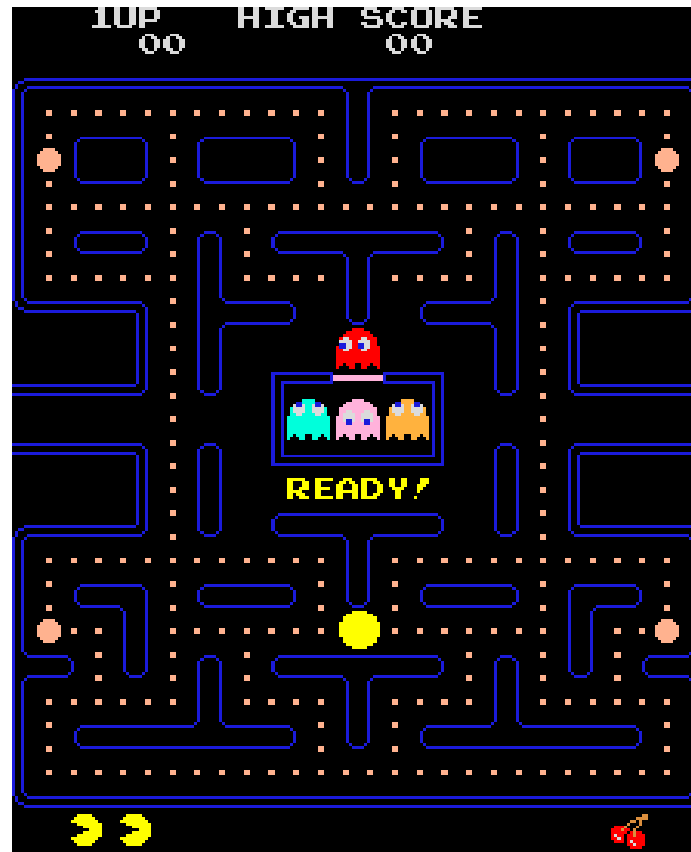


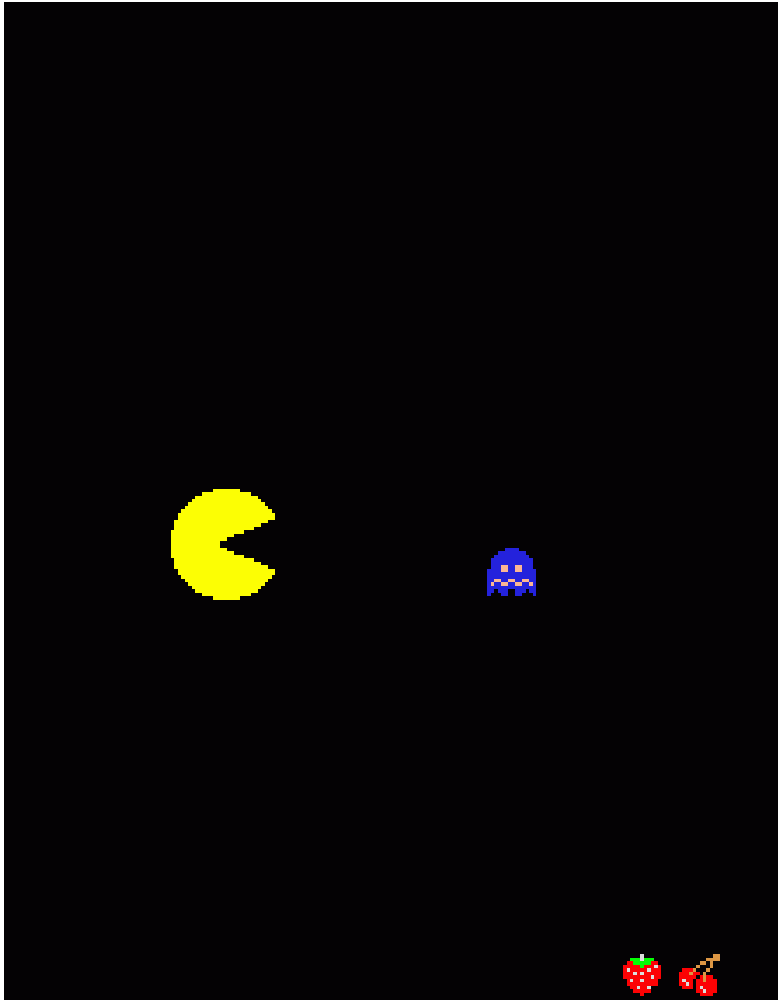
Pacman on the FPGA

Pac-Man images Copyright
Namco (1980)



