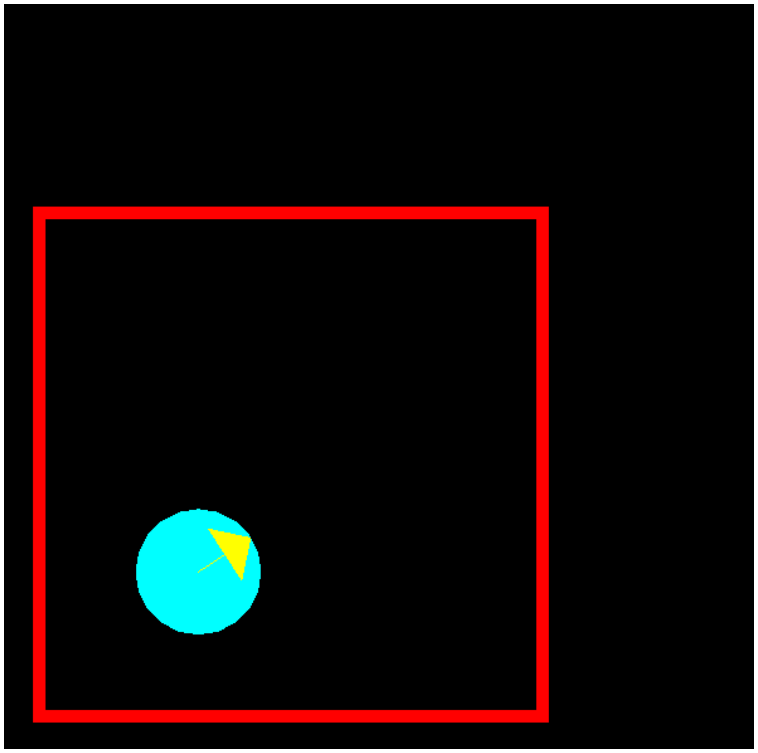
CSE 102

Jan 2019

Home Assignment on iGraphics

The Assignment

In this assignment, you will develop a simple game as shown in the figure.



1. The screen will have a small box (shown in red in the image) contained within a larger window. Let the box be called B from now on.
2. Inside B, there will be a ball. The ball can move inside B.
3. You can change the moving direction of the ball with RIGHT and LEFT arrows.

4. The direction in which the ball is currently moving will be shown with an arrow inside the ball. Therefore, when you change the direction with the arrows in keyboard, the arrow inside the ball will also change, and the ball will also start to move that way.
5. The ball can never leave B. Whenever the ball hits the wall; it will bounce back in the reflected direction.
6. When a collision of a wall and the ball occurs, the ball and the box B will interchange their colors. So in the image shown above, after a collision, the ball will become red (and of course, start moving in the reflected direction) and the box B will become cyan.
7. The arrow indicating the ball's moving direction will continue to show even after a collision with the wall.
8. You can change the position of the outer box B with the keys 'a', 's', 'd' and 'w'. If you hit these keys, the box B will change its position. However, the position of the ball with respect to the box B will not change. So, when the ball is moving to the right, and you make the box go right with the key 'd', the ball will seem to travel faster that its original speed. Likewise, when the ball is moving to the right, if you make the box B go left with the key 'a', the ball will seem to travel slower that its original speed.
9. Initial position of the box B, the ball, the moving direction of the ball can be arbitrary.

A sample program is given with the specifications.

Mark Distribution

Task	**Marks**
Drawing the box	5
Drawing the ball	5
Drawing the arrow of direction	15
Moving the ball in direction	10
Updating direction	20
Implementing collision	15
Color change with collision	10
Moving the box	20
Total	100