Team Phoenix

Figure 1: Group icon.

Project:

Implement a Snake Game using Open GL.

Group Members:

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Technologies Used   :

C++ language and Open GL.

How to play the game   :

Snake game is a classic game which found in Nokia 5110 phones years ago. It is very simple game that anybody can play without any difficulty. This game is based on a snake and the snake should eat foods which appear here and there to earn points (marks).

In here, snake finds out to eat food on the sheet by turning here and there.   We used arrow keys to move here and there.
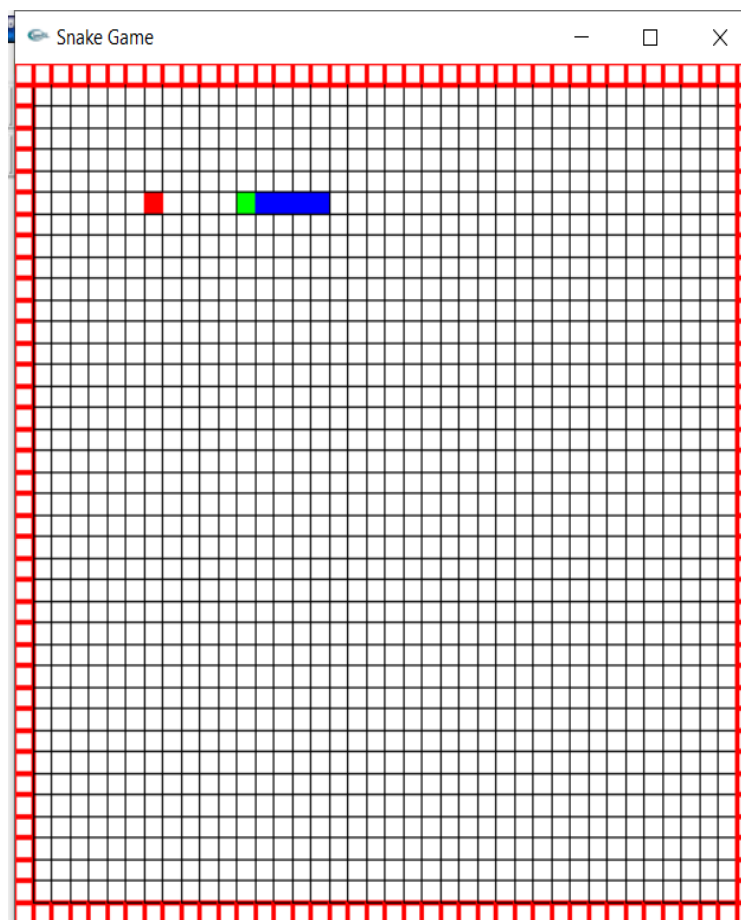

Figure 2: Snake finds out to eat food.

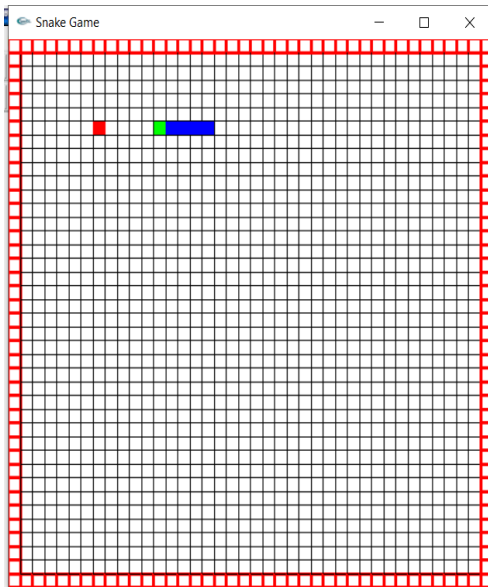When the snake eats food snake's size become longer.
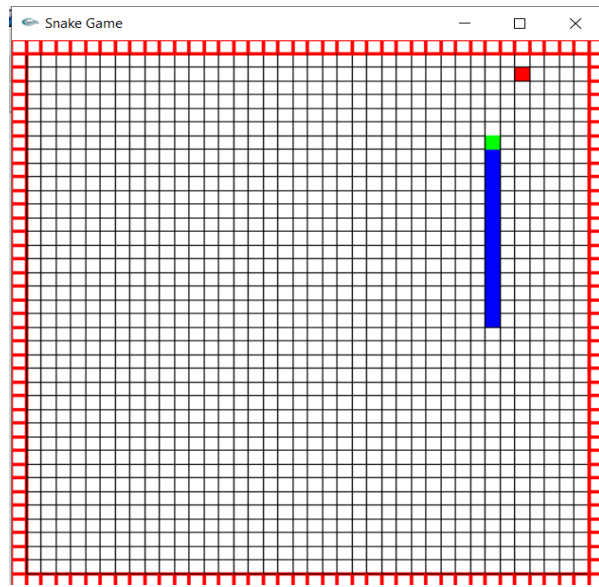

Figure 3: Before eating food   Figure 4: Snake become longer   after eating food.

