



Al-Mustaqbal University / College of Engineering & Technology

Department : Mechanical Power Engineering

Class : Third

Subject : Computer Applications3 / Code : UOMU0000033

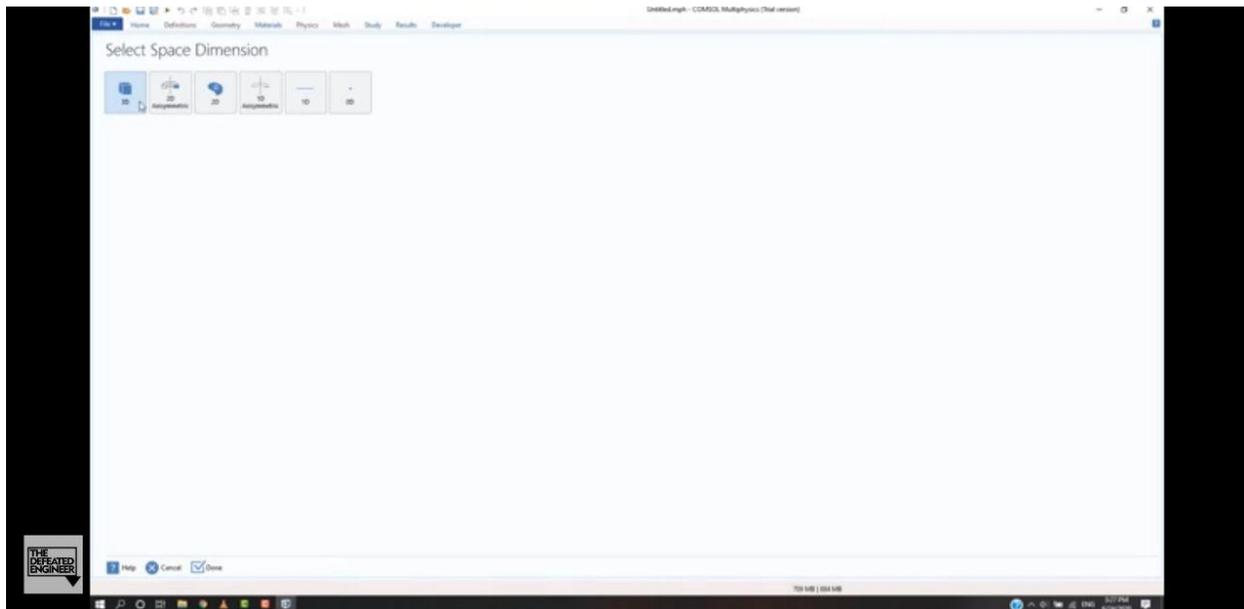
Lecturer: M.Sc Abrar Abdulkareem

2<sup>nd</sup> term – Lecture No. 10 & Lecture Name Tenth Lecture

