

# **PAC-XON**

**CSEE 4840 Embedded System Design**

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# Proposal:

## Project Description:

We propose to build a simple 1-player video game named “PAC-XON”, which will be implemented with an emulator. We will use the FPGA’s ROM to store bitmap images of our characters and the background. We will use the keyboard as real-time controls. And our keyboard controls will be limited to 4 buttons (up, down, left, right). The game will require software programming in C and hardware programming in VHDL. The game state will store the information of the game map along with the states of the pac man and the ghosts. The basic graphical implementation of PAC-XON will borrow from what we learned in Lab 3. Our game graphics will be done entirely within VHDL.

## The PAC-XON Objective:

Each player controls a pac-man with four lives at the beginning of the game. Player must fill empty space and capture ghosts by building wall. As soon as the player fills 80% or more empty space he will go to the next level. Beware of ghosts. If one touches the wall the pac man is building or catches the pac man, he will lose a life.



## **What will we do next:**

### ***Milestone 1:***

Design the PAC-XON interface.

Start to build the peripheral of the project with related chips and FPGAs.

### ***Milestone 2:***

Finish building of the peripheral of the project with related chips and FPGAs.

Start to program the PAC-XON video game.

### ***Milestone 3:***

Finish programming the PAC-XON video game.

Implement PAC-XON, finish our project.