CS212 GBA

Part 1: Pong
Spring 2008

1 Pre-Task

Ensure that your development environment is apropriately setup before beginning this assignment. Refer to the setup notes for your specific operating system.

2 Task

For this assignment we expect you to implement a working version of the game Pong using the code we've given you. We're assuming you've heard of Pong and know what it's supposed to look like. If not, JPong is basically what we are expecting.

http://www.xnet.se/javaTest/jPong/jPong.html

Your Pong is expected to have following features:

- Paddles and ball appear on screen

- Ball and paddles move linearly

- Collision detection - ball bounces off top and bottom of screen/paddles

- Player controls one paddle by means of GBA keys

- Some sort of AI (doesn't have to be fancy, but computer paddle cannot just sit there) or implement 2-player pong

- Scores appear on screen

- Game over when one player reaches a certain score (1 and 0 are not appropriate winning scores)

Please make sure your code compiles and runs. Please don't implement any additional features until each of the required features works properly. Also, we would like to see appropriate (clear AND concise) commenting.

3 Provided Code

On CMS you will be able to download a ZIP file called `Pong_src.zip` containing the provided code to get you started on the assignment. We have provided you with a simple sprite manager that was designed to handle just Pong paddles, Pong balls, and alphanumeric characters. You can use this sprite manager by making instances of the Sprite object. All the code for the sprite manager can be found in `Sprite.h` and `sprite.cpp`.

3.1 Sprite

The sprite object has 3 methods and 2 constructors.

```
// Constructors:

// create a new sprite
// must be BALL or PADDLE
Sprite(spriteType s);

// create a new sprite of type ALPHANUM
// displaying the number i
// 0 <= i <= 9
Sprite(int i);

// Methods:

// set x and y coordinates of sprite
void setX(int xVal);
void setY(int yVal);

// 0 <= num <= 9
// sprite must already be ALPHANUM
void setNum(int num);
```

Using these methods you can implement the game of Pong fairly simply using the provided Sprite class. Get started by making a paddle that responds to directional input, and work your way up from there. Note that if you compile the source provided to you as is, when you run it in your emulator it will show an empty black screen.

4 Submission

Submission will be done through CMS. Since the only file you should be modifying is Pong.cpp, you only need to submit that one file. If you should find some need to modify the other source files given to you, please contact the course staff first.

5 Academic Integrity

While you will form groups for much of the GBA project, you are required to do this assignment individually. Refer to the course website for rules on partners in Academic Integrity. You are responsible for knowing, understanding, and following these rules.