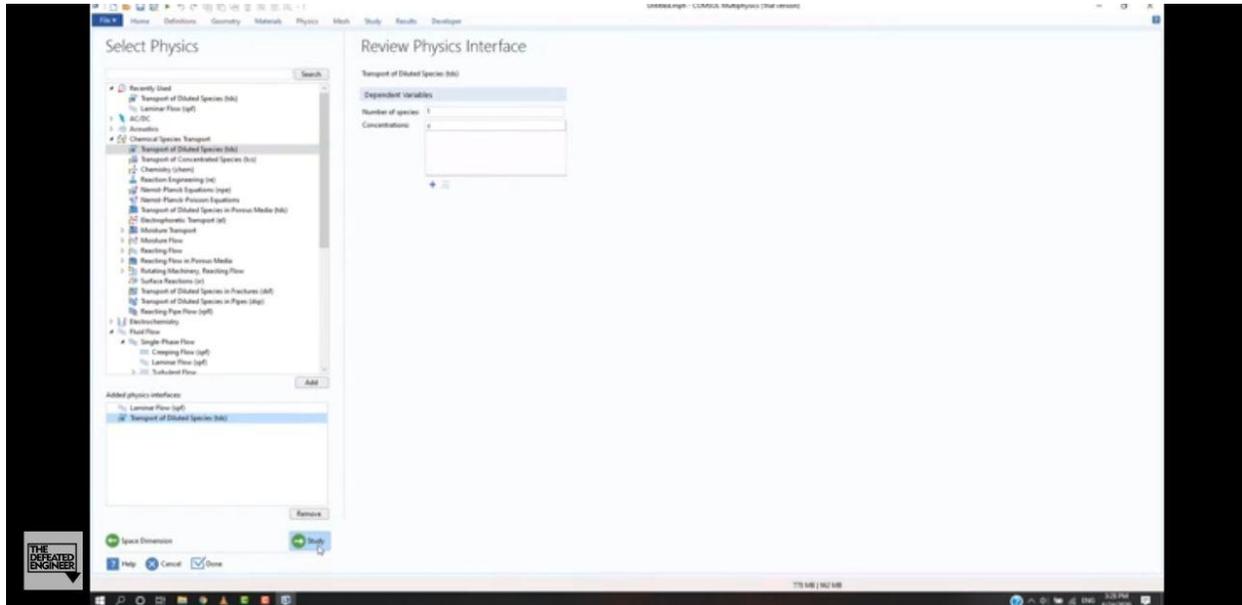


## Computing laminar fluid flow in microchannel :

Start by choosing three-D space dimension.

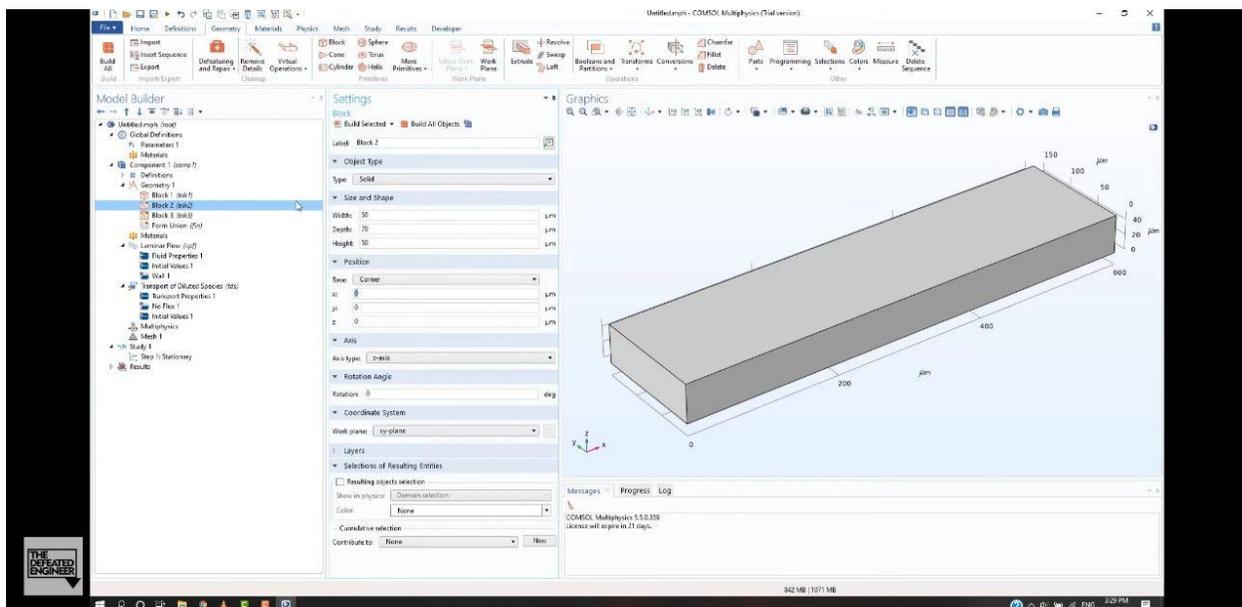


Now choose two physics, the first one is laminar fluid flow and the second one is Transport of diluted species.



