

330:155g Finite Element Analysis

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4 Algor Example

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The Basic Steps of FEA

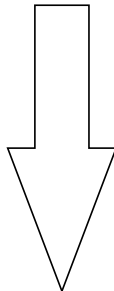
Build/Mesh a Model

**Define FEA Model -
Analysis and Element Types**

Define Loads and Constraints

Analyze Model (Solve)

Review Results and Create Presentations



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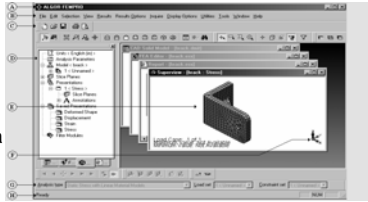
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FEMPRO Interface

- A. Title bar
- B. Menu bar
- C. Toolbars
- D. Tree view
- E. Working area
- F. Miniaxis
- G. Design scenario toolbar
- H. Status bar



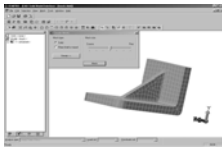
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Create Mesh



- CAD Solid Model Environment
 - Open and mesh models from CAD solid modelers or universal files.



- Superdraw
 - Create structured 2-D or 3-D FEA meshes using CAD wireframe commands.

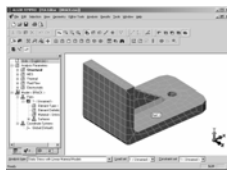
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Assign FEA Parameters



- FEA Editor Environment
 - Add truss and beam elements.
 - Assign element types and parameters.
 - Assign material properties.
 - Apply loads and constraints.
 - Assign analysis parameters.
 - Analyze the model.

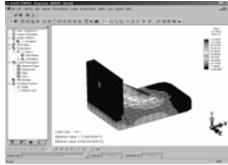
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Review Results



- Superview IV Results Environment
 - Review the model setup.
 - Review the analysis results.
 - Create images or animations of results.

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Present Results



- Report Environment
 - Generate a report of the analysis for presentation purposes.
 - Add images or animations in an appendix.
 - View summary and log files from the analysis.

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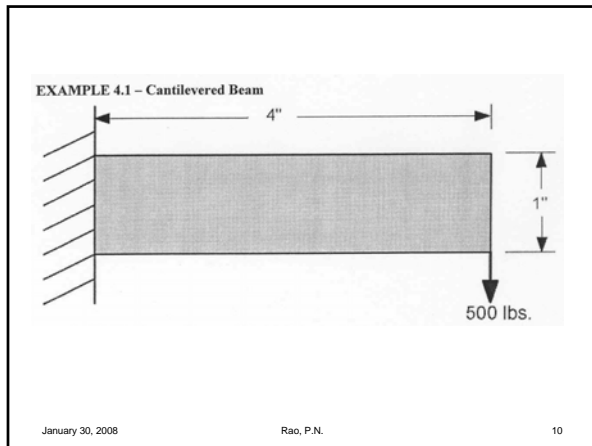
Example 4-1

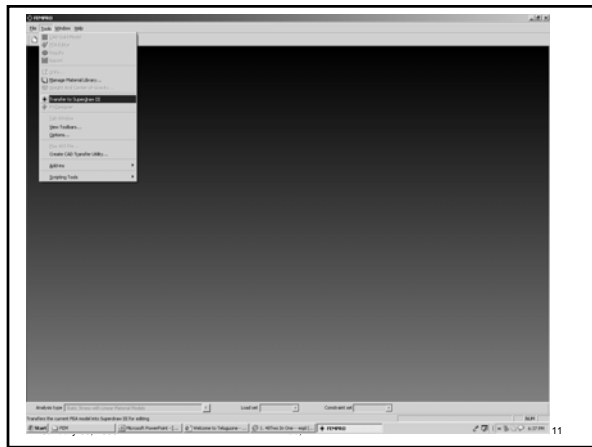
- A cantilever beam that is 4 in long, 1 in thick and 1 in deep. It is made of ASTM-A-36 steel and is loaded at its end with a force of 500 lb.

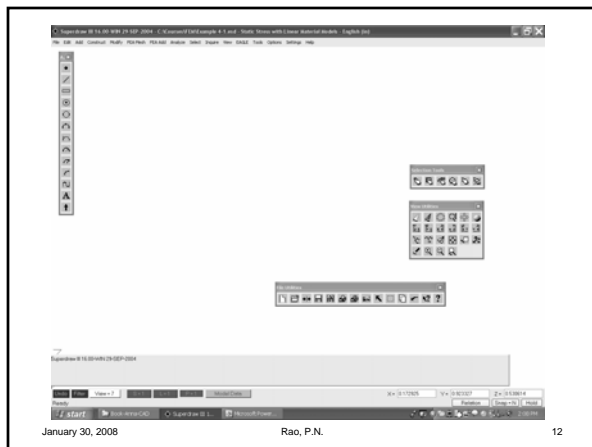
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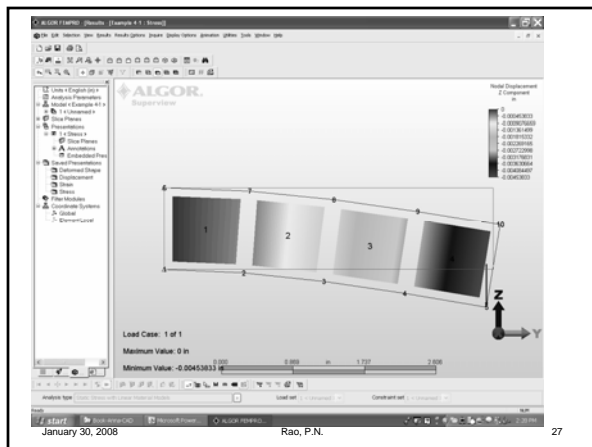
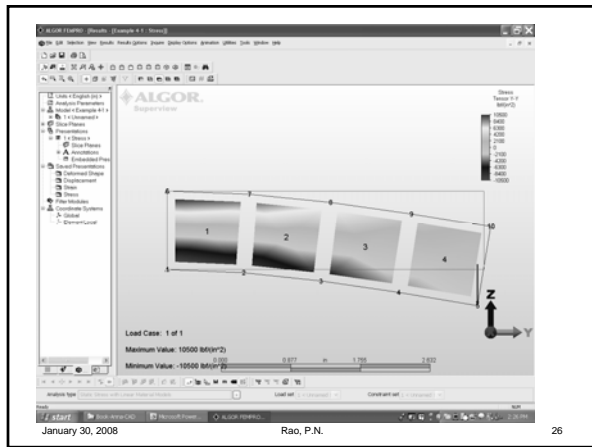
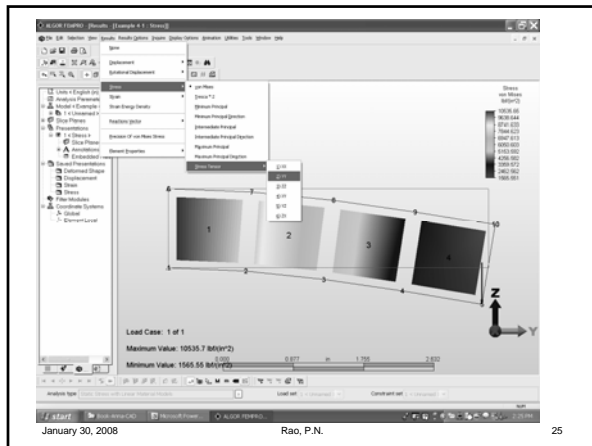
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Report generation

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