Cassie Huang & Michael D'Ambrosio

A Brief History of Pacman



- Developed by Namco
- Inspired by pizza with one slice missing
- Originally called “PUCKMAN”
- Led to many ports and sequels, such as Mrs. Pacman.
- Popularity has lasted the test of time (over 100,000 machines sold)

Gameplay

- Control Pacman via PSX controller (up, down, left and right)
- Move around the screen, eating dots while avoiding four ghosts.
- Pacman starts at the bottom of the screen and Ghosts start in the Ghost Pen (located in the middle of the screen)
- Lose a life if Pacman makes contact with a ghost.
- Game ends if all lives (default 3) are lost.

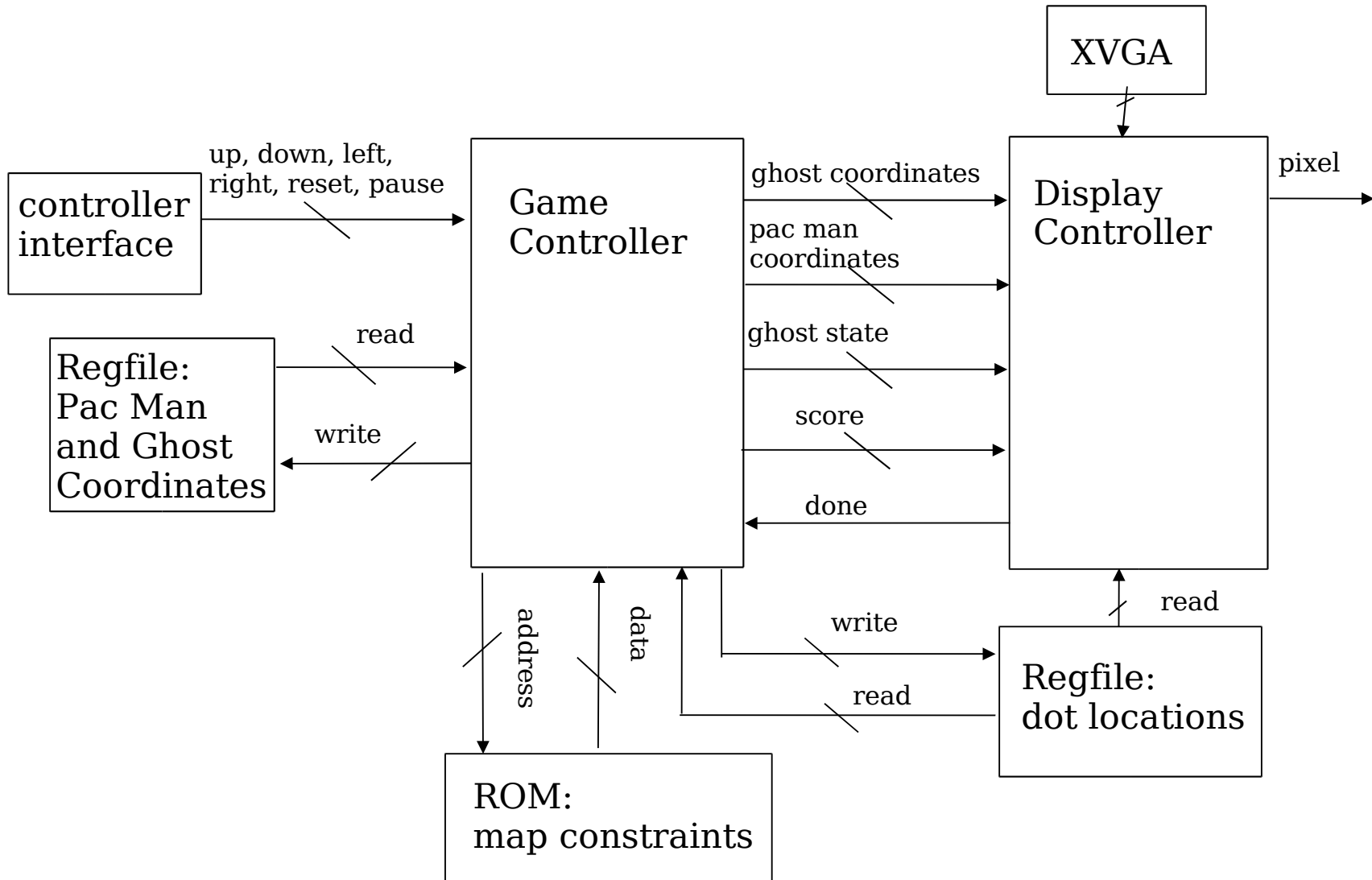
Gameplay cont.