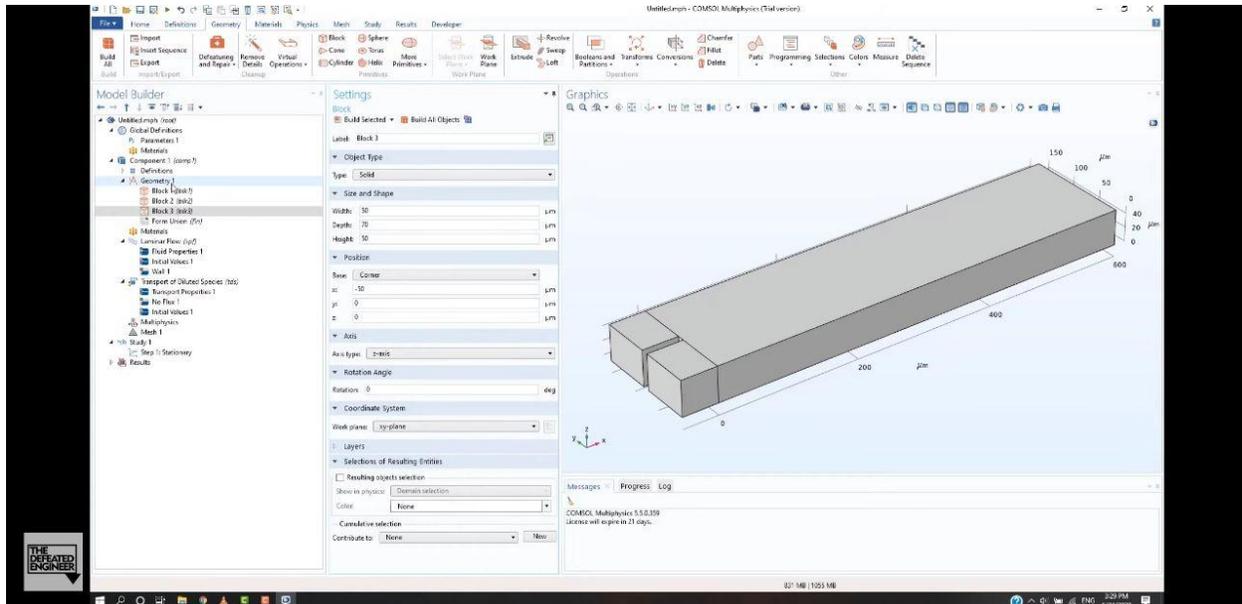
Choose stationary and do a study.

From Geometry click on block and insert the dimensions as demonstrated.

