Class: third Stage
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Chapter two

1- example 1 :This tutorial illustrates how to use CFD-Post to visualize a two dimensional laminar fluid flow.

This tutorial demonstrates how to do the following:

1.1 Create a Working Directory

1.2Launch CFD-Post

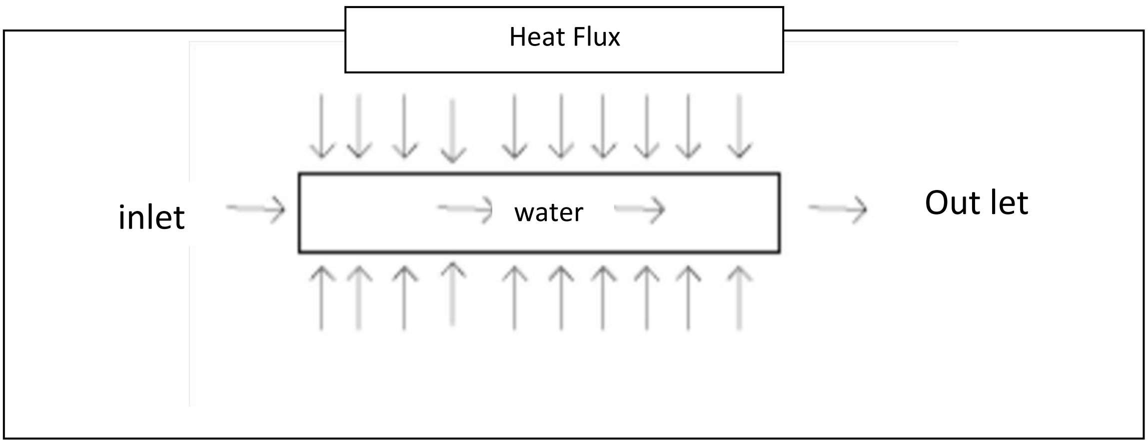
1.3 Display the Solution in CFD-Post

1.4 Save Your Work

1.5 Generated Files

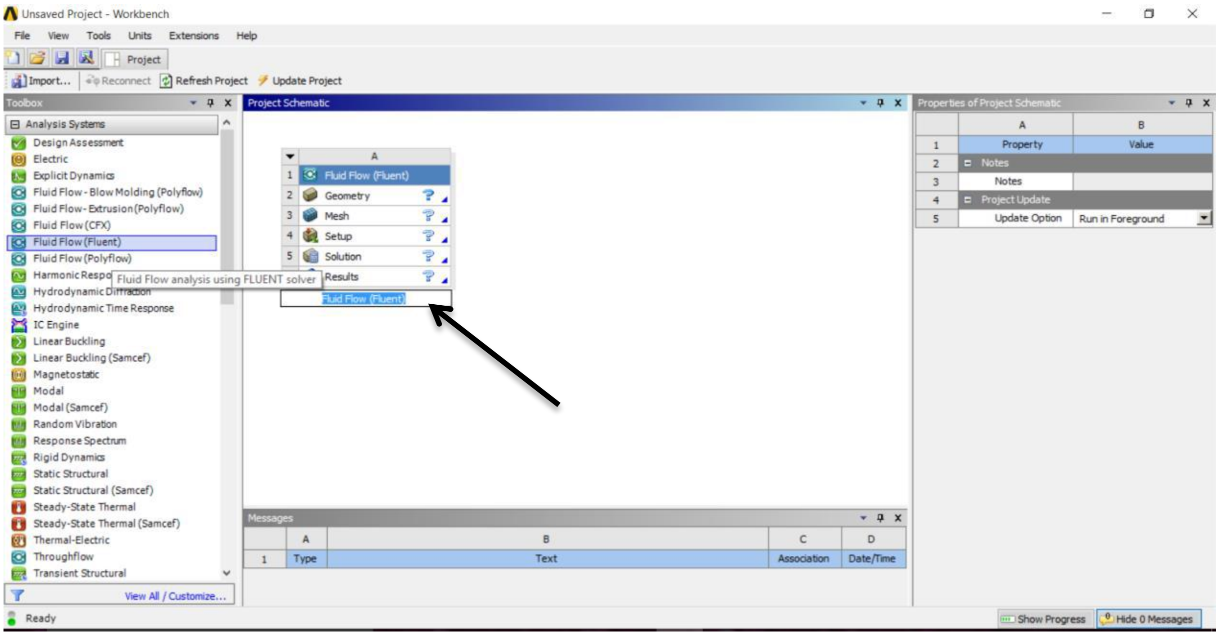
Problem Description

