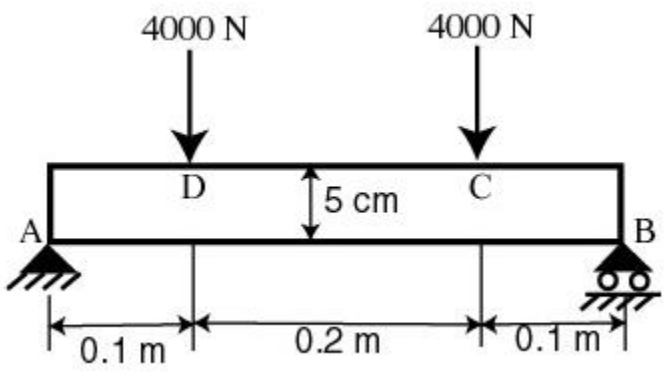
ANSYS 12 - Beam - Step 4

Author: Rajesh Bhaskaran & Yong Sheng Khoo, Cornell University

Step 4: Setup (Physics)

We need to specify point BC's at *A*, *B*, *C* and *D*.



Let's start with setting up boundary condition at A.
Outline > Static Structural (A5) > Insert > Remote Displacement
Select point A in the ***Graphics*** window and click ***Apply*** next to Geometry under ***Details of "Remote Displacement"***. Enter 0 for all UX, UY, UZ, ROTX and ROTY except for ROTZ. Let ROTZ to be free.

Details of "Remote Displacement"	
Scope	
Scoping Method	Geometry Selection
Geometry	1 Vertex
Coordinate System	Global Coordinate System
X Coordinate	0. m
Y Coordinate	0. m
Z Coordinate	0. m
Location	Click to Change
Definition	
Type	Remote Displacement
X Component	0. m (ramped)
Y Component	0. m (ramped)
Z Component	0. m (ramped)
Rotation X	0. ° (ramped)
Rotation Y	0. ° (ramped)
Rotation Z	Free
Suppressed	No

Let's move on to setting up boundary condition B.
Outline > Static Structural (A5) > Insert > Remote Displacement
Select point B in the ***Graphics*** window and click ***Apply*** next to Geometry under ***Details of "Displacement 2"***. Enter 0 for all UY, UZ, ROTX and ROTY except for ROTZ. Let UX and ROTZ to be free.

Details of "Remote Displacement 2"	
Scope	
Scoping Method	Geometry Selection
Geometry	1 Vertex
Coordinate System	Global Coordinate System
X Coordinate	0.4 m
Y Coordinate	0. m
Z Coordinate	0. m
Location	Click to Change
Definition	
Type	Remote Displacement
X Component	Free
Y Component	0. m (ramped)
Z Component	0. m (ramped)
Rotation X	0. ° (ramped)
Rotation Y	0. ° (ramped)
Rotation Z	Free
Suppressed	No

We can move on to setting up point force at point C and D.

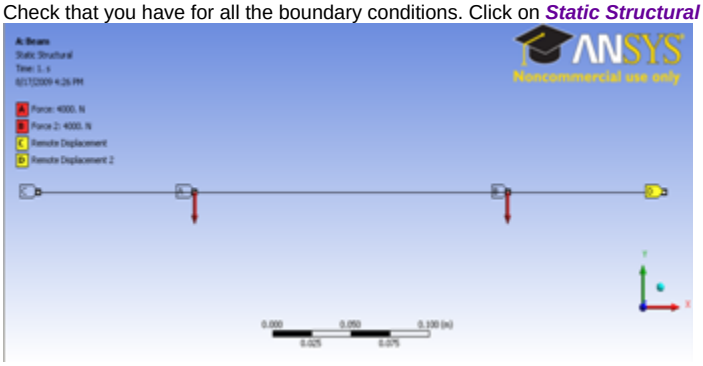
Outline > Static Structural (A5) > Insert > Force

Select point C in the ***Graphics*** window and click ***Apply*** next to Geometry under ***Details of "Force"***. Next to ***Define By***, change ***Vector*** to ***Components***. Enter -4000 for ***Y Component***.

Details of "Force"	
Scope	
Scoping Method	Geometry Selection
Geometry	1 Vertex
Definition	
Type	Force
Define By	Components
Coordinate System	Global Coordinate System
X Component	0. N (ramped)
Y Component	-4000. N (ramped)
Suppressed	No

Do the same for point D.

Check that you have for all the boundary conditions. Click on ***Static Structural (A5)*** to view this in Graphics window.



Higher Resolution Image

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