When we are playing the game we have to be careful about the walls in the edges because when we hit on the walls we lose the game. As well as when the snake head will hit on its body, it will become a reason to lose the game.
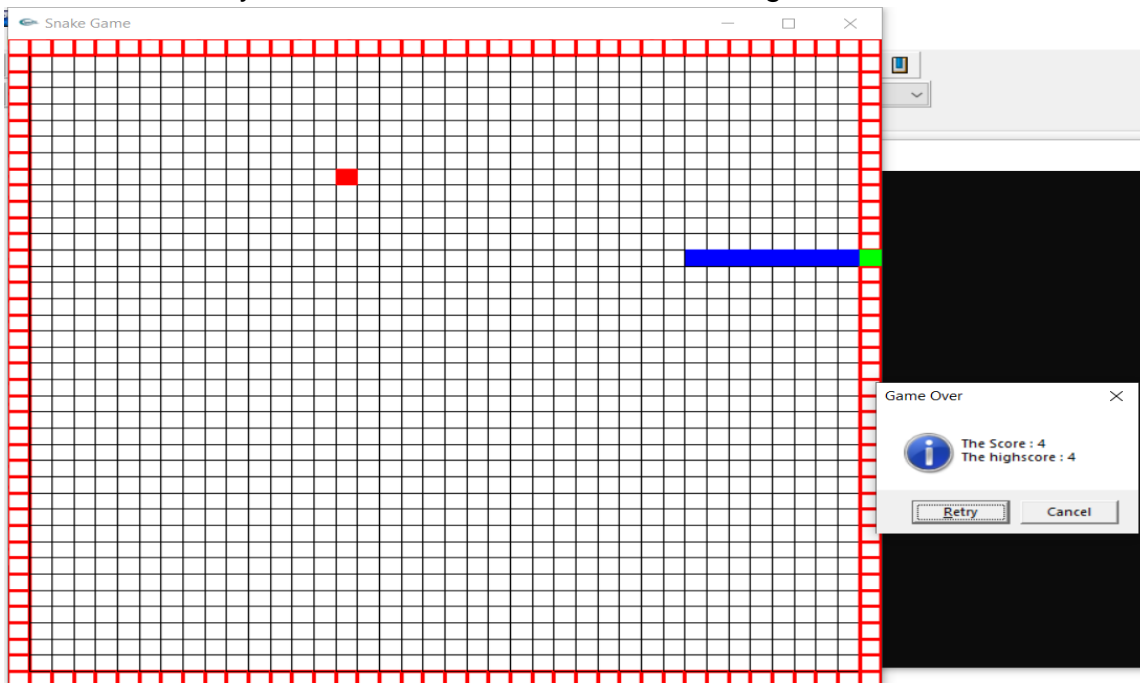

