

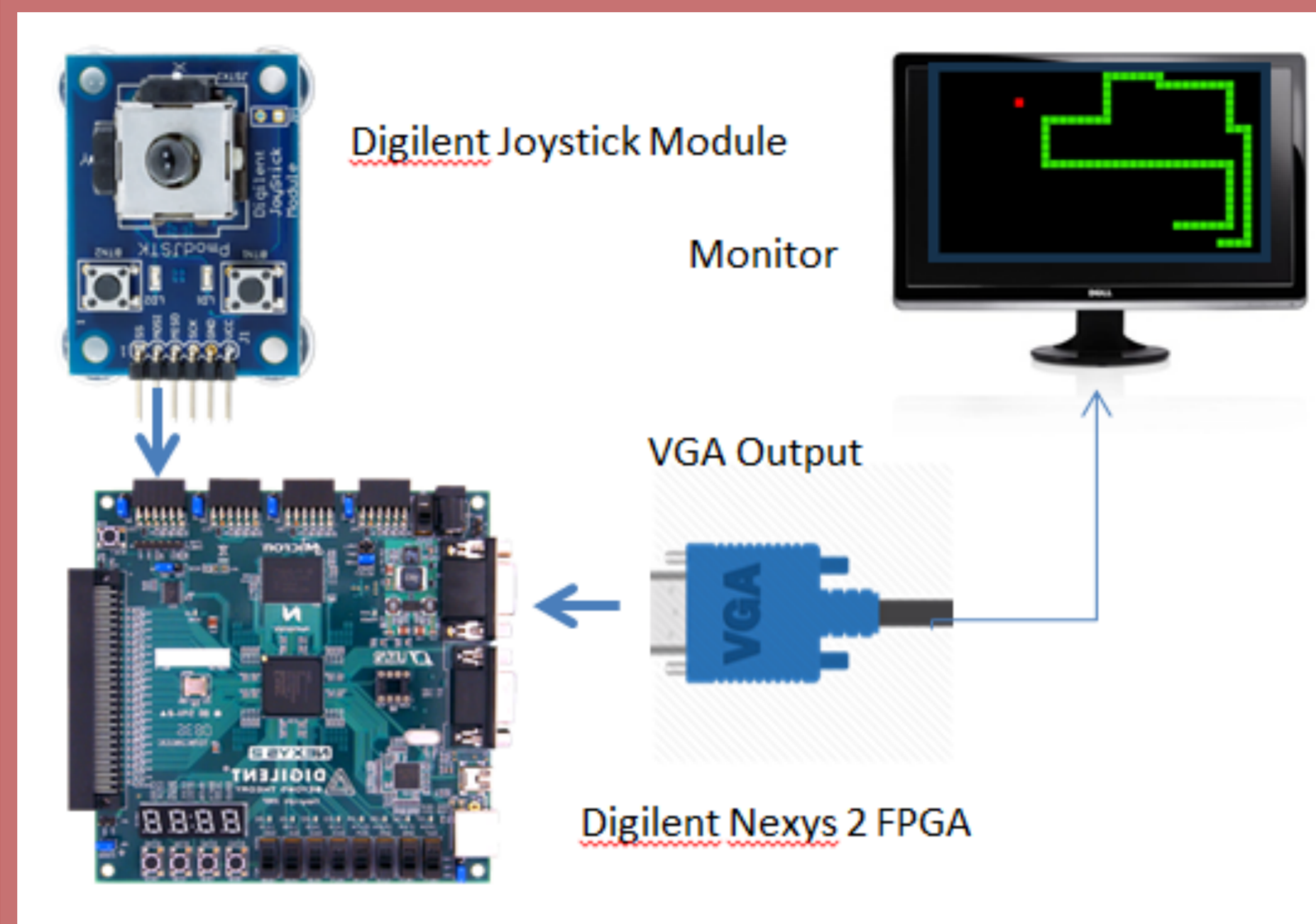
Introduction

Project S is an adaptation of retro snake game of retro mobile phones. This project is a nostalgia project bringing our favorite childhood game into PC monitor with Nexys 2 FPGA controlled joystick.

