Week 12 Exercises : SDL Introduction

April 24th 2012

1   Approach

During this week exercises you will implement a simple interactive application based on the library SDL covered in this week's lecture. The first task will be very simple and it should give you a basic idea on how to structure an interactive application, handle events and display graphics. For those who want to progress further, the second task will add some extra complexity to the logic and the graphics and can be built using a similar approach.

Task 1 : Bouncing square

In this task you will implement an SDL application to display a 2d box bouncing inside a perimeter defined by the window. The box (of arbitrary size) will start at a random position inside the perimeter, with a random direction vector and will bounce against the walls (window borders). The direction vector will give you the box direction movement and its speed (based on the magnitude of the vector).

    You have to model the basic elements of the problem, the box, direction vector, walls, collisions between the box and the walls, and how you are going to calculate the new direction after each bounce. Then find a way to represent visually the box and display the animation.

Task 2* : Pong

This exercise will add some interaction and complexity, and can be done working from the base code of the previous exercise. Pong is a 2d simulation of table tennis. More information about the game on *Wikipedia*. Some limitations to constrain the problem:

1. You can control both sides of the table with the same keys, therefore you can play the game against yourself.

2. Use basic graphics (coloured rectangles) for the shapes of the game

3. You do not need to keep track of the score, simply implement the basic interaction of the game. Everytime a player loses just restart the game with the ball in the center and going into any direction.

4. The ball always has a perfect reflection bounce, therefore there is no need to implement any kind of friction between the ball and the paddles.