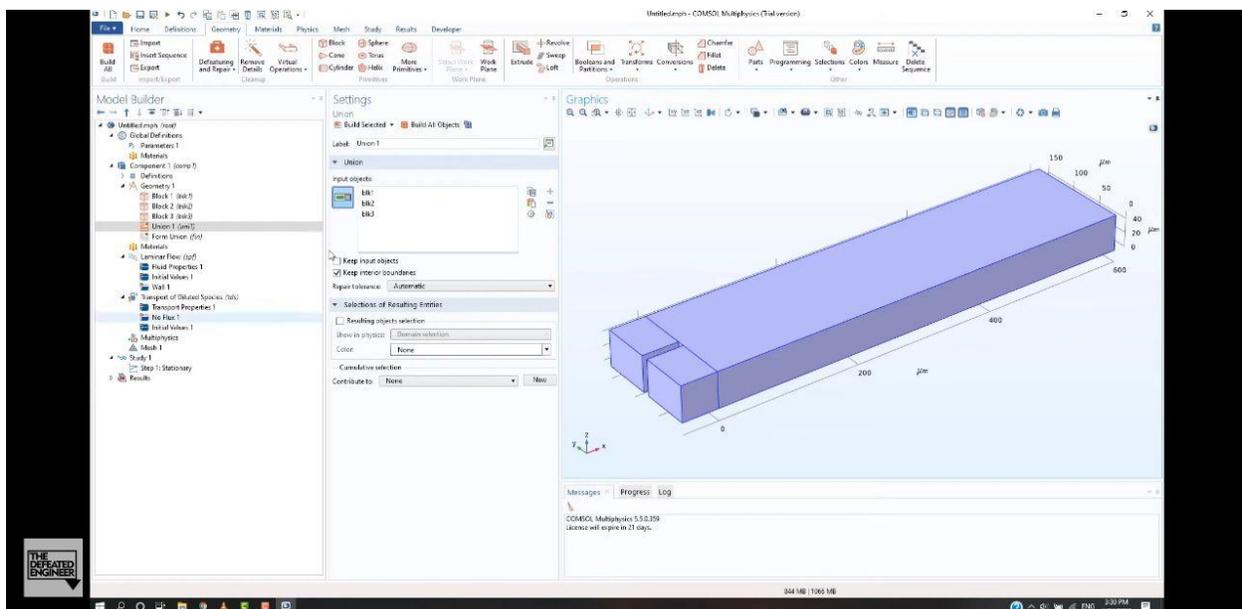




Add another two blocks as shown below:

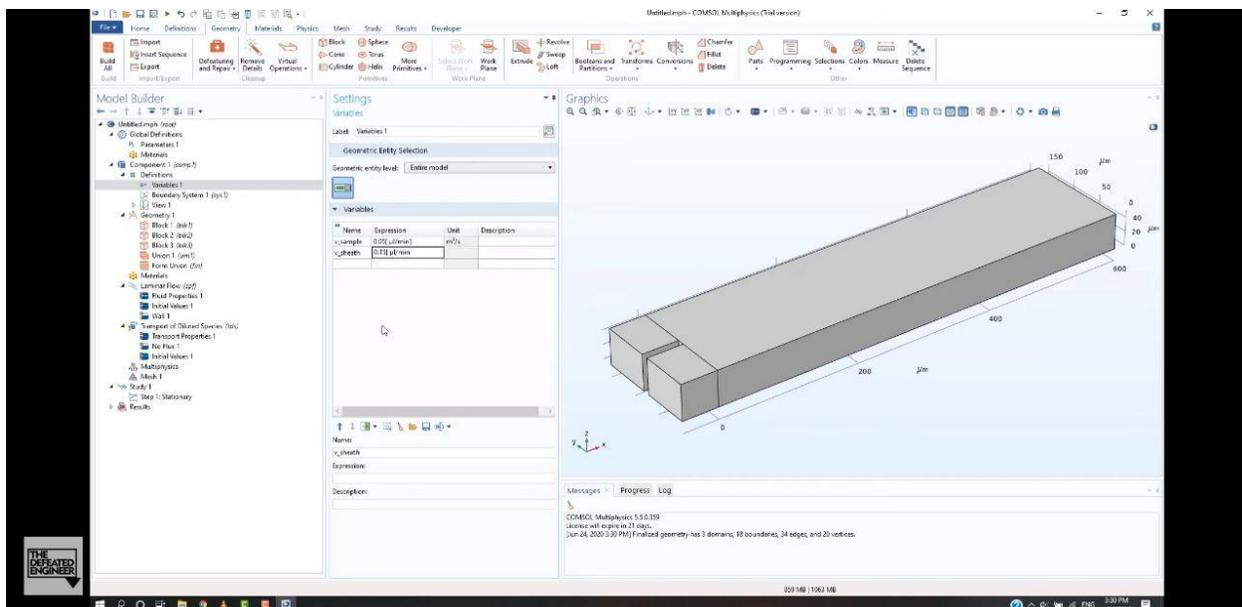


Form union as shown below:





Insert the variables as demonstrated below:



Set the first boundary condition (Inlet) on the side of the block:



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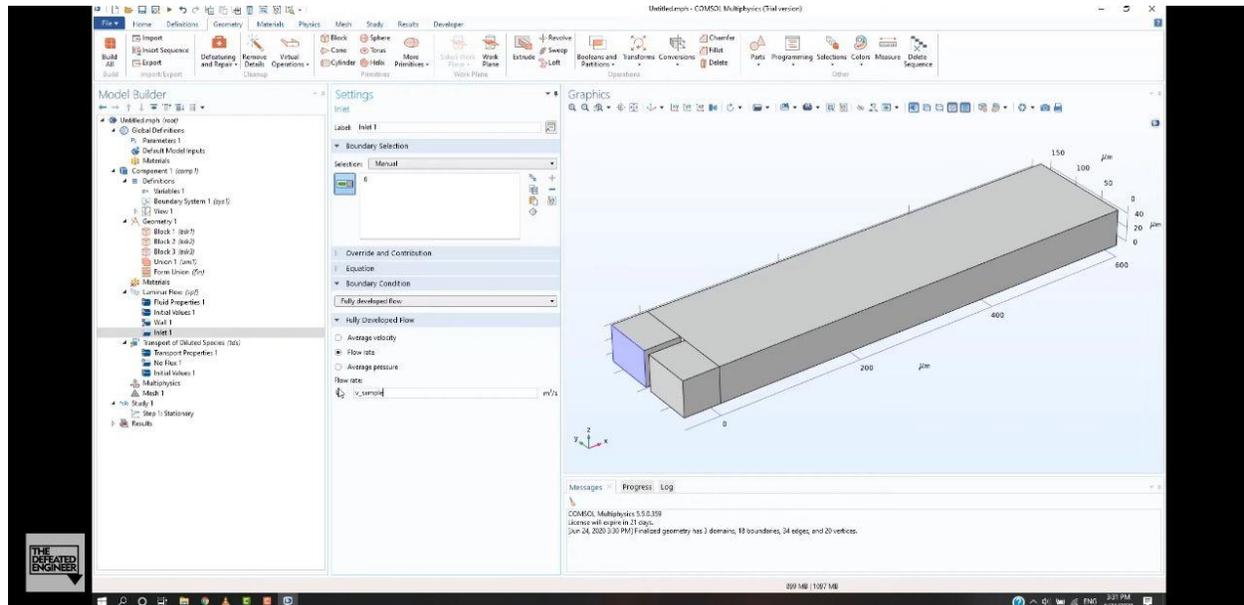
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