

CS 2261 Homework 05:

Space Invaders Iteration 1

Instructions

In this assignment, you will be implementing the first of two iterations of Space Invaders in Mode 0. This iteration will result in an incomplete, but functioning game. In the second iteration, HW06, you will develop the remaining functionalities for Space Invaders in Mode 0. Note, submitting a fully working HW06 as HW05 will **NOT receive full credit**. If you are not familiar with the game, search it online, and you will find several videos and explanations. You are free to extend the game in any way you want, but your first iteration implementation must have the following characteristics of the original game:

- **At least five rows of enemy sprites**
 - The enemies in this iteration are motionless
- **At least three different enemy types, each with a unique appearance**
- **Enemies shoot bullets, which take a life from the player if they hit**
 - Player lives in this iteration are *not* displayed on the screen
- **Player shoots bullets, which destroy enemies if they hit**

Your game must have the following additional characteristics:

- **Coded entirely in Mode 0**
- **Meaningful comments throughout the code**
- **The following states: Start, Game, Pause, Win, and Lose**
- **Sprites used for the enemies, bullet, and player**
- **Transparency in the sprite images**
- **The following controls:**
 - Left – Moves the player left
 - Right – Moves the player right
 - A – Fire bullet
 - Start – Pause the game

Tips

- Start early. This is one of the hardest (and the second to last) homework assignments for the class. If you realize a problem early, come to office hours
- If you don't feel artistic, find the sprites for this game somewhere online, and copy them onto your spritesheet in Usenti
 - Remember that your spritesheet is 256x256
 - Tips: make a single sprite fit within tiles of size multiple by 8
 - Ex: 8x8, 16x16, 32x32
- **Get the first iteration of Space Invaders working in the following order:**
 1. Make the state backgrounds in Usenti (very basic, for now)
 2. Get the state machine working in-game
 3. Make the player sprite in Usenti (very basic, for now)
 4. Get the player moving in-game
 5. Make the enemy sprites in Usenti (very basic, for now)
 6. Get the enemies appearing in the rows in-game
 7. Make the bullet sprite in Usenti (very basic)
 8. Get the player shooting bullets
 9. Have the bullets destroy enemies
 10. When all enemies are destroyed, win the game
 11. Get the enemies shooting (at least 1)
 12. Have the enemy bullet hitting the player remove a life
 13. When all lives are gone, lose the game
 14. Double-check all requirements are met
 15. Make the state screens prettier, if desired
 16. Make the sprites prettier, if desired
 17. Add other game advancements, if desired

Submission Instructions

Compress your entire project folder, including all source files, the Makefile, and everything produced during compilation (including the .gba file) into a single .zip file. Submit this .zip on Canvas. Name your submission HW05_FirstnameLastname, for example: "HW05_SamhanDobo.zip".