- Player clears the board if all dots are eaten.
- Two special dots, called, **ENERGIZERS** make Pacman invincible for a brief period of time when eaten.
- Ghosts can be eaten while Pacman is Energized.
- If a ghost is eaten, they will return to the Ghost Pen and regenerate.

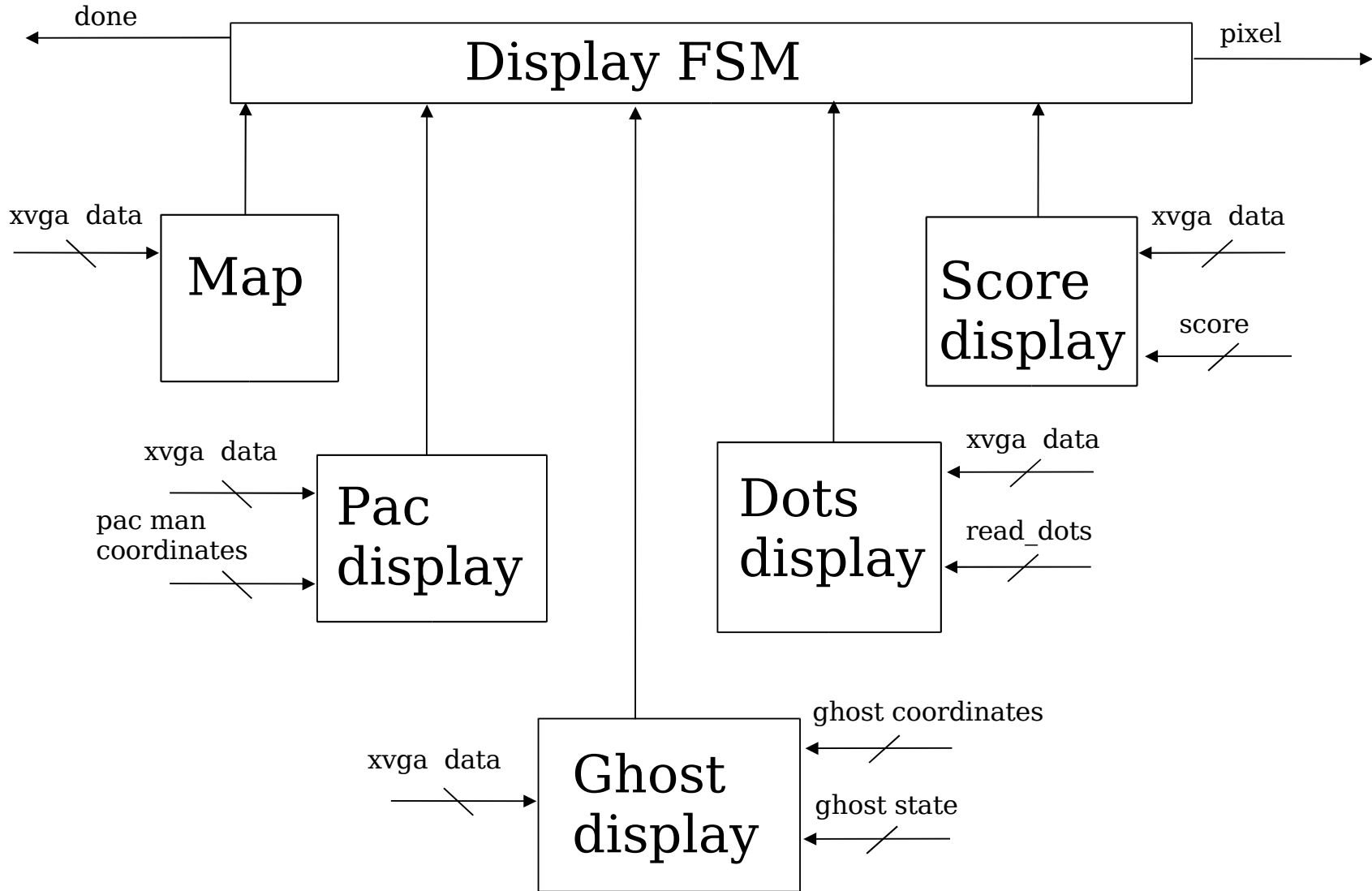
Even more Gameplay

- In two player mode, two players can play simultaneously.
- In this mode, players will race to eat as many dots (and ghosts) as possible.
- The player with the lower score after the board is cleared (or the one who loses all their lives first) loses.
- An Energized Pacman will be able to eat a non-Energized Pacman and gain a life.