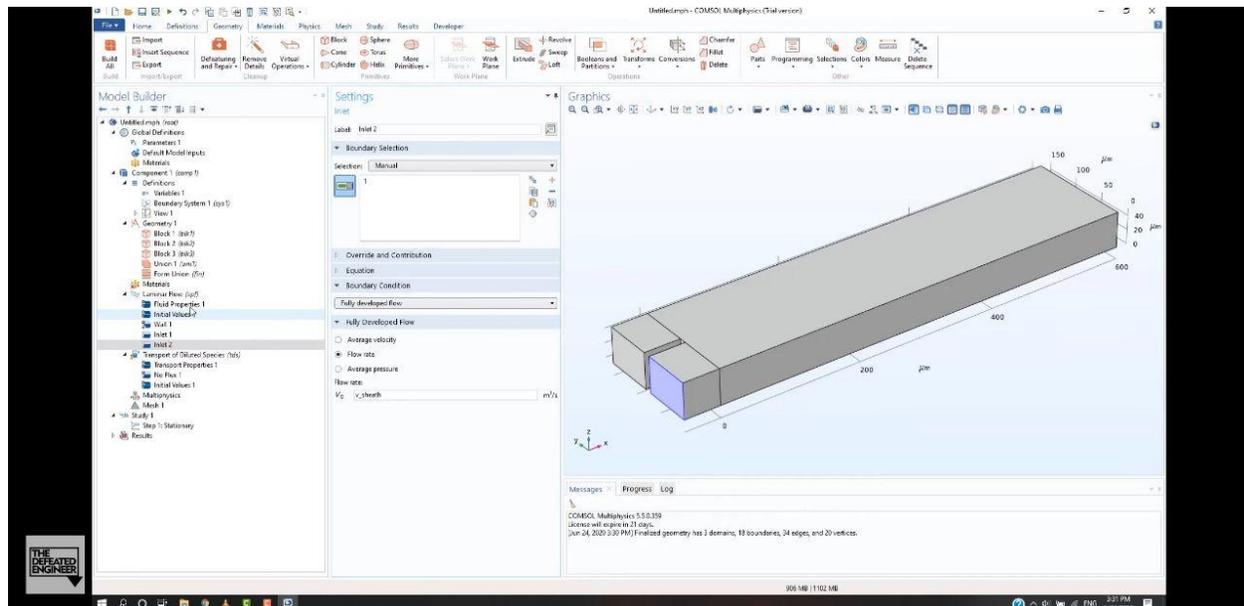
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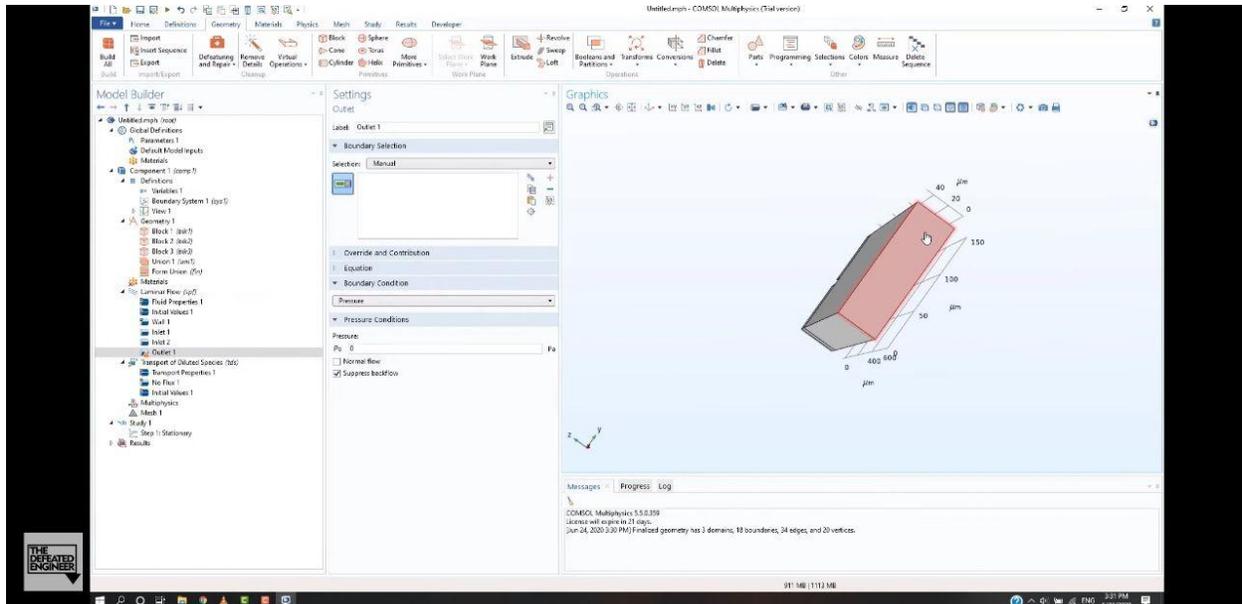