The problem to be considered is shown schematically in Figure below: A cold fluid at 25° C flows into the pipe through a large inlet. The pipe dimensions are in mm (200, 30 mm), but the fluid properties and boundary conditions are given in metric units. The Reynolds number for the flow at the larger inlet is 2,000, so the flow has been modeled as being laminar. The walls are exposed to a 300 W /m2 heat flux.

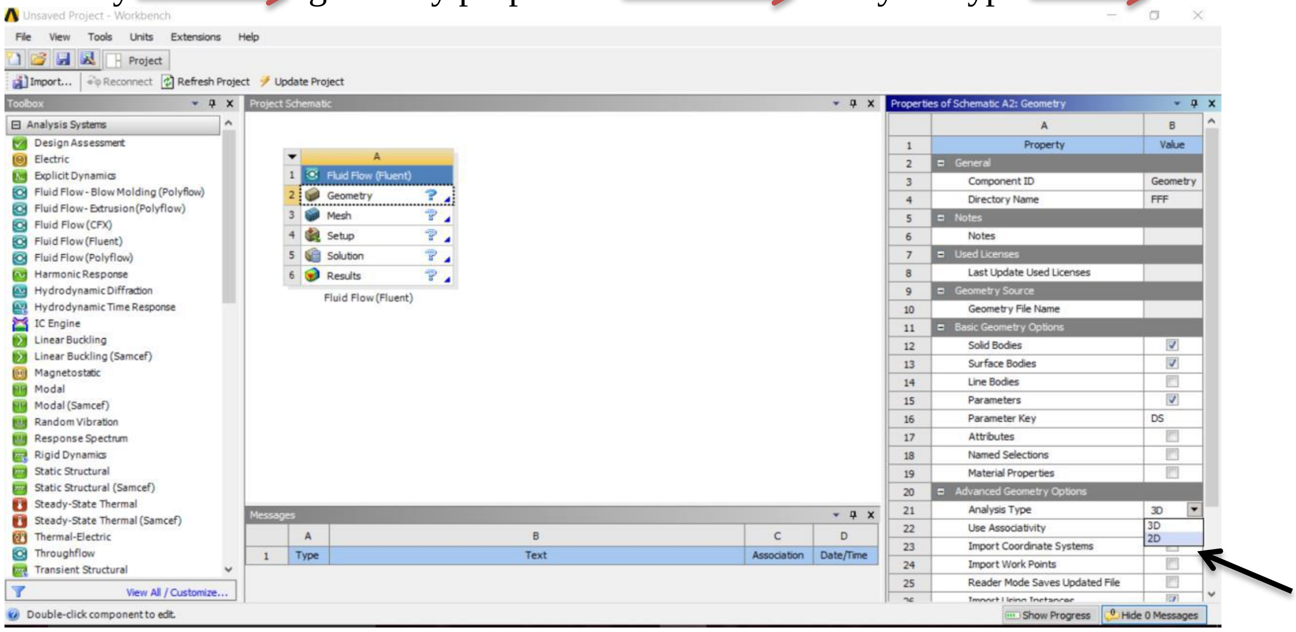


SOLUTION:

