

## SENIOR DESIGN GAME PROGRAMMING PROJECT

**Summary:** The envisioned game, “Skies of Chaos”, is a 2D shooter game in which the player will navigate an airframe (helicopter, fighter jet, etc) through multiple levels and fight bosses in increasing difficulty as the levels progress. The game will restart when the user’s sprite takes enough damage to “shoot down” the aircraft or shows a victory screen when the user successfully completes all levels. The bosses will include multiple sprites, such as hostile drones, fighter jets, and helicopters. These different sprites will have varying abilities based on the airframe. This game is designed to mimic an arcade style game that is easy enough for novice or amateur gamers to play yet provides enough challenge through the levels so the user can build upon their skill level as levels progress.

### Goals:

- ❖ Primary
  - User’s sprite can advance through three-four levels and fight 1-4 bosses per level. The screen will differ throughout each level.
  - Game is timed, best times are stored in a text file for later reference.
  - User can shoot multiple munitions (missiles, machine guns, etc).
  - Enemies can fire back (again, with multiple munitions).
  - Game is designed primarily to work through an Xbox 360 controller for ease of use and testing.
  - Audio for advancing levels and background music.
- ❖ Secondary
  - Guided munitions included and can be used sparingly by user
  - Random powerups/hit point recoveries can be randomly found throughout gameplay.
  - Integrate extra graphics for smoke trails on missiles, sprites explode when “shot down”, etc
  - Audio included for firing munitions, random radio chatter
  - Integrate two difficulty levels (to include modulation of health and ammo)

### Assets:

- ❖ Monogame framework for Microsoft Visual Studio.
- ❖ Physics engine in Monogame? (TBD)

**High Level 13 Week Plan:** This will follow a sprint/scrum-like methodology, with miniature deliverables completed every 1-1.5 weeks.

- ❖ Week 1(31 Jan-6 Feb): Complete features list, start title screen.
- ❖ Week 2 (7 Feb – 13 Feb): Complete title screen, start coding user sprite.
- ❖ Week 3(14 Feb-20 Feb): User sprite can move throughout ~4 levels.
- ❖ Week 4(21 Feb-27 Feb): Implement level one boss, test.

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- ❖ Week 5(28 Feb-6 Mar): Implement level 2-3 bosses, test level progression.
- ❖ Week 6(7 Mar-13 Mar): Implement level four boss, test level progression.
- ❖ Week 7(14 Mar-20 Mar): SPRING BREAK
- ❖ Week 8(21 Mar-27 Mar): Implement sound effects, start secondary features
- ❖ Week 9(28 Mar-3 Apr): Continue secondary features, peer test
- ❖ Week 10(4 Apr-10 Apr): Peer testing and secondary features
- ❖ Week 11(11 Apr-17 Apr): Schedule final presentation early. Design presentation flyer
- ❖ Weeks 12-13(18 Apr-1 May): Final preparations for presentation, final testing