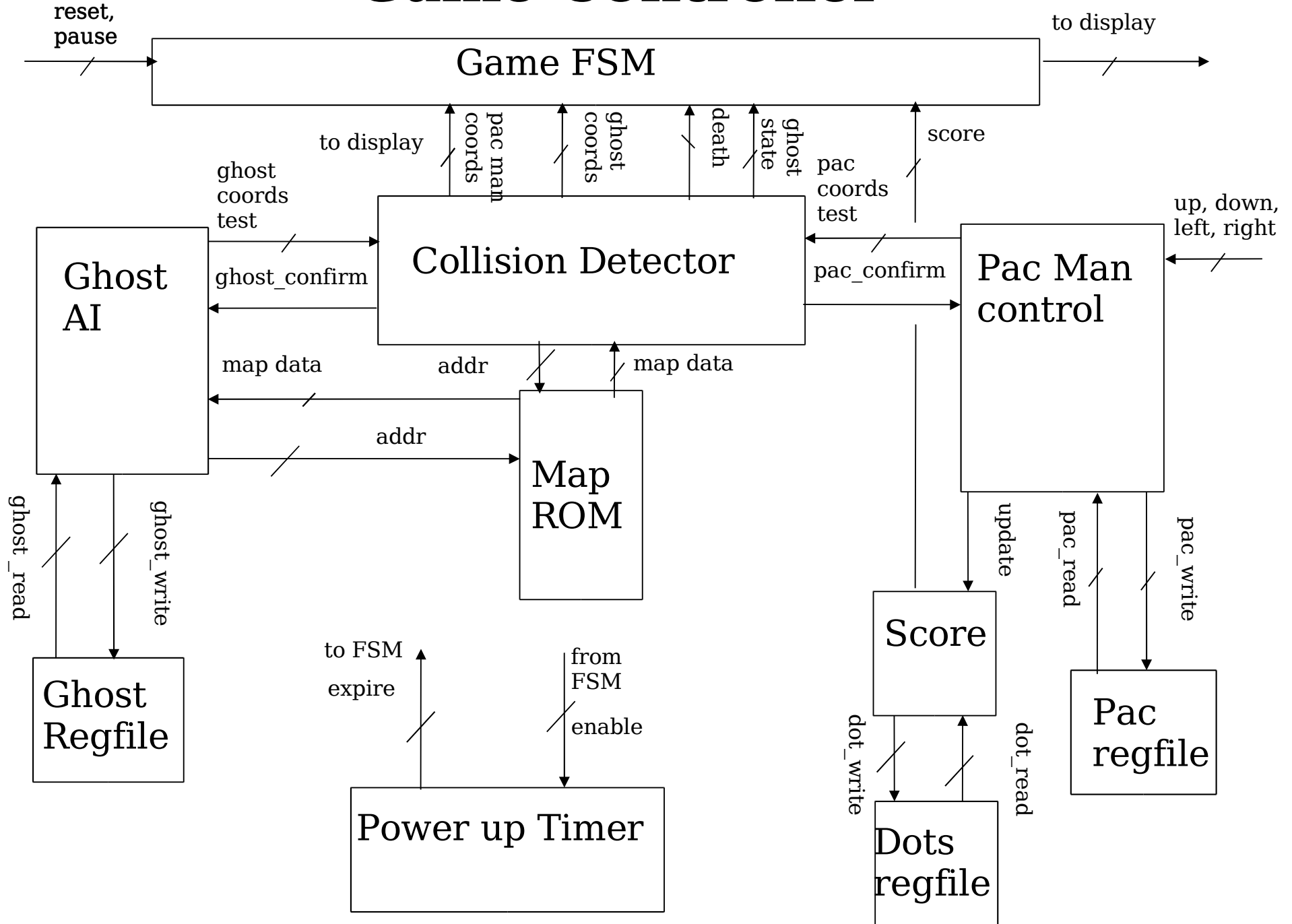
Basic Block Diagram



Display Controller



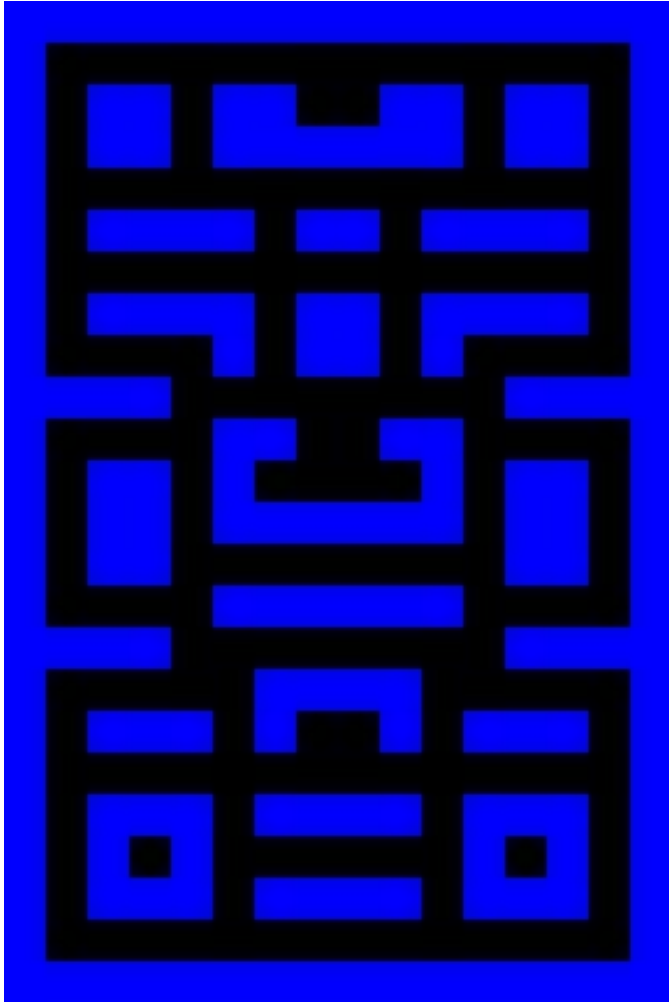
Game Controller



Project Priorities

1. Map display with dots.
2. Pac Man eating dots, and keeping score.
3. Ghosts chasing Pac Man, keeping track of lives.
4. Energizer
5. Two player mode
6. Animation / sound effects
7. Intermission Animation
8. Multiple Levels
9. Interface with the PS controller

Maze and Maze Constraints ROM



- Each 32x32 block will be coded by 5 bits in the ROM.
- Bit 5: wall (1) or space (0)
- Bit 0-4: which ways lead out of the space.
- 1: connects to next block
- 0: does not connect