Snake Game

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History of snake game and why I chose it

It originated in the 1976 two-player arcade video game Blockade from Gremlin Industries where the goal is to survive longer than the other player. The concept evolved into a single-player variant where a snake gets longer with each piece of food eaten—often apples or eggs.

New concepts I learned

I learned pygame, functions in python, and classes all in python. There was also harder logic that java so it was challenging.

Concepts I have a strong foundation on

I have a strong foundation on while and if loops, and booleans.

What was challenging

Moving and collision detection

```
def move(self):
    cur = self.get_head_position()
    x, y = self.direction
    new = (((cur[0] + (x * BLOCK_SIZE)) % WIDTH), (cur[1] + (y * BLOCK_SIZE)) % HEIGHT)
    if len(self.positions) > 2 and new in self.positions[2:]:
        return True
    else:
        self.positions.insert(0, new)
        if len(self.positions) > self.length:
            self.positions.pop()
        return False
```

What was fun

```
# Food class
class Food:
    def __init__(self):
        self.position = (0, 0)
        self.color = FOOD_COLOR
        self.randomize_position()

    def randomize_position(self):
        self.position = (random.randint(0, GRID_WIDTH - 1) * BLOCK_SIZE, random.randint(0, GRID_HEIGHT - 1) * BLOCK_SIZE)
```

Learned

```python
# Draw start screen
def draw_start_screen(surface):
    title_font = pygame.font.Font(None, 50)
    title_text = title_font.render("Snake Game", True, FONT_COLOR)
    title_rect = title_text.get_rect(center=(WIDTH // 2, HEIGHT // 4))

    button_font = pygame.font.Font(None, 30)
    button_text = button_font.render("Play", True, FONT_COLOR)
    button_rect = button_text.get_rect(center=(WIDTH // 2, HEIGHT // 2))

    surface.blit(title_text, title_rect)
    surface.blit(button_text, button_rect)
    pygame.draw.rect(surface, FONT_COLOR, button_rect, 1)

# Draw victory screen
def draw_victory_screen(surface):
    victory_font = pygame.font.Font(None, 50)
    victory_text = victory_font.render("You Win!", True, FONT_COLOR)
    victory_rect = victory_text.get_rect(center=(WIDTH // 2, HEIGHT // 2))
    surface.blit(victory_text, victory_rect)

# Draw score
def draw_score(surface, score):
    score_font = pygame.font.Font(None, 30)
    score_text = score_font.render(f"Score: {score}", True, FONT_COLOR)
    score_rect = score_text.get_rect(topright=(WIDTH - 20, 20))
    surface.blit(score_text, score_rect)
```

Also Learned

```
def handle_keys(self, keys):
    if keys[pygame.K_UP] and self.direction != DOWN:
        self.direction = UP
    elif keys[pygame.K_DOWN] and self.direction != UP:
        self.direction = DOWN
    elif keys[pygame.K_LEFT] and self.direction != RIGHT:
        self.direction = LEFT
    elif keys[pygame.K_RIGHT] and self.direction != LEFT:
        self.direction = RIGHT
```