

Homework #2

Course: Modeling and 3D Rendering

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Question. Please write a C code to implement a Ping-Pong game with OpenGL which works as follows:

1. Define a small circle as a ball in a rectangular area.
2. With a first mouse click (left button), the ball start moving toward the position clicked.
3. When the ball reach border of the rectangle it is bounced just like when light hit a mirror.
4. Define two small rectangles in areas close to the right and left sides which works like a tennis racket when the ball hit them.
5. The rocket moves up or down to the sides of rectangle by pressing some keys.
6. Each player should prevent the ball hitting its side of the rectangle.
7. If the ball hit the side behind the rocket the opposite player gets one score.
8. A pop-up menu is opened with a right mouse click with 3 entries of "Exit", "Start over" and "Level". "Level" opens a sub menu with three entries of "Easy", "Medium" and "Hard".
9. The initial speed of ball, is adjusted based on the level selected.
10. The current scores of two players should be displayed somewhere on the display.

Answer. The file named Codes is the codes to answer the question. Also a clip of running code is added named *HW2_PingPong_Dadgar_Run_Video.mkv*.

Environment: This program was written in Visual Studio Code IDE, operating system Linux Kubuntu 20.04.

To compile and run the program using the command below:

```
g++ main.c debuggingFunctions.c initFunctions.c -o main.out -lGL -lGLU -lglut  
./main.out
```