

Spring 2013 - CSE 325: Embedded Microprocessor Systems

Project 6: Pacman, Pacman Everywhere

Points: 10 + 5 e.c., Due Date: Apr. 29, 2013

Project Requirements

For this project you will be implementing a simplified version of the game Pacman <http://en.wikipedia.org/wiki/Pac-Man>. In this version you will need to create only one orange Pacman dot on the 8X8 LED matrix, and at least 1 red ghost dot (you can create more ghosts if you want to). If Pacman runs into a ghost or a ghost runs into him then the game is over and it starts from the starting position again. For this project you may start the ghost(s) and Pacman in any position you wish, but it might be interesting to have a random starting position. When the system turns on the LED matrix should default to the starting position. To start playing the game the user should have to press push button 1 on the Coldfire board. When the game starts the ghost begins moving and Pacman is now controllable by the player. There is one additional challenge in the Pacman project; the game board needs to include at least one green wall that the ghosts and Pacman cannot pass through.

Pacman is controlled by the Wii Nunchuk's joystick. If the stick is moved up, Pacman attempts to move in the up direction; if the stick is moved down, he attempts to move down; etc. The only way Pacman cannot move in a direction is if he attempts to pass through a wall or he is at the edge of the game board. If Pacman cannot go in the direction that the joystick is pressed, he will continue in his current direction.

Ghosts do not need to have much intelligence built in to their movement routine. A ghost can move one light and after each move go in a different direction. A ghost can also not pass through a wall or move off the game board. If the ghost's next move is to go into a wall or off the board, he should continue in his current direction. If you would like to get creative and implement intelligence in the ghost, so he hunts Pacman, please feel free to do so.

Extra Credit

You may receive 50% extra credit on this project by adding sound effects from Pacman to the game. The sound effects should include a sound for Pacman moving from one light to the next, and another sound for Pacman getting eaten by a ghost. You can play Pacman online at <http://worldsbiggestpacman.com/> to see an example of what those sound like. However, if you want to get creative and use different sound effects, please feel free to do so. Just make sure you have sound for Pacman moving and another sound for Pacman dying.

What to submit for grading

Put a comment header block at the top of each source code file that contains: (1) the name of the source code file; (2) the lab project number; (3) your name (and your partner's name); (4) your email address (and your partner's email address); (5) the

course number and name, CSE325 Embedded Microprocessor Systems; and (6) the semester, Spring 2013.

We will export the project to a directory structure. In CodeWarrior, click File | Export on the main menu. In the Export dialog, expand General. Click on File System. Click Next. In the next dialog, click Select All. Enter a destination directory, e.g., C:\Temp. Click Create Directory Structure for Files. Click Finish. The entire project will be exported to C:\Temp\Proj06 (or whatever name you used for your project when you created it).

Zip this entire directory naming the zip archive **cse325-s13-p06-*lastname*.zip** or **cse325-s13-p06-*lastname1-lastname2*.zip** if you worked with a partner.

Upload the zip archive to Blackboard using the project submission link by the deadline. Consult the online syllabus for the late and academic integrity policies.