Homework 5

Program Description-

The program is basically a simple car game. The Blue box is the car, red boxes are the obstacles, and the green boxes are the targets. When you touch a target, 1 point gets added. The game gets over when you touch any Obstacle, or you can manually end the game by pressing ESC. After the game ends, you will see your final score.

The program automatically starts when the program starts so get ready to dodge the incoming obstacles. The speeds and heights of both obstacles and targets are randomised so in the unlucky case, there is a chance that you won't be able to dodge even for 5 seconds.

How to dodge?

You can shift the car's lane to dodge the incoming obstacle and to collect the target by using left and right arrow keys. There are 3 lanes in the game. They are separated by yellow lines. You can also move the car up / down using he up /down arrow keys. Car moves up/down by 50 pixels.

Features used-

1. I have used double buffering since I need to animate continuously without flickering.
2. Program is interactive since we are controlling the car.
3. Program used colour gradation to define the background of the window. It is not a necessary tool in this case, but I have used it.
   Program also uses Line Stipple to define the lanes.
4. Program uses GL_LINES and GL_QUADS. GL_LINES are used for shading the area of road that is not being used. GL_QUADS is used to shape the target, obstacles, and the car.
5. Program uses state transition as well Numerical integration by Euler's method. State transition is used for collecting points and defining obstacle conditions. Numerical integration is used for calculating the pixel shift of obstacles and targets after every frame.