**ECE241 Final Project**

Team members: Nathan Jones, Jordan Greenberg

Description of project:

* Drone shooter game
* User is tank
* Drones are dropping downwards towards ground
* User needs to shoot them (gets points)
* If drone hits ground or tank, user loses

Hardware of the project:







First use keys on FPGA, then

Keyboard Input (user input) FPGA VGA

Board (processing) Monitor

(output)

Weekly milestones:

1. Week 1: Tank moves with keyboard input and drones drop on screen
2. Tank shoots
3. Final demo (the shooting will be linked to destroying drones and scores/points + user losing will be implemented)

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| Milestones | Week One | Week Two | Week Three |
| Jordan | Drones dropping |  |  |
| Nathan |  |  |  |

Notes

- Can use any program to make it more complex, but must be mostly on fpga

- Any libraries (python / c / etc) are good

- learn how to use test bench

Jordan week 1 notes:

- Start with 1 drone dropping

- Each drone is a register storing the position

- FSM would control the drone dropping (no user input to FSM)

- Data path would be responsible for setting the coordinates of the drone

- Drones would drop from predefined positions in a predefined order

- There will be a predefined number of drones on the screen to start

- VGA is at 60 Hz

- Tank moves left/right one pixel at a time

- Drone moves down one pixel at a time

- Drones are in “columns”

- Tank is 5x5, Drone is 3x3, projectile is 1x1