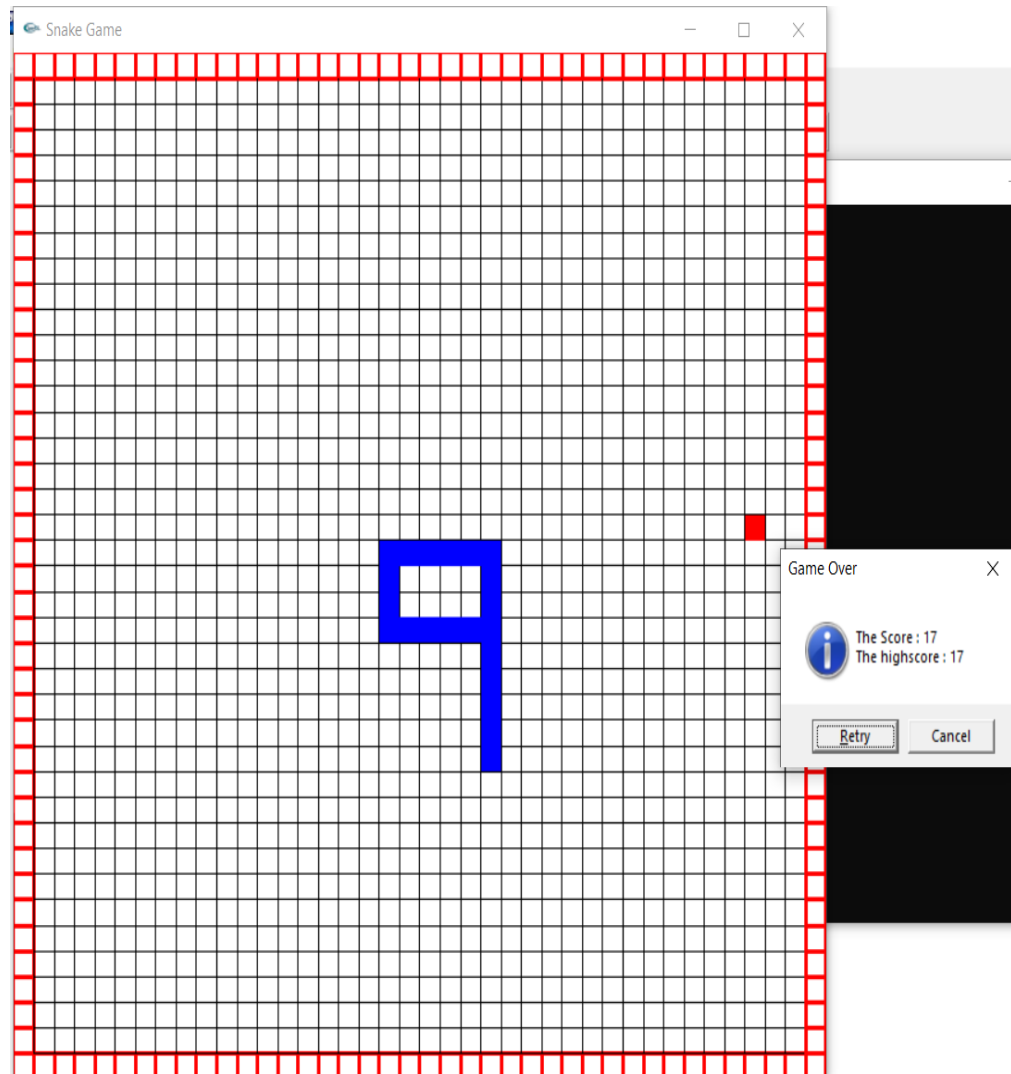Figure 5: Snake hits on the wall and lose the game.

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Figure 6: Snake head will hit on its body and lose the game.

