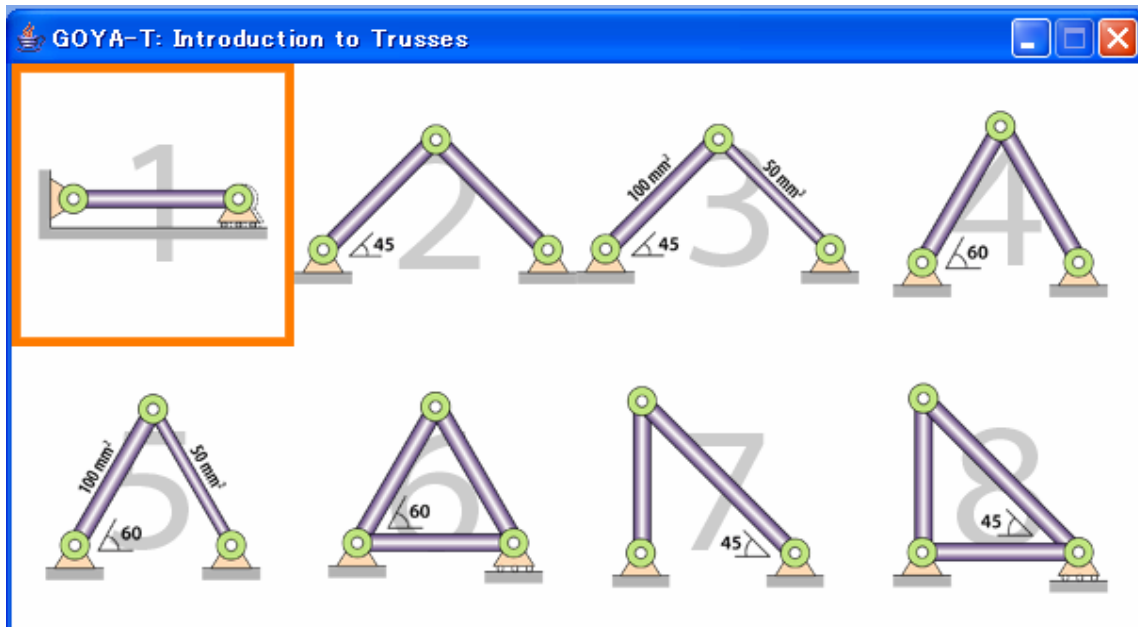


USER'S MANUAL FOR GOYA

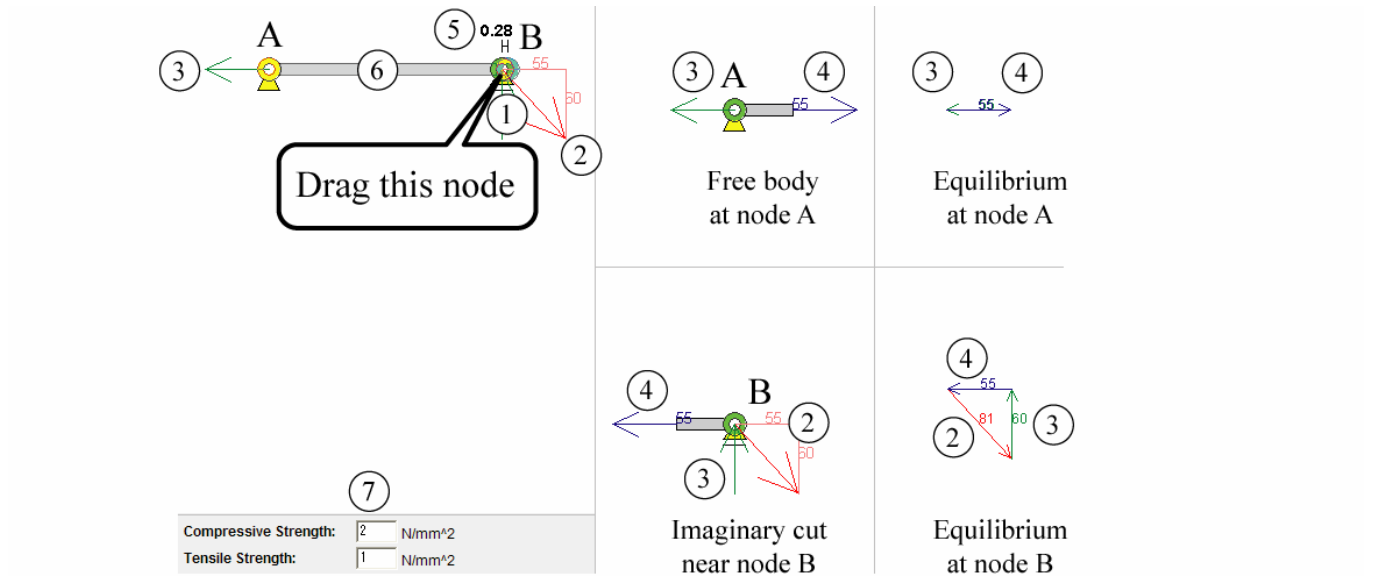
How to start GOYA-T

You can use most types of computers (Windows, Macintosh or Linux). Double click the icon "GOYA-T.jar." If you do not get the window shown below, visit <http://www.java.com/> and install JAVA.



How to use GOYA-T1

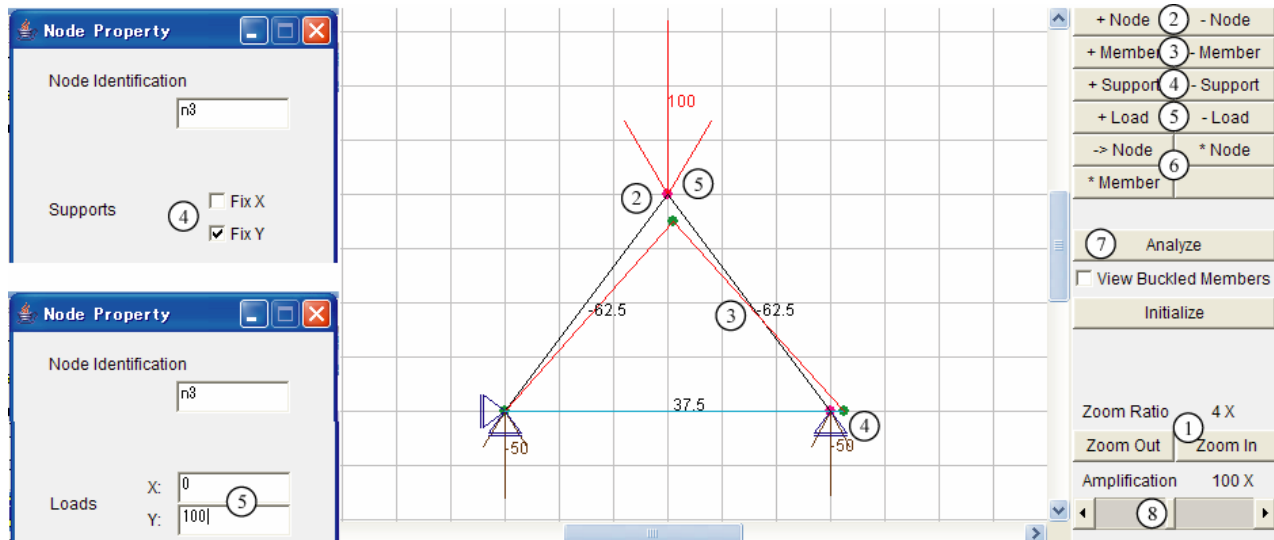
Click the icon at the upper left of the window shown above to get the following window.



- ① Drag node B as you want. (Not the red arrow.)
- ② The red arrow shows the external force.
- ③ The green arrows show the reactions.
- ④ The blue arrow shows the axial force.
- ⑤ The black number shows the displacement of node B.
- ⑥ The cross-sectional area of the bar is assumed to be 200 mm². The color changes to blue if its tensile strength and to red if its compressive strength is exceeded.
- ⑦ Type the desired strength of the material.

