ธีรุตม์ เอี้ยวสกุลรัตน์ 65010495 Lab8 พื้นฐานการเขียน Text-mode Game ครั้งที่ 4

```c
#include<stdio.h>
#include<conio.h>
#include<Windows.h>
#include<stdbool.h>
#include<time.h>

#define screen_x 80
#define screen_y 25
#define scount 40

HANDLE rHnd;
HANDLE wHnd;
DWORD fdwMode;

CHAR_INFO consoleBuffer[screen_x * screen_y];
COORD bufferSize = { screen_x,screen_y };
COORD characterPos = { 0,0 };
SMALL_RECT windowSize = { 0,0,screen_x - 1,screen_y - 1 };
COORD star[scount];
COORD ship;

int set_color = 7;
int life = 10;
bool play = true;

// Set cursor
void setcursor(bool visible)
{
    HANDLE console = GetStdHandle(STD_OUTPUT_HANDLE);
    CONSOLE_CURSOR_INFO lpCursor;
    lpCursor.bVisible = visible;
    lpCursor.dwSize = 20;
    SetConsoleCursorInfo(console, &lpCursor);
}
int setMode()
{
    rHnd = GetStdHandle(STD_INPUT_HANDLE);
    fdwMode = ENABLE_EXTENDED_FLAGS | ENABLE_WINDOW_INPUT | ENABLE_MOUSE_INPUT;
    SetConsoleMode(rHnd, fdwMode);
    return 0;
}
int setConsole(int x, int y)
{
    wHnd = GetStdHandle(STD_OUTPUT_HANDLE);
    SetConsoleWindowInfo(wHnd, TRUE, &windowSize);
    SetConsoleScreenBufferSize(wHnd, bufferSize);
    return 0;
}
void clear_buffer()
{
    for (int y = 0; y < screen_y; y++)
    {
        for (int x = 0; x < screen_x; x++)
        {
            consoleBuffer[x + screen_x * y].Char.AsciiChar = ' ';
            consoleBuffer[x + screen_x * y].Attributes = 7;
        }
    }
}
```

```
}
//Debug
void init_star()
{
    for (int i = 0; i < scount; i++)
    {
        //star[i] = {(rand() % screen_x), (rand() % screen_y)};
        star[i].X = rand() % screen_x;
        star[i].Y = rand() % screen_y;
    }
}
void star_fall()
{
    for (int i = 0; i < scount; i++)
    {
        if (star[i].Y >= screen_y - 1)
        {
            //star[i] = { (rand() % screen_x),1 };
            star[i].X = rand() % screen_x;
            star[i].Y = 1;
        }
        else
        {
            //star[i] = { star[i].X,star[i].Y + 1 };
            star[i].X = rand() % screen_x;
            star[i].Y = star[i].Y + 1;
        }
    }
}
void fill_star_to_buffer()
{
    for (int i = 0; i < scount; i++)
    {
        consoleBuffer[star[i].X + screen_x * star[i].Y].Char.AsciiChar = '*';
        consoleBuffer[star[i].X + screen_x * star[i].Y].Attributes = 7;
    }
}
void fill_buffer_to_console()
{
    WriteConsoleOutputA(wHnd, consoleBuffer, bufferSize, characterPos,&windowSize);
}
//Ship
void draw_ship(int x, int y, int color)
{
    //print <-0-> and color
    ship.X = x;
    ship.Y = y;
    consoleBuffer[ship.X + screen_x * ship.Y].Char.AsciiChar = '<';
    consoleBuffer[ship.X + screen_x * ship.Y].Attributes = color;
    consoleBuffer[ship.X + screen_x * ship.Y + 1].Char.AsciiChar = '-';
    consoleBuffer[ship.X + screen_x * ship.Y + 1].Attributes = color;
    consoleBuffer[ship.X + screen_x * ship.Y + 2].Char.AsciiChar = '0';
    consoleBuffer[ship.X + screen_x * ship.Y + 2].Attributes = color;
    consoleBuffer[ship.X + screen_x * ship.Y + 3].Char.AsciiChar = '-';
    consoleBuffer[ship.X + screen_x * ship.Y + 3].Attributes = color;
    consoleBuffer[ship.X + screen_x * ship.Y + 4].Char.AsciiChar = '>';
    consoleBuffer[ship.X + screen_x * ship.Y + 4].Attributes = color;
}
//check
void check_collision()
{
    for (int i = 0; i < scount; i++)
    {
        if ((ship.X == star[i].X || ship.X + 1 == star[i].X || ship.X + 2 == star[i].X || ship.X + 3 == star[i].X || ship.X + 4 == star[i].X) && ship.Y == star[i].Y)
        {
            star[i].X = rand() % screen_x;
            star[i].Y = 1;
            life--;
        }
        if (life == 0)
        {
            play = false;
        }
    }
}
//goto xy
void gotoxy(int x, int y)
{
    COORD c = { SHORT(x), SHORT(y) };
    SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE), c);
}
// Set color
void setcolor(int fg, int bg) {
    HANDLE hConsole = GetStdHandle(STD_OUTPUT_HANDLE);
    SetConsoleTextAttribute(hConsole, bg * 16 + fg);
}
//Life
void Life()
{
    setcolor(3, 0);
    gotoxy(0, 1);
    printf("Your Life : %d", life);
}
```

```
}

int main()
{
    setcursor(0);
    srand(time(NULL));
    setConsole(screen_x, screen_y);
    init_star();
    setMode();
    DWORD numEvents = 0;
    DWORD numEventsRead = 0;
    int posX = screen_x;
    int posY = screen_y;

    int set_color = 7;

    //Debug
    while (play)
    {
        GetNumberOfConsoleInputEvents(rHnd, &numEvents);
        if (numEvents != 0)
        {
            INPUT_RECORD* eventBuffer = new INPUT_RECORD[numEvents];
            ReadConsoleInput(rHnd, eventBuffer, numEvents, &numEventsRead);
            for (DWORD i = 0; i < numEventsRead; ++i)
            {
                if (eventBuffer[i].EventType == KEY_EVENT &&eventBuffer[i].Event.KeyEvent.bKeyDown == true)
                {
                    if (eventBuffer[i].Event.KeyEvent.wVirtualKeyCode == VK_ESCAPE) //key ESC
                    {
                        play = false;
                    }
                    //key c to random color
                    else if (eventBuffer[i].Event.KeyEvent.uChar.AsciiChar == 99)
                    {
                        set_color = rand() % 255 + 1;
                    }
                }
                else if (eventBuffer[i].EventType == MOUSE_EVENT)
                {
                    int posx = eventBuffer[i].Event.MouseEvent.dwMousePosition.X;
                    int posy = eventBuffer[i].Event.MouseEvent.dwMousePosition.Y;
                    //Left mouse click to random color
                    if (eventBuffer[i].Event.MouseEvent.dwButtonState && FROM_LEFT_1ST_BUTTON_PRESSED)
                    {
                        set_color = rand() % 255 + 1;
                    }
                    else if (eventBuffer[i].Event.MouseEvent.dwEventFlags & MOUSE_MOVED)
                    {
                        posX = posx;
                        posY = posy;
                    }
                }
            }
            delete[] eventBuffer;
        }
        star_fall();
        clear_buffer();
        fill_star_to_buffer();
        draw_ship(posX, posY, set_color);
        fill_buffer_to_console();
        check_collision();
        Life();
        Sleep(100);
    }
    return 0;
}
```


C:\Users\Teeruth\OneDrive\เดสก์ท็อป\ส่งงาน pro fun\lab\lab8\Lab8\x64\Debug\Lab8.exe
Your Life : 4
<-0->