When the snake eats food suddenly another food will arise on the sheet. The game is over when the snake hits on somewhere which described in above. When the game is over we can see a message box with "The Score" and "The High score". And also the message box has two buttons named Retry and Cancel. If we click on the Retry button the game will start on beginning with storing previous high score. At this time the score will remove. But the High score will save. If we click on the Cancel button the game will exit while removing previous Scores and high score.
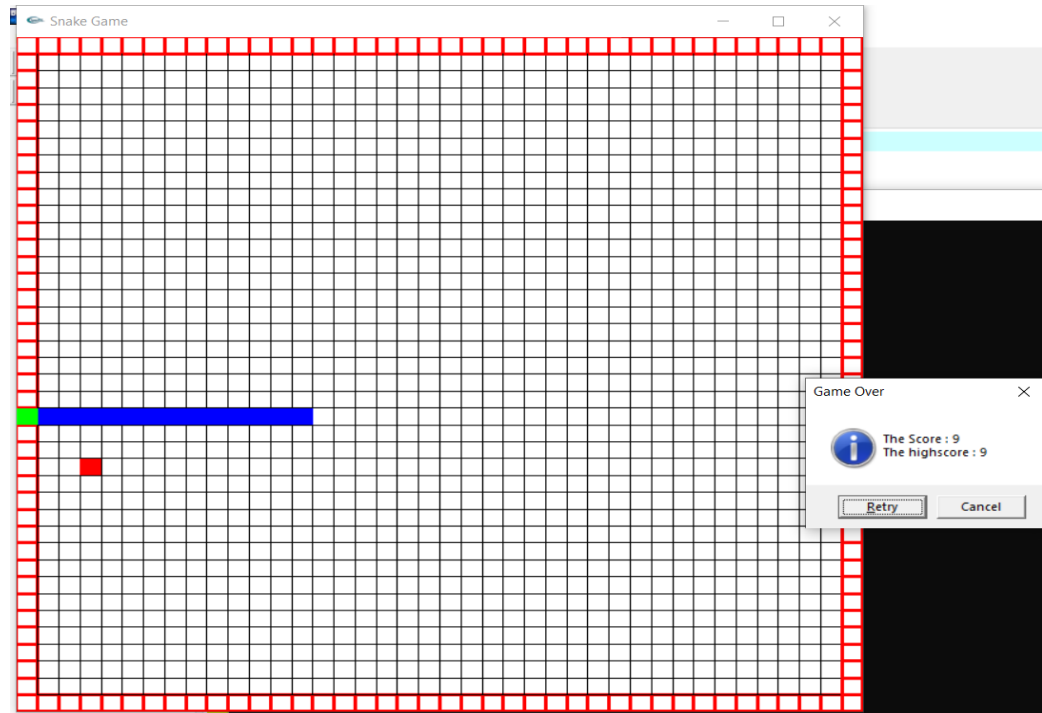
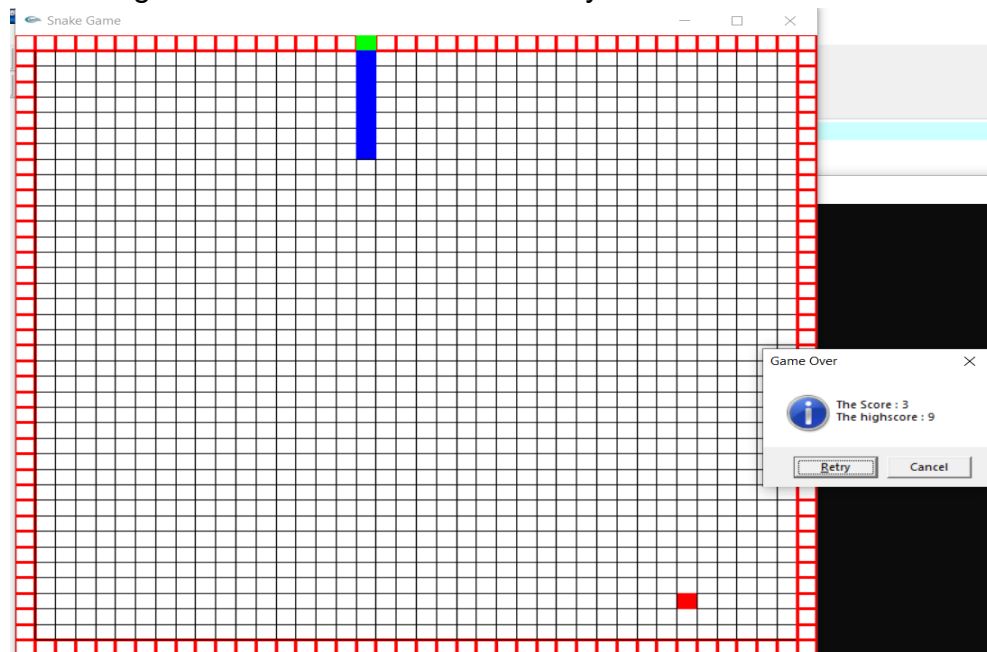Figure 7: Before click on the "Retry" button.

Figure 8: After click on the "Retry" button.

