. Score & Lives System: Grant a score to every enemy that the player spaceship kills. The game must start with X lives and each time the player is killed (due to a collision with an enemy or due to an attack by an enemy), you must reduce the lives. If the lives is down to 0, the game must be over.

2. Enemy System: Currently, the asteroids are the only 'enemies' that can be killed. Try to add at least two additional types of enemies in the game. Some ides are as follows:

a. asteroid having a different size (larger the size, the more points the player gets);

b. start with random asteroid sizes.. each time a missile/bullet hits the asteroid, the asteroid reduces by X% size. The asteroid gets destroyed when the size goes down to 0.

c. add an enemy spaceship: the spaceship would be able to fire and attack the player, just as the player is able to attack the enemy.

3. Pickup System: Add some random pickups to the game which would add value or enhance the gameplay. You must play a pickup sound when a pickup is picked. Some ideas:

a. Shield pickup: When this is picked up, you add a shield around the player (perhaps, represented by a different ship sprite) and for a duration of time (say 10 seconds) your player spaceship is shielded from any collisions/attacks by enemies.

b. +1 Life: when picked, this adds an additional life to the game.

c. times X score: When picked, this increases the score upon hitting and killing each enemy (either temporarily for X seconds, or may be for the rest of the game, depending upon your game mechanics).

4. Game-end condition: Your game must have a game-end condition (not necessarily a win/lose condition). One way is to end when there are no more enemies left to destroy (by comparing to the number of enemies you generated at the start of the game. )  You must then transition to the game over screen that will display the final score.

5. UI Heads-up-Display (HUD): Display the score and lives on HUD (either via simple text or using sprites for showing lives).

6. UI Screens: Show a main menu to start the game. Once you press start game, you must be able to start the game. You must also show a game-over screen with the final score.

Note: You will learn how to display text using TTF font and how to implement a button in Monday's tutorial videos.

You are free to expand the game and implement additional features should you wish (such as a vertical scrolling system; more than 1 level, etc) and if time permits; but they will not be a part of the core requirements.

7. (Optional): Random Level Generation: Your level must be preferably generated randomly (currently, the asteroids are being generated randomly). You must extend this to pickups and other types of in-game items that you are generating.

Presentation

You will also submit a 10-15 minute presentation video which will explain the core features of your game, and a brief gameplay covering the various possible ways your game-play is designed for (game-end conditions, enemies, pickups etc), walk through the coding you have done to implement the features.

Submission Requirements

1. One-page write-up describing how to play your game; the core features of your game and your game-end conditions.

2. A playable build (zip/rar)

3. The source project with the solution (zip/rar).

4. A 10-15 minute presentation video.  You can use OBS studio (free) to record your screen. https://obsproject.com/

Submit the above 4 files individually in the dropbox

Grade Break-down

1. Scoring System: 10%

2. Enemy System: 25%

3. Pickup System: 20%

4. UI: 10%

5. Game-play features: 12.5%  - How the game functions; whether the game end conditions work; random level generation system;

6. Overall completion: 7.5% (Memory management, coding style and level of completion)

7.  Errors/Bugs/Issues: 10% : (If there are no errors/bugs in your game, you will get the entire 10%)

8. Presentation & Submission: 5% (Failure to follow submission instructions will result in a reduction of this grade).

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          100%

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This assignment is worth at least 30% of the final grade, in place of Assignment 2 (10%) and Design Project (20%).

Due DateApr 23, 2021 11:59 PMAttachments

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