blit(howplay_img,(0, 0))
879         if home_button.draw(screen) :
880             howplay = False
881             world_data = reset_level()
882             level = 1
883             score = 0
884             with open('level\\level_data.csv', newline='') as csvfile:
885                 reader = csv.reader(csvfile, delimiter=',')
886                 for x, row in enumerate(reader):
887                     for y, tile in enumerate(row):
888                         world_data[x][y] = int(tile)
889             world = World()
890             player = world.process_data(world_data)
```

## Event Loop

```
891
892         for event in pygame.event.get():
893             if event.type == pygame.QUIT:
894                 run = False
895
```

## Keyboard Events & Quit Event

```
896     #addfunction
897     if event.type == pygame.KEYDOWN:
898         if event.key == pygame.K_LEFT:
899             moving_left = True
900         if event.key == pygame.K_RIGHT:
901             moving_right = True
902         if event.key == pygame.K_SPACE:
903             shoot = True
904         if event.key == pygame.K_UP and player.alive :
905             player.jump = True
906         if event.key == pygame.K_ESCAPE:
907             run = False
908
909     #ลบการเคลื่อนไหว
910     if event.type == pygame.KEYUP:
911         if event.key == pygame.K_LEFT:
912             moving_left = False
913         if event.key == pygame.K_RIGHT:
914             moving_right = False
915         if event.key == pygame.K_SPACE:
916             shoot = False
917
918     pygame.display.update()
919
920     pygame.quit()
```