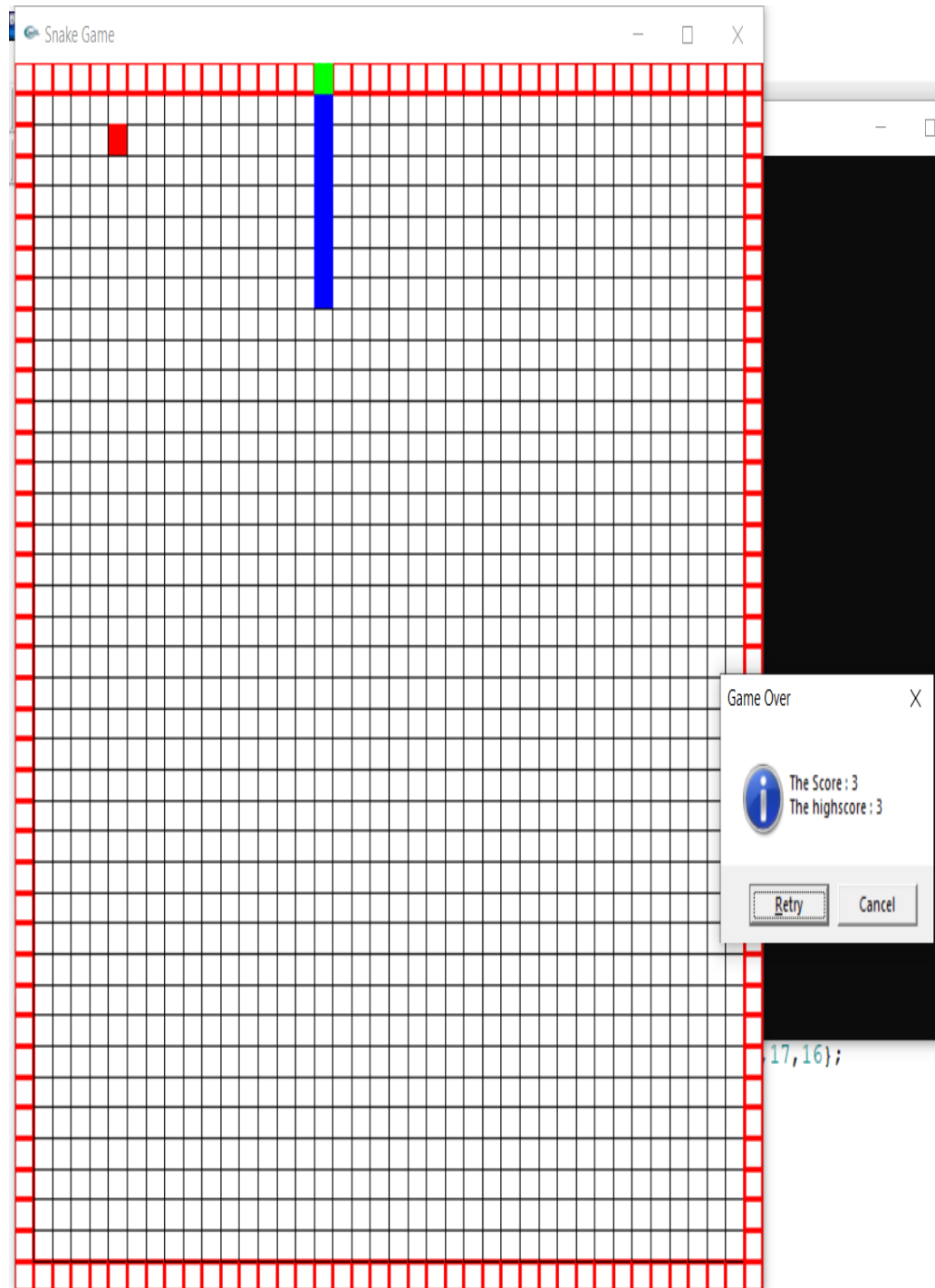The Snake will be again arise as first snake size position of the game.

Figure 9: After click on the "Cancel" button.

The game will be exit from the window.

How to Configure the Source Code and the Binaries   :

This game is a 2D snake graphic game. We need C++ compiler from MinGW for Windows. We used following set of libraries in programming OpenGL in Snake game.

- GL   -   Core OpenGL models an object via set of geometric
                        Primitives.
- GLU   -   OpenGL Utility Library. GLU functions start with a
                        Prefix "glut".
- GLUT   -   OpenGL Utilities Toolkit.   It provides support to
                        Interact with the Operating System.

GLUT libraries help to make the programming of this game simple and easiest. At the beginning of the source code we have to set the header files.

- Core OpenGL   - "gl.h"
- GLU -   "glu.h"
- GLUT -   "glut.h"

They are kept under "include\GL" directory.

Eg:
//Headers files.
#include <GL/gl.h>
#include <GL/glu.h>
#include <GL/glut.h>

We used static library in Win32 as "glut32.lib" for GLUT under "lib" directory. As an optional we used "glut32.dil" for GLUT under Win32, under   "c:\windows\system32".

We locate above files in relevant directory to get   properly setup OpenGL programming environment.

MinGW is a setup for the GCC Compiler. In there we have to install GLUT separately. Before compiling the source code of the game in various operating system like Windows, Mac OS X, Linux etc. We have to include relevant header files.

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In windows,

        #include <windows. h>

In Linux,

Set up the open GL and free glut libraries in Ubuntu.

       Install
- **apt-get install freeglut3-dev**

       Compile:
- **g++ main.cpp -o main.o -lglut -lGLU -lGL -lm**
      Run:
  - **./main.o**