Final Project Proposal

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CSCI 0422 - Geometric Modeling (Spring 2022)
Last two deliverables: Final Project & Unit Tests
One class per week will now be devoted to final project time.

- Today: work on proposal (identify **topic**, **resources**, **examples**).
- Next two weeks: implement stuff!
Final project ideas?

- Subdivision Surfaces
- Restricted Voronoi Diagrams
- Parameterization
- Remeshing (3d surface or 2d domains)
- Surface Reconstruction
- 2d Poisson equation solver
- Automatic differentiation
- Constructive Solid Geometry
- pybind11 interface
- DearImGui interface
- 3d Delaunay tetrahedralization
- 3d tetrahedralization via TetGen
- Curve Modeler using BSplines
- Advancing Front Mesher
- Triangle-to-Quad converter
- Computer Graphics:
  - ray tracer with BVH
  - BSP renderer
- or something else!
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\[ \nabla^2 u = f(x), \quad u \in \Omega, u|_{\partial \Omega} = 0 \]
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Project requirements & milestones.

requirements:
- most source code should be added to src/ (only your driver should be in projects/project4).
- you will need to setup CMake configuration files for your project (very similar to other projects).
- **algorithm**: statistics, e.g. timing, quality, size of mesh.
- **interface**: detailed documentation with Doxygen.

milestones:
- **April 24th**: proposal (topic, resources, examples).
- **Last week of classes**: project presentations (10 minutes per group).
- **May 17th**: final project code + report (README) due.
Rest of class time to work on Project Proposal (due Sunday, April 24th).