Future Work

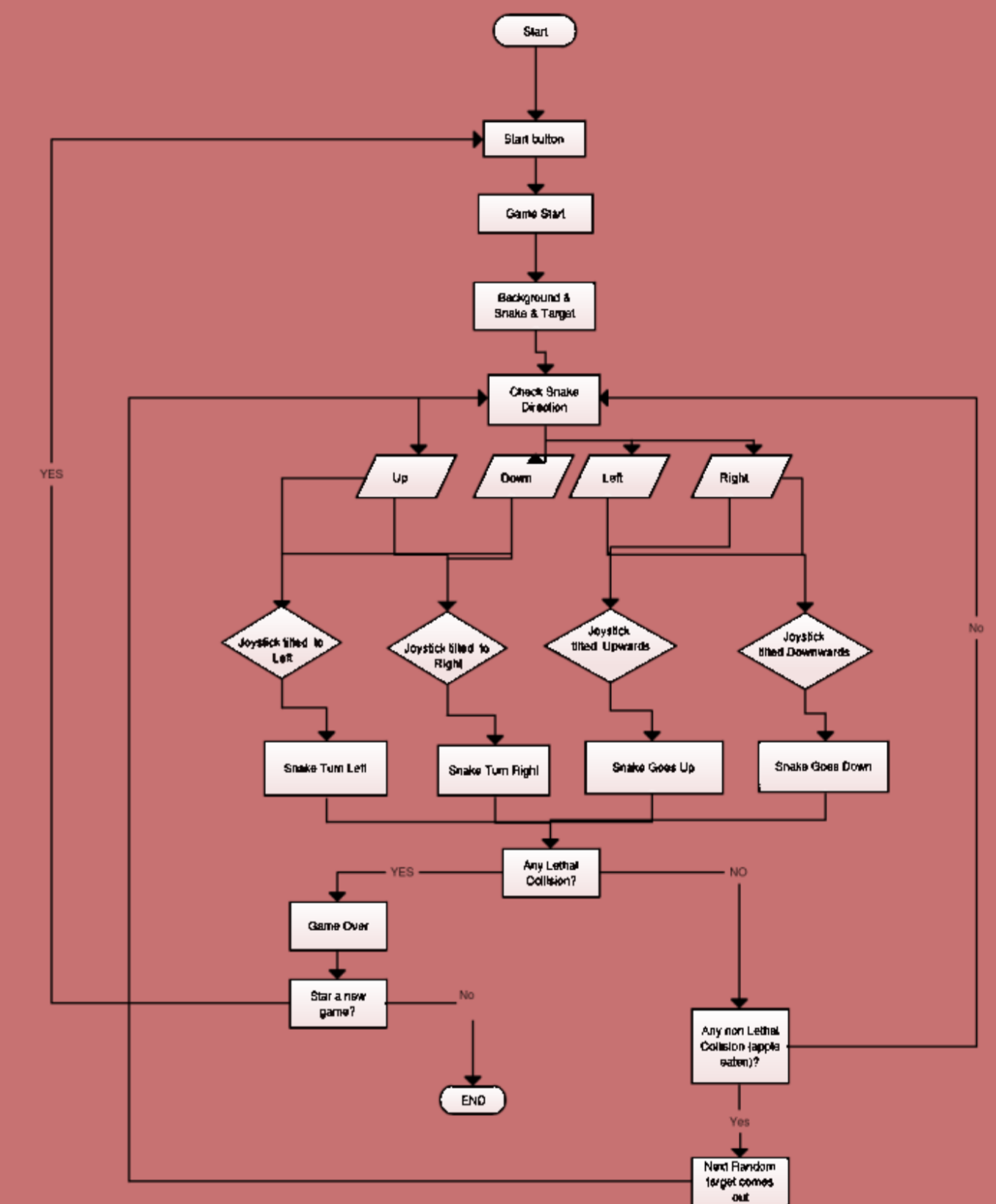
Project algorithm can be improved to enable 2-player game mode and also when the maximum size is achieved in the initial game mode, a second level can be unlocked with different difficulty.

System Overview



System Architecture

ASM Diagram



Design Methodology

- Xilinx ISE Software is utilized in the development of the snake algorithm.
- Initial step was to control the joystick input of Digilent Joystick Module.
- Then VGA Hsynch and Vsynch and clock is adjusted for a static VGA output of a block and a background.
- Then Joystick input and VGA output modules are combined to deliver a 8x8 block control over a 640x480 resolution monitor.
- Snake target (apple) is created with a random generator algorithm and replenishes each time the apple is eaten.
- Snake body is created as an array head being the 0th element in the array and the movement algorithm adjusted.
- Snake game mechanics added game finish, game pause, collision with tail and borders are added to the mechanics.