THE SNAKE GAME

By Iddi and Bilal

INTRODUCTION

THIS IS A SIMPLE CONSOLE-BASED SNAKE GAME DEVELOPED IN C++ CREATED BY IDDI MUNKAILA & BILAL HUSSAIN. THE GAME FEATURES A SNAKE THAT CAN BE CONTROLLED USING THE KEYBOARD, WITH THE OBJECTIVE OF EATING FOOD WHILE AVOIDING PENETRATING THE EDGES OF THE GAME AREA. THE SNAKE DOES NOT MOVE AS A WHOLE AS A KEY FEATURE WHICH MAKES IT CHALLENGING FOR USERS.

OBJECTIVES

CREATE A CODE THAT INCLUDES :

- A CONSTANTLY ANIMATED SNAKE ON TERMINAL WITHIN THE GAME BOARD
- SNAKE SIZE 1 AT A RANDOM VALID LOCATION
- SNAKE SHOULD DIE ON CRASHING THE BORDERS
- A SNAKE WHICH IS NOT ABLE TO MOVE IN OPPOSITE DIRECTIONS
- GENERATE FOOD AT RANDOM LOCATIONS
- A SNAKE INCREASING ITS SIZE UPON EATING FOOD

OVERVIEW

FEATURES:

- SNAKE GROWS BY EATING FOOD
- GAME OVER ON WALL OR SELF-COLLISION
- MANUAL GROWTH OPTION

KEY COMPONENTS:

- GAME BOARD
- SNAKE
- FOOD
- USER INPUT HANDLING

GAME BOARD AND INITIALIZATION

```
#define BOARD_SIZE 30
#define EMPTY_CHAR ' '
#define EDGE_CHAR '#'
#define SNAKE_CHAR '$'
#define FOOD_CHAR '^'

char board[BOARD_SIZE][BOARD_SIZE];

void resetBoard() {
    for (int y = 0; y < BOARD_SIZE; ++y)
        for (int x = 0; x < BOARD_SIZE; ++x)
            board[y][x] = (x == 0 || x == BOARD_SIZE - 1 || y == 0 || y == BOARD_SIZE - 1) ? EDGE_CHAR :
EMPTY_CHAR;
}
```

SNAKE MOVEMENT

```
int moveSnake() {
    int newHeadRow = snakeBodyRow[0] + directionY;
    int newHeadCol = snakeBodyCol[0] + directionX;
```

USER INPUT/CONTROLS

```
if (_kbhit()) {
        switch (_getch()) {
            case 'w': if (directionY != 1) { directionX = 0;
directionY = -1; } break;
            case 's': if (directionY != -1) { directionX = 0;
directionY = 1; } break;
            case 'a': if (directionX != 1) { directionX = -1;
directionY = 0; } break;
            case 'd': if (directionX != -1) { directionX = 1;
directionY = 0; } break;
            case 'g':
                snakeLength++;
                printf("\a");
                break;
            case 'e':
                // Exit game
        }}}
```

- W: Move Up
- A: Move Left
- S: Move Down
- D: Move Right
- G: Grow the Snake
- E: Exit the Game

MAIN LOOP

```
int main() {
    // Initialization

    while (1) {
        draw();
        getUserInput();
        if (!moveSnake()) {
            printf("Game Over! Your score: %d\n", snakeLength - 1);
            break;
        }
        Sleep(100);
       return 0;
}
```

CONCLUSION

- SUCCESSFULLY IMPLEMENTED BASIC SNAKE GAME

KEY LEARNINGS:

-GAME LOOP STRUCTURE

-USER INPUT HANDLING

-COLLISION DETECTION

THE END
THANKS FOR WATCHING