Department of Computer Science

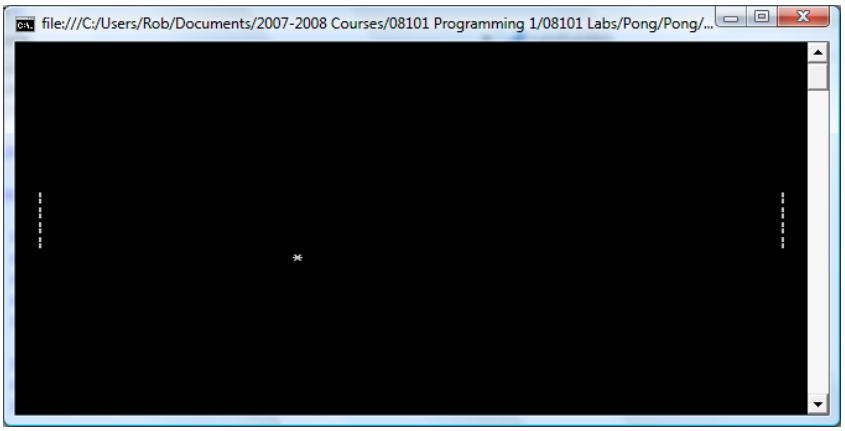
08101 Programming 1

Assessed Practical Work 2 2007/2008

Pong Game

Pong

The game of Pong is played by two players, each of which controls the position of their paddle. In the original game this was achieved by the use of rotary controls, but we will be using keys on the keyboard. Players must use their paddles to hit a ball which is continuously bouncing around the screen. If a player misses the ball, and it hits the wall behind their paddle their opponent scores a point and the game continues. The game can be played until one of the players reaches a particular score, or for a set period of time.



You are required to create a Pong implementation which runs in the console window as shown above.

Required Submissions

You are required to submit your program and a user guide by means of Class Server. The precise requirements are as follows:

- The game must implement a ball which moves around the game area, bouncing off the edges of the area.
- The two paddles must be under the control of the two players, each of which must be able to move their paddle up and down. It should not be possible to move a paddle off the top or bottom of the display game area.
- When the ball hits a paddle it must change direction and “bounce” off it.
- When a ball hits the side of the display this counts as a goal for the player at the opposite end of the game area. The program should track the number of goals scored and display these on the screen. When either player reaches five goals the game must end and the winner (left player or right player) should be announced. The players should then be able to start another game, with the scores cleared back to 0.

Program Enhancements

In addition to the minimal requirements, you can also enhance the program to add further features:

- Sounds that are played when the ball collides with any of the playfield objects
- A computer player that can be made to replace one of the human players. The computer player must be beatable.
- Movement of the bats across the screen as well as up and down.
- Changes in the length of the bats or speed of the ball as the game progresses.
- A high score table.

In this APW 20% of the marks are allocated to game enhancements. Successful addition of any three of the above enhancements would be sufficient to gain the extra marks.

Program Source

You will be required to submit the source code of your program. It is important that this contains an appropriate level of comments to document the program behaviour.

User Documentation

You are also required a two page document for the user of your program. This document should explain how the program is used and give any other details that you feel are appropriate.

Program Demonstration

As part of the assessment of this work you will be required to demonstrate your solution in the Fenner Computer Suite in your practical session on Thursday 6th and Friday 7th of December. The timetable for demonstrations will distributed via email and also published on the 08101 Sharepoint site.

Ensure that you turn up in good time for your demonstration. At the appointed time you should have your program ready to run and a listing of your code displayed on the monitor screen. The demonstration will take no more than 10 minutes and will involve a test play of the game and an examination of your source code.

Rob Miles
13th November 2007