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CIS 497 Idea

I am interested in creating a voxel implementation of [Wave Function Collapse](#). The goal of the project is to procedurally generate large structures or terrain (that would otherwise be difficult to tedious to manually create) based on a small sample of input tiles. A secondary goal is to create a full-fledged tool with a UI that allows for user input in the form of base tiles and the ability to export a generated mesh that could potentially be imported into another software like Maya or a game engine. Ideally the project would simulate a tool that a technical artist might use. Another potential feature is the ability to add constraints to the algorithm; for example, the user might specify the location of several specific tiles while the algorithm fills in the rest. The project will be implemented in C++ and OpenGL using Qt; tiles will likely be generated with a software like MagicaVoxel. The final presentation will be accompanied by renders of different generated structures along with renders of the algorithm iterations.