**Space Invaders Post-mortem**

**Fulfilled Requirements**

* A state system has been implemented to transition between the game’s different screens.
* The menus both have selectable options (although the high scores option does nothing since a leaderboard was not implemented) that make use of the state system.
* In-game there is a player sprite that can move left and right and shoot at the aliens.
* The aliens spawn and move on-screen appropriately, except in exceptional circumstances (explained in **Known Issues**).
* The player’s score and lives both show on screen during gameplay.
* A game over screen is displayed when the player either runs out of lives or collides directly with one of the aliens.
* The speed of the aliens’ movement slowly increases each time an alien is killed.
* A new wave of aliens appears if the player defeats the current one.

**Known Issues**

* If the aliens’ next tick will cause them to move down and the player kills an alien, the aliens will continue to move down the screen instead of changing back moving left or right.
* The game does not always pause when the Esc key is pressed, this is likely because the game is not registering the key press when it updates.
* Although holding space will let the player shoot continuously, it only works if space is the most recently pressed key. This is because the checks for other key presses override the shoot action. E.g. Player is not moving but is shooting continuously, pressing left or right will cancel the shooting until space is pressed again.

**Future Improvements**

* Fix the above known issues.
* Implement the planned highscore/leaderboard system by adding a way to save scores.
* Any alien can shoot as long as they are alive instead of only the bottom alien for each column. In future implement a function that checks if the alien is at the bottom of its column before shooting.
* Implement barriers/blockades to block player and alien lasers.
* Implement randomly appearing bonus alien spaceship that travels from one side of the screen to the other, giving bonus points if shot.
* Add sound effects to the game – shooting, kill sounds, bonus alien hover sound effects, etc.