1- Analysis systems → fluid flow (fluent) → create name

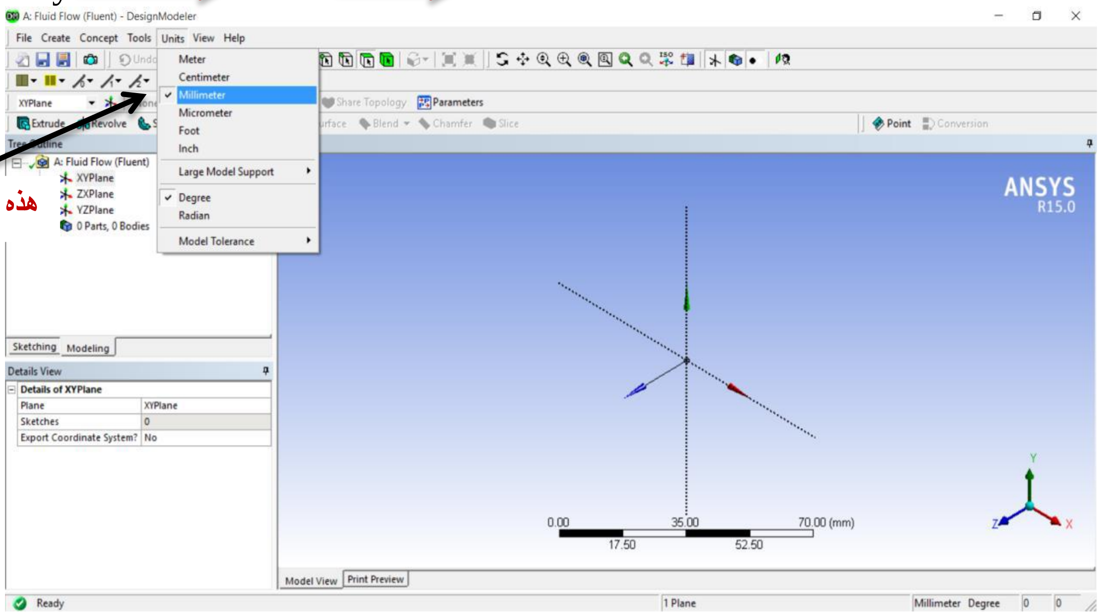


2- Geometry → geometry properties → Analysis Type → 2D



