

CSE 4200 – Spring 2022
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3D Snake Game

For the course project I am proposing to make a rendition (3D version to be exact) of the popular “Snake” game. The inspiration for this project can be found here: <https://www.coolmathgames.com/0-snake> , and an image can also be found below. I am going to recreate this snake game in OpenGL and emulate it in a ray casting “engine” that I will also create in OpenGL. The goal for this project is to have a functioning ray casting “game-engine” with features like a tick function, user input, lighting using normal vectors, and others as necessary. For the lighting it is assumed that all in-game objects will have corresponding normal vectors, as well as a light source within the environment. For the snake game, all in game objects will be cubes, so I believe this should be very accomplishable. I will have to test this as I am implementing the game, but for the light sources I plan on having one or more light sources spread across the “sky” or “ceiling,” and another main source coming from the player - or the head of the snake. I would like to note that this gives me some concerns about performance, especially with this being replicated over the network from the lab computers, so we will see how performance is with this lighting. If performance does appear to be sufficiently poor, I may create another version which does not use the normal vector lighting to see if this provides an improvement in performance.

Snake Game Example

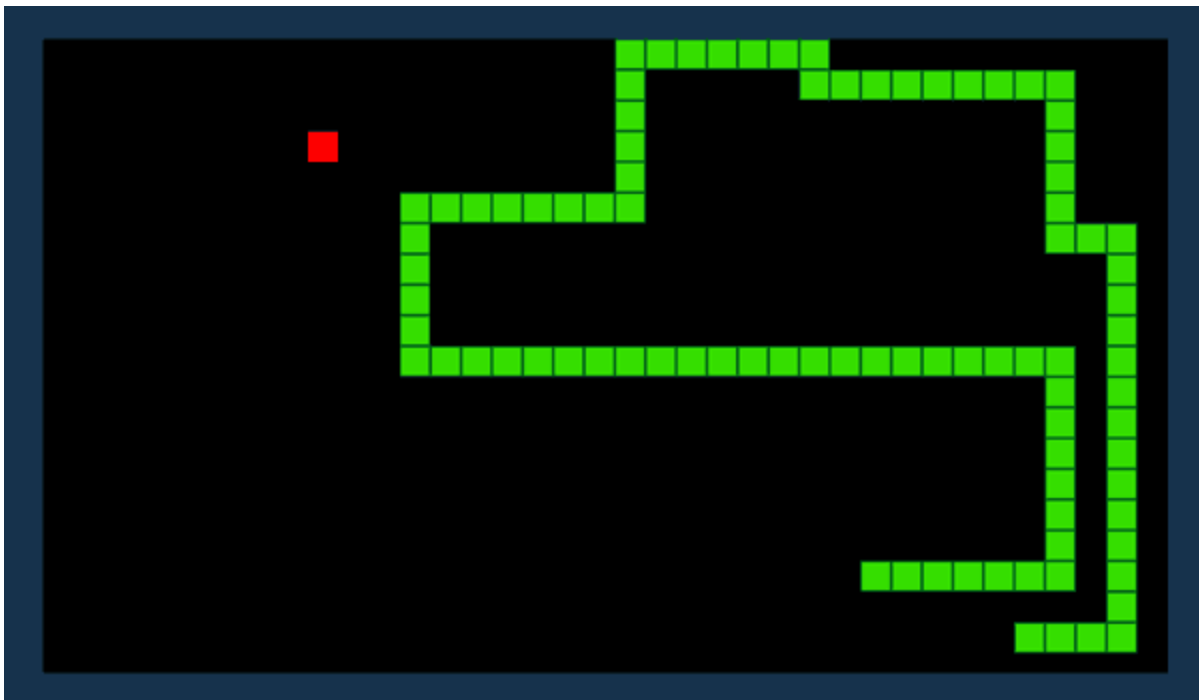


Figure 1.a) “Snake Game Example”