

CS-376 Final project

Overview

For this assignment, you will work in groups to make a new game. This must be a new game. You may use code from your previous games if you like, but you may not count any of it toward the point system given below.

Groups

You can work in groups of up to 4. You may not work in groups of 5. You can also do the project on your own, but we don't recommend it as it is likely to be somewhat more work than if you worked in a group. That said, the expectations for the game will scale with the number of people in the group.

Requirements

The requirements for the game are based on a point system:

- For each type of object on the screen
 - Object appears on screen – 1 point
 - Object moves – 1 point
 - Object controllable by the user – 1 point
 - Object responds to collisions – 1 point
 - Object changes appearance based on some kind of event or condition – 1 point per event or condition up to 3 points for a given type of object
 - Object makes continuous sound – 1 point
 - Object makes sounds in response to events – 1 point per event up to 3 points for a given kind of object
 - NOTE 1: We're interpreting "object on the screen" broadly here. If you have a score counter, that's an object on the screen and it changes its appearance based on some event, so that's 2 points.
 - NOTE 2: This is *type* of object. If you make a particle system, you don't get 100 points because there are 100 particles.
- Controls
 - 1 point for each meaningfully distinct control (joystick axis, button, mouse, keypress)
- Other
 - 25 points for the game being 3D
 - 5 points for implementing any complicated physical forces not already implemented by unity, such as modeling drag and lift for a plane
 - 5 points each for any menus you implement (pause, instructions, start, etc.), up to 3 menus
 - 10 points for implementing game save and restore
 - Dynamic spawning of objects – 1 point

- Multiple levels – 1 point per level up to 5 points.

If you are implementing something not on the list, or that's especially complicated, you should feel free to pitch ideas to us and we'll tell you how many points they're worth.

Example

Here's an accounting of the point system for asteroids:

- The ship (3 points)
 - 1 point for each for being visible, moving, responding to collisions
- Missiles (4 points)
 - 1 point each for being visible, moving, responding to collisions, self-destructing after timeout
- Asteroids (3 points)
 - 1 point each for being visible, moving, responding to collisions.
- Score counter (2 points)
 - 1 point each for being visible, changing appearance based on events
- Controls (3 points)
 - Turn, thrust, and fire
- Dynamics spawning: 1 point
- Using unity physics: 5 points

So asteroids would be worth 21 points under this system. However, you should avoid direct reimplementations of games we've already done in class. So if you are thinking about doing asteroids, maybe include an enemy ship that tries to kill you.

Point requirements

Here are the number of points your group needs:

Group members	Minimum points
1	25
2	40
3	55
4	70

Playability

As before, the game's instructions must be sufficient to allow the reviewers to play it and understand if it's working. And the player shouldn't be able to get into "stuck states" such as flying off screen and not being able to figure out how to get back.

Deliverables

You will receive instructions later on for how to register your group on canvas. You must register your group before you turn in your assignment. Once you've registered your group, you should upload to canvas a zip file containing:

- Your **game**
- A **README.txt** file that provides any necessary instructions on how to play the game.
- A **Credits.txt** file that lists any assets, including code, you got from the net, from others, or from your previous assignments. Note that you cannot count reused code toward the point system above.
- A filled-out copy of the **Self Assessment** file describing what went right with your project, what went wrong, what you learned, and what score you believe you deserve for the assignment.

Only one group member should upload the assignment.