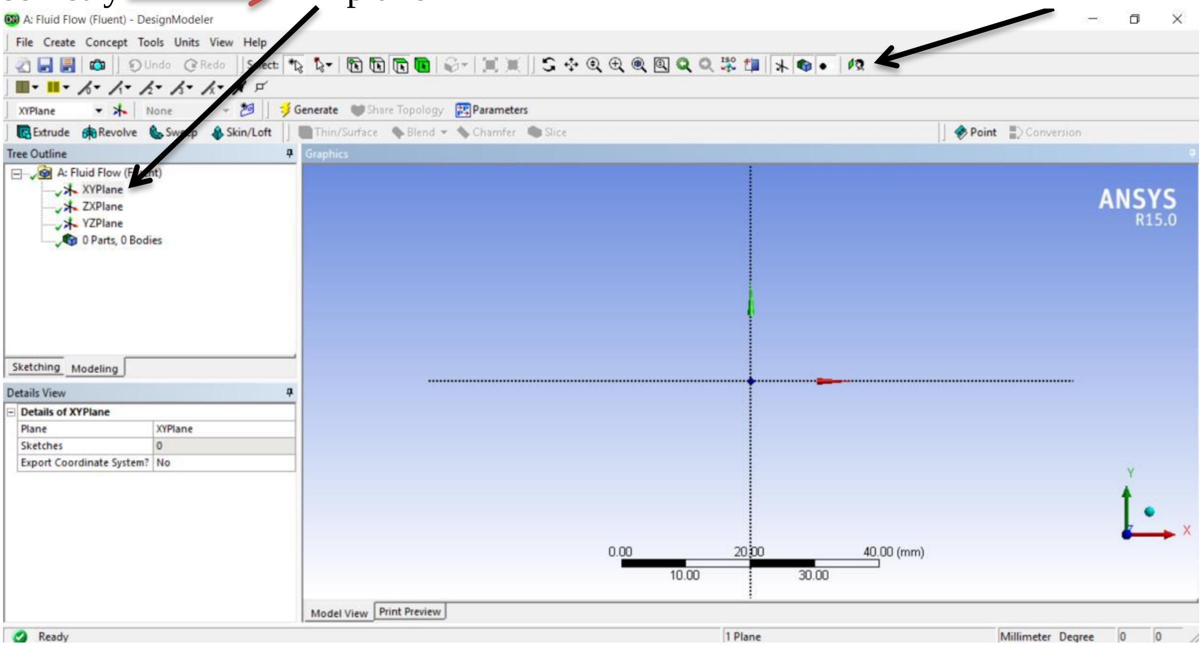
3- Geometry → unites → millimeters

هذه الخطوة مهمه

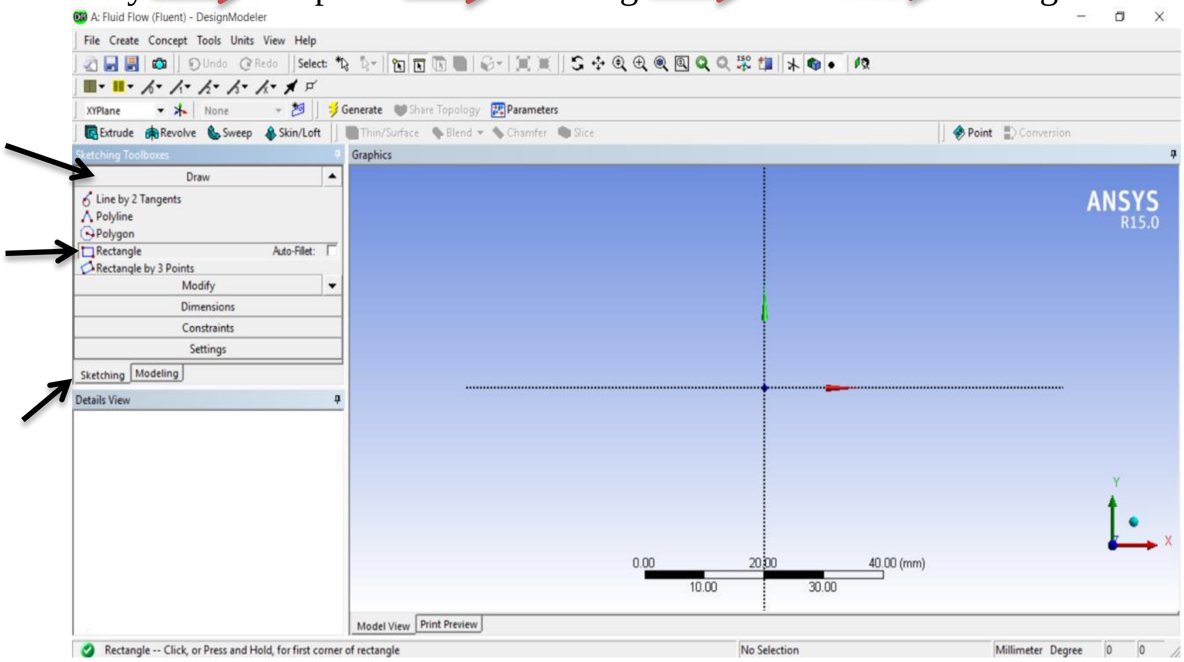


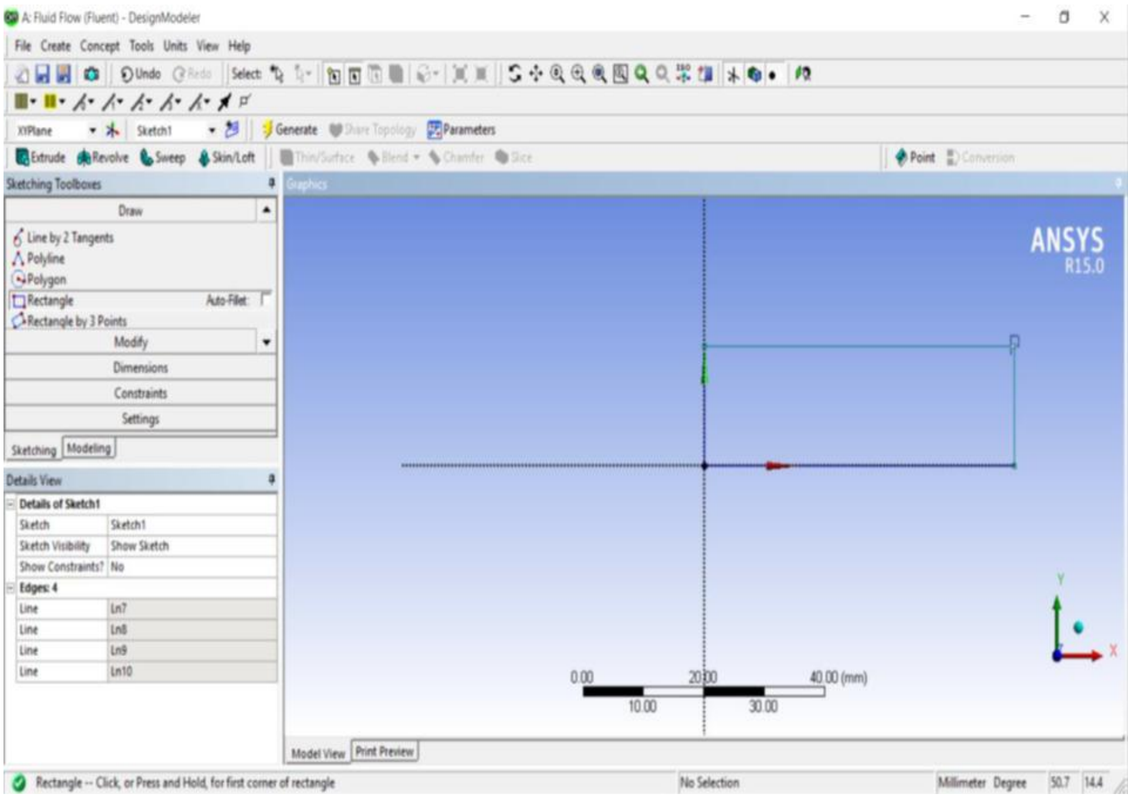