Set the second inlet boundary condition on the second block a shown below:





Set the outlet boundary condition on the back of the main block:



Insert the fluid properties ( dynamic viscosity and density) as shown below:



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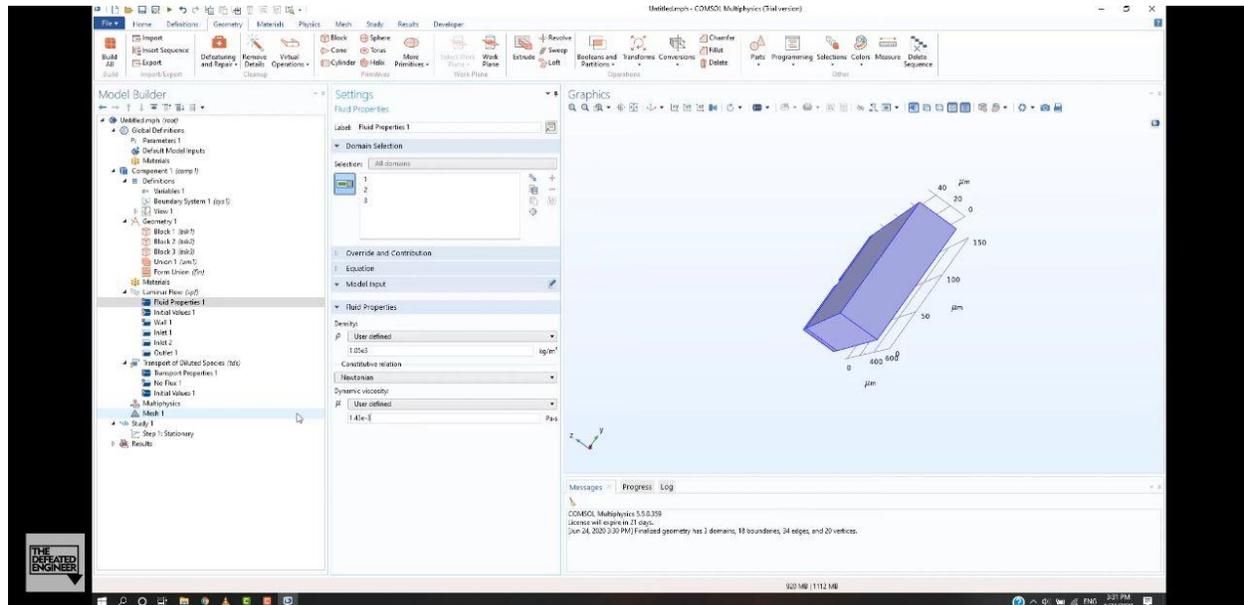
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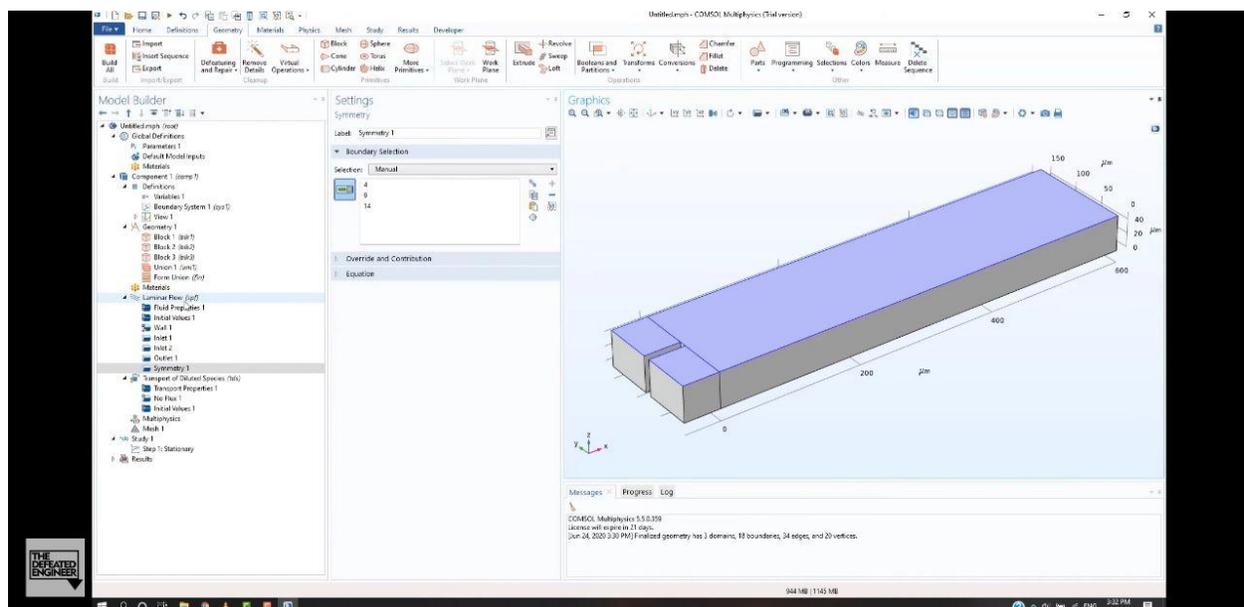
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Choose symmetry and apply it to the upper surfaces:







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