

CS 86: Games Systems

Lab 3: 6502 & Stella

DUE September 25th at 11:59 PM

1 SNAKE Pre-Lab [to be done before lab]

Follow the [6502 tutorial](#) and modify the snake game in inventive ways. Some suggestions:

- change the color of the snake or apple;
- make the apple move;
- change the keys used to control the snake;
- add an additional apple to eat;
- add a second snake with different controls;
- some other Pippin Barr style *snakism*.

Check in your snake programs as `snake_name1.s` and `snake_name2.s`.

2 Using the Stella Debugger

We will practice using [stella](#) to understand (and change) how an Atari 2600 game works. Follow along the Battlezone [tutorial](#) and complete the 16 steps. Try using [trap/break](#) to find where in the game the joystick is polled. For example, you can find where in the game logic the tank fires by running `trapRead INPT4`. Once you have completed the tutorial, save the ROM using `saveROM`,

2.1 Disassembling with stella and editing with 8-bit

Use `stella` to disassemble the binary and use [8bitworkshop](#) to assemble the code and emulate the binary in the browser. You can also save the rom in the web browser to further debug using `stella`.

```
$ stella Batlzone.bin
stella-prompt> saveDis
$ code ~/Battlezone (1983) (Atari).asm'
```

2.2 Reflection

Write a few sentences on what the diassembled code is missing compared with the original (but missing) source code.

2.3 Demo

Once you have completed the tutorial and assembled the code, call me over to show me. Then apply some of the techniques to your own hack project.