

Department of Computer Science

08101 Programming 1

Week 9 Practical 2007/2008

Pong Game

At this point you should have a ball moving around the screen and paddles that can be controlled by the keyboard.

In this session you are going to add collision handling and score display.

Paddle Collision Handling

Your game must detect when the paddle and the ball occupy the same position on the screen and cause the ball to bounce appropriately when this occurs. One way to do this is to use a for loop which is similar to the one which draws the paddle, but instead it checks each element of the paddle to see if the ball is in that position.

```
for (int i = leftPaddleY; i < leftPaddleY + leftPaddleLength; i = i+1)
{
    if (leftPaddleX == ballX && i == ballY)
    {
        // ball has hit the paddle
    }
}
```

When the ball hits the paddle it must reverse direction.

Goal Scoring

When a player fails to hit the ball it will go behind their paddle and hit the edge of the playfield behind their paddle. If this happens the other player has scored a goal. Your program will need to detect this and update the scores accordingly. Your program already detects when the ball reaches these edges, you will need to add extra code to keep track of the goals that are scored.

The rules of this version of Pong are that once a player has scored 5 goals the game is over. This means that your game must keep track of the scores and end the game when a player reaches 5.

When a game has finished you need to allow the players the option of starting another game or exiting the program. This means that your game behaviour has to be placed inside a loop of some kind

Score Display

The game must display the score during gameplay. The way to achieve this is to position the cursor at a suitable place and then write the score values:

```
Console.SetCursorPosition(0, 0);  
Console.Write("L: " + leftScore + " R: " + rightScore);
```

Pong Phase 3

At the end of this session you should have game which displays a bouncing ball and a pair of paddles which can be moved under player control. When the ball hits the paddles it should bounce back, but if a player misses the ball a goal is scored by the opponent. When any player reaches 5 goals the game ends automatically, and the scores are displayed. The players are given the option to play another game or quit the game. This will be the basis of your submission and presentation in week 11 of this semester.

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