COL100 Assignment 8

Simple Graphics - Rendering of Carrom Board Game

IInd Semester 2014-15

Given:

1. Co-ordinates (x,y) of the corners of a ***Carrom Board*** shaped as an equilateral triangle, with pockets on the vertices.
2. A single stationary ***coin*** is placed at a random location on the board.
3. A ***striker*** is placed anywhere on the marking at the base of the triangle, and is launched with a fixed velocity towards the coin on the board. The striker travels in the direction of the coin.
4. The striker collides with the coin on the board.

You have to simulate the motion of the coin on the board after it is struck by the striker. The simulated motion should mimic the motion of the coin in the real world as far as possible.

Requirements from you:

1. Incorporate appropriate concepts of physics to calculate the trajectory of the coin in the following cases,
    i. being struck by the striker
    ii. colliding and rebounding against the wall/boundaries of the board
    iii. coin falling into the pocket (if it is in the vicinity and the velocity is low enough)
    iv. damping the velocity of the coin due to friction
2. The entire movement of the coin on the board can be broken down into a sequence of line segments. The movement of the coin in a particular line segment is characterized by its terminals (start and end point), and its velocity.
3. We will provide the necessary functions to display the board and render the motion of a coin between two points at a particular velocity. You only have to call the function with appropriate values.

Timelines:

Please note that the following timelines are strict and will not be relaxed for any reason. So please plan accordingly.

1. Release of Assignment Stub: 13-April-2015
2. Assignment submission deadline: 22-Apr-2015, 17:00 hrs
3. Viva: 23-Apr-2015 to 29-Apr-2015