MATH 676

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Finite element methods in scientific computing

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Lecture 14:

A fifth example:

The *step-5* tutorial program
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Successively refined meshes and a number of small improvements

step-5

Step-5 shows:

- How to compute on successively refined meshes to assess convergence
- Safe programming techniques
- The Laplace equation with a non-constant coefficient

step-5

Read through the commented program at
http://www.dealii.org/7.1.0/doxygen/deal.II/step_5.html

Then play with the program:

cd examples/step-5
cmake -DDEAL_II_DIR=/a/b/c ; make run

This will run the program and generate output files:

ls -l

Then visualize the solutions:

visit

Next step: Play by following the suggestions in the results section. This is the best way to learn!

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