4- Geometry → XY-plane

نحول الاحداثيات الى احداثي ثنائي

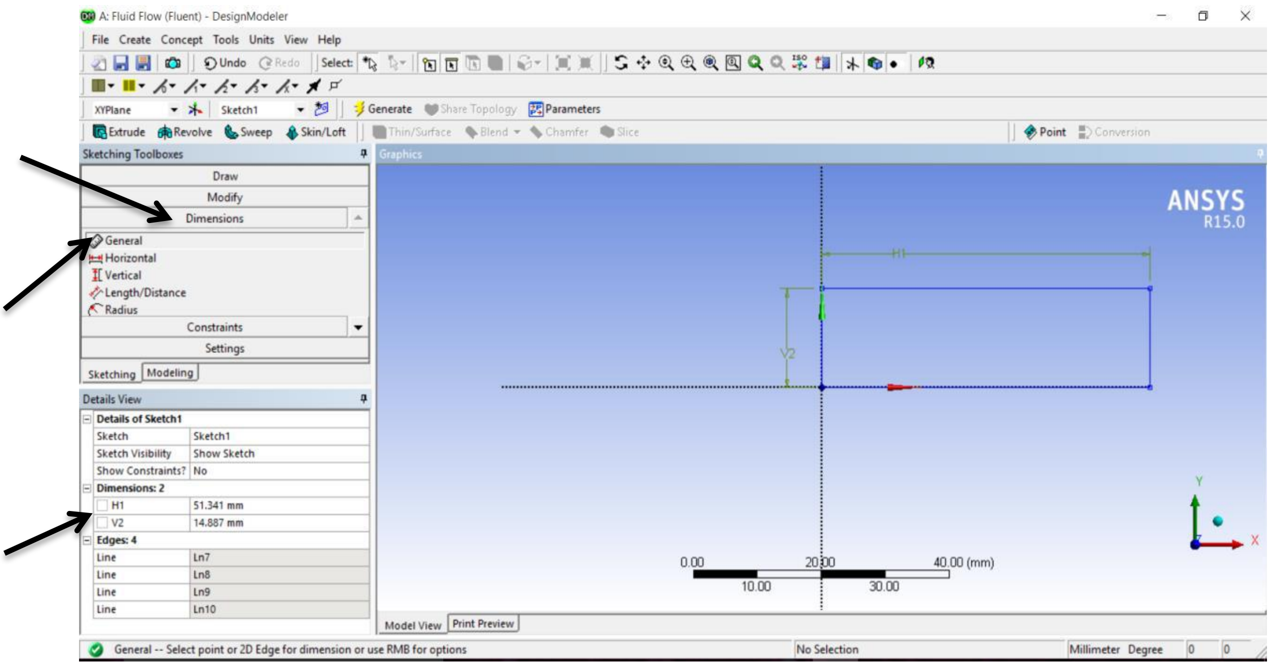


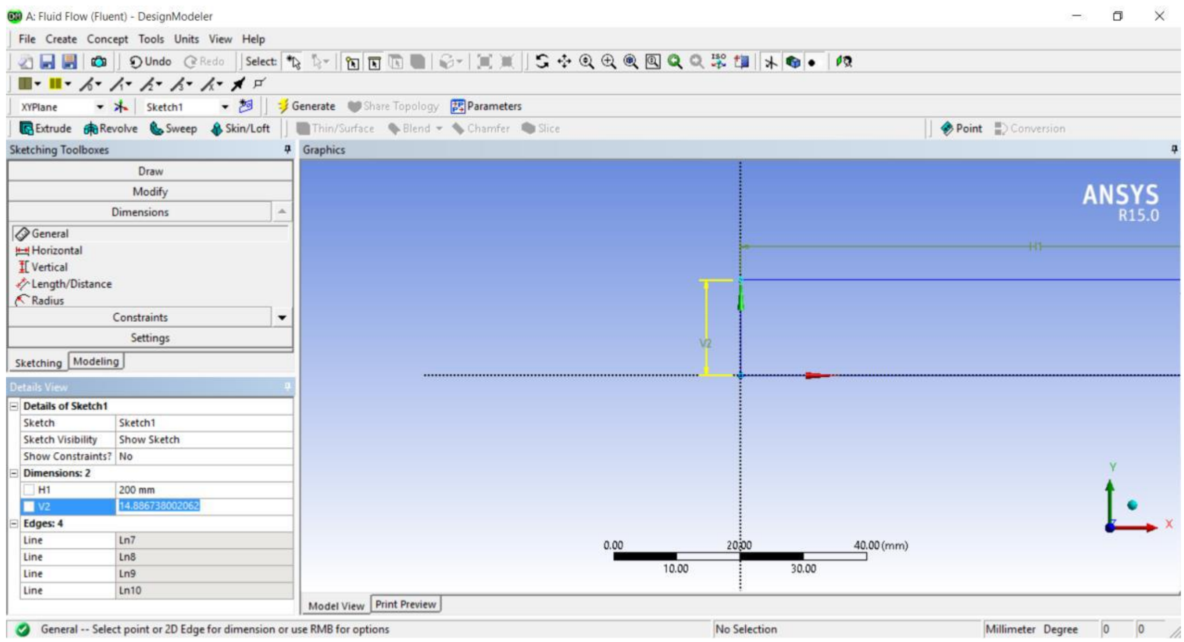
5- Geometry → XY-plane → Sketching → Draw → Rectangular





6- Geometry → XY-plane → Sketching → Dimensions → General





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