

Game Design Document
Asteroids Unleashed
CIS 588

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- I. Overview.
 - A. Appearance.
 - 1. The game follows the idea of the arcade classic Asteroids, but in full 3d.
 - 2. The character races through a 3-dimensional asteroid belt in a spaceship trying to avoid or destroy rapidly approaching asteroids.
 - B. Story Abstract.
 - 1. Play as a space age fighter pilot attempting to save the earth from a rapidly approaching asteroid as well as an evil terror organization intent on world domination.
 - C. Game play.
 - 1. The game is played by maneuvering the spacecraft through different types of obstacles trying to accomplish the objective set forth for the level
 - 2. The spacecraft carries a “double cannon” that is used to help achieve the goal of completing the objective
 - 3. When the spacecraft is struck by a life is lost.
 - a. Lives are not infinite, and cannot be regained.
 - i. Initially the game starts with 9 lives that must be used to complete all five levels of the game
 - 4. The game is over when either all of the levels have been completed, or when the spacecraft’s lives have been depleted.
 - a. Winning the game, however, requires that all levels be successfully completed.
 - 5. Game contains five levels that are increasingly more difficult.
 - a. Level difficulty is increased by increasing the speed at which the game is played.
 - i. Each level has a speed increment constant, that is added to the current game speed whenever an obstacle is destroyed or when an obstacle is avoided.
 - When an obstacle is avoided, only half of the constant is added.
 - ii. Each level starts at a base speed and has a maximum speed.

- Whenever a crash occurs between the ship and an obstacle, the ship speed is reset to the increment.

6. Scoring.
 - a. Scoring is based on the current speed of the game * (space speed / ship speed)
 - i. Ship speed is incremented at a rate similar to the space speed. This is necessary so that the ship can move to engage obstacles at the same rate that they are approaching.

D. Development Platform.

1. The game is being developed in Microsoft C# with Managed DirectX 9, to run on Microsoft Windows based machines with DirectX support.

II. Game Mechanics.

A. User Interface Description.

1. The user interface consists of the main game environment and the game statistics.
2. The game is controlled by the user either through keyboard input.
3. Game status information is displayed on the screen.
 - a. Status information includes: Level Status, Level Objective, Score, Level and Lives.
 - i. Level Status – how much of objective is completed.
 - ii. Level Objective – Number of obstacles that must be destroyed to complete level.
 - iii. Score – Point value of all destroyed obstacles.
 - iv. Level – The current level being played.
 - v. Lives – the number of lives remaining in the game.

B. Use Cases.

1. Avid game player.
 - a. Game may be played by people who use games often, and are very adept at finding game flaws.
2. Occasional game player.