How to use GOYA-A

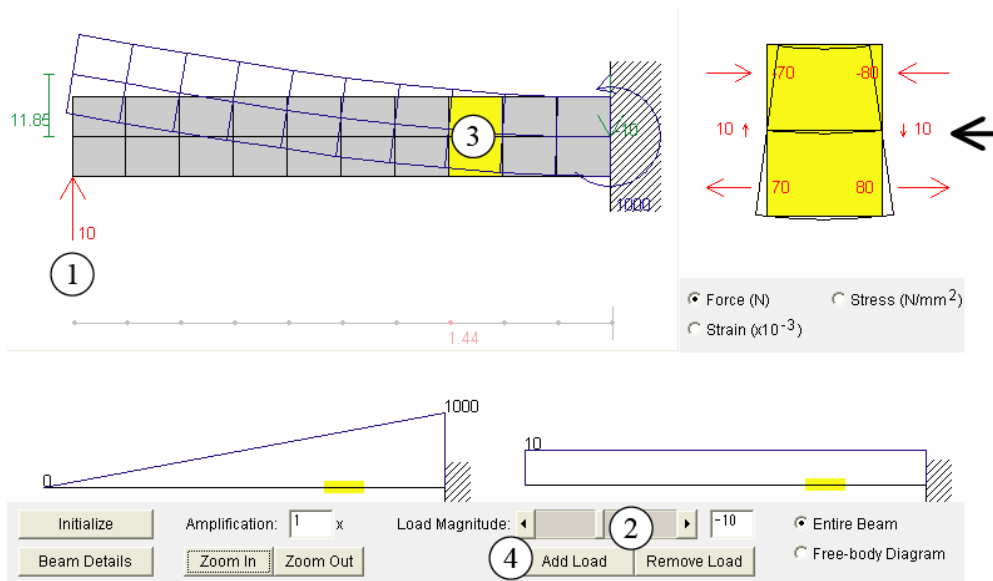
Double click the icon “GOYA-A.jar” to find the window shown below.



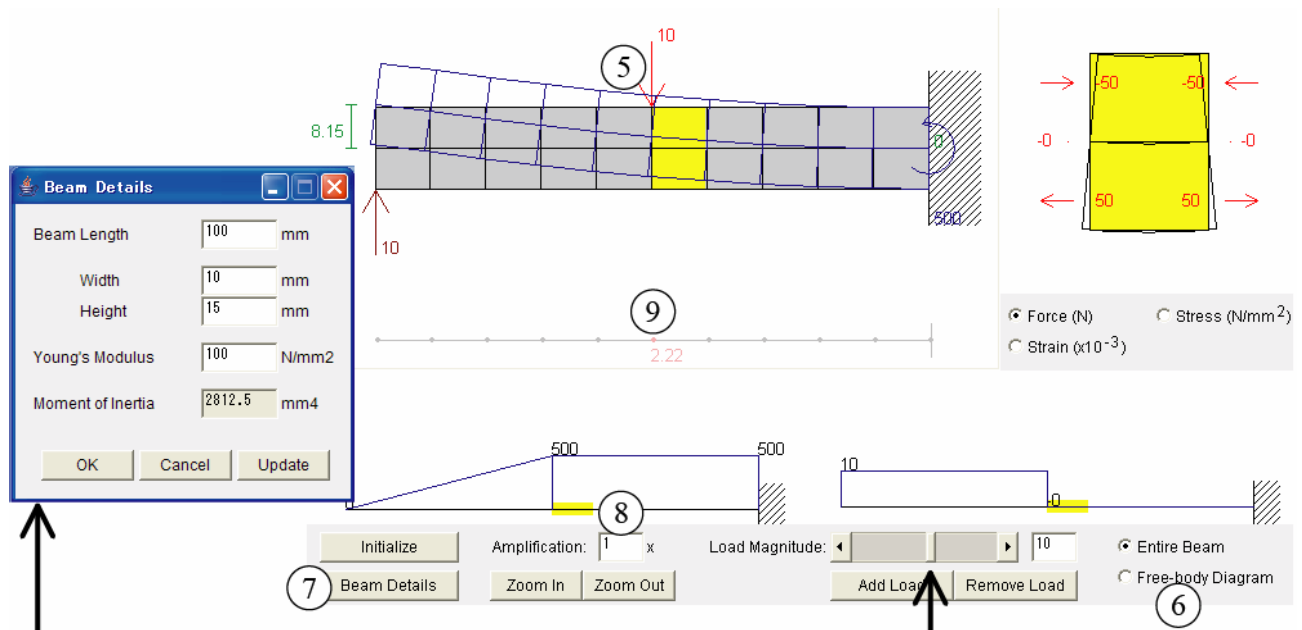
- 1 Push the 'Zoom In' button to have a close-up view of the canvas.
- 2 To add a node, push the '+Node' button and click on the canvas.
To remove a node, push the '-Node' button and click the node.
- 3 To add a member, push the '+Member' button and drag between the nodes.
To remove a member, push the '-Member' button and drag between the nodes.
- 4 To add a roller support, push the '+Support' button, check 'Fix Y' in a new window, and click the node.
To remove a support, push the '-Support' button and click the node.
- 5 To add a load, push the '+Load' button, type values in a new window, and click the node.
To remove a load, push the '-Load' button and click the node.
- 6 To move a node, push the '->Node' button and drag the node.
To display the properties of a node, push the '*Node' button and click the node.
To change the properties of a member, push the '*Member' button and drag between the nodes.
- 7 Push the 'Analyze' button to have the result.
- 8 To amplify or reduce the deformation, slide the 'Amplification' bar .

How to use GOYA-C (GOYA-S for simple beam is similar to GOYA-C.)

Double click the icon “GOYA-C.jar” to find the window shown below.



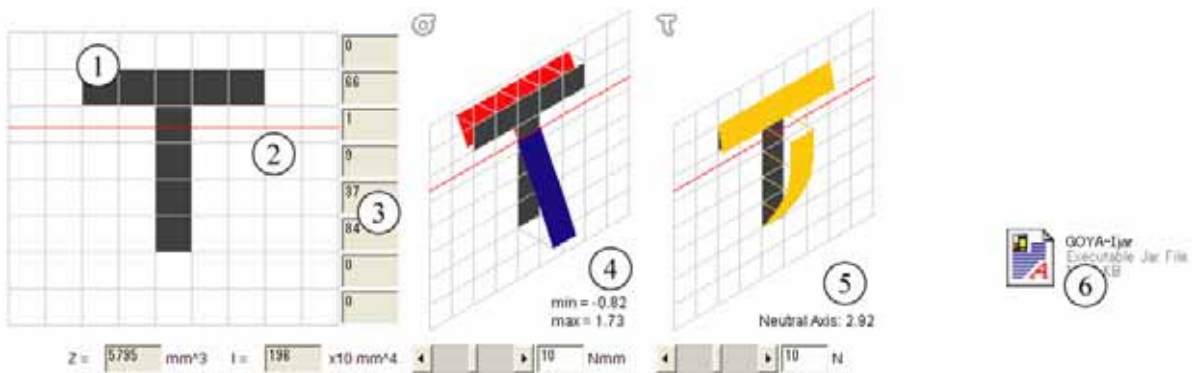
- ① Drag the red arrow to the right or left to move the external force.
- ② Slide the bar to change the magnitude of the external force.
- ③ Click a segment to see the forces acting on the segment here.
- ④ Click the 'Add Load' button to create another load.



- ⑤ The 'Load Magnitude' sliding-bar is applicable to the force shown in red. To change the magnitude of a force shown in brown, click the arrow and slide the bar.
- ⑥ Check here to obtain a free-body diagram.
- ⑦ Click the 'Beam Detail' button and type in a new window to change the beam property.
- ⑧ Type any number and hit 'Enter' key to amplify or reduce the deformation.
- ⑨ This number shows the deflection at the selected segment.

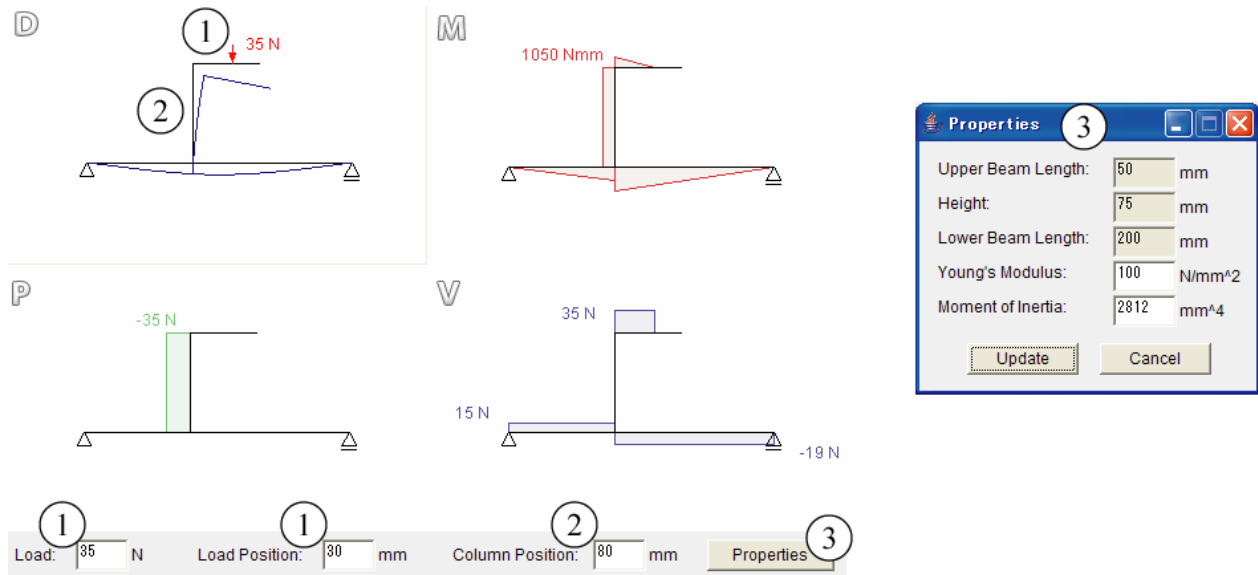
How to use GOYA-I

Double click the icon “GOYA-I.jar” to find the window shown below.



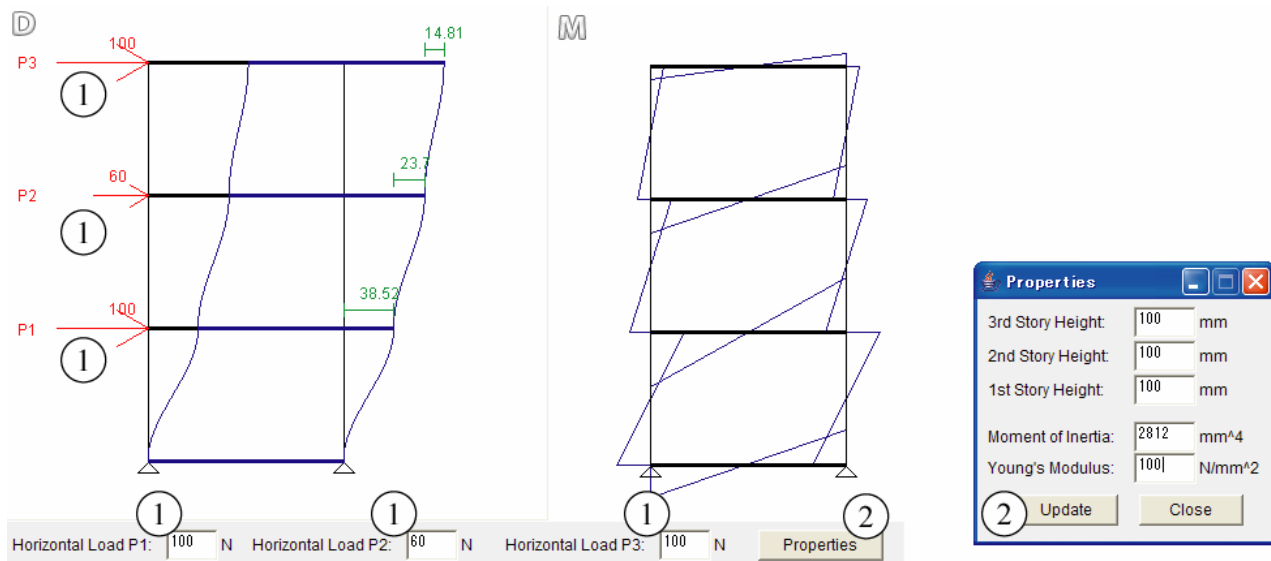
- ① The black squares constitute the section. To change a black square to white or vice versa, click the square.
- ② The red line shows the neutral axis.
- ③ These numbers show the contribution of each row to the moment of inertia.
- ④ The numbers after 'min=' and 'max=' show the maximum compressive and tensile stresses.
- ⑤ This number shows the shear stress at the neutral axis.
- ⑥ If you want to make another window, double click the 'GOYA-I.jar' icon.

How to use GOYA-F2 (GOYA-F1 and F3 are similar to GOYA-F2.)



- ① To change the location and magnitude of the force, drag the red arrow or type values.
- ② To move the location of the column, drag the column or type a value.
- ③ To change the beam length etc, push the 'Properties' button, type the values in a new window, and push the 'Update' button.

How to use GOYA-F4



- ① To change the magnitude of the force, drag the red arrow or type values.
- ② To change the story height, push the 'Properties' button, type the values in a new window, and push the 'Update' button. 'Moment of Inertia' and 'Young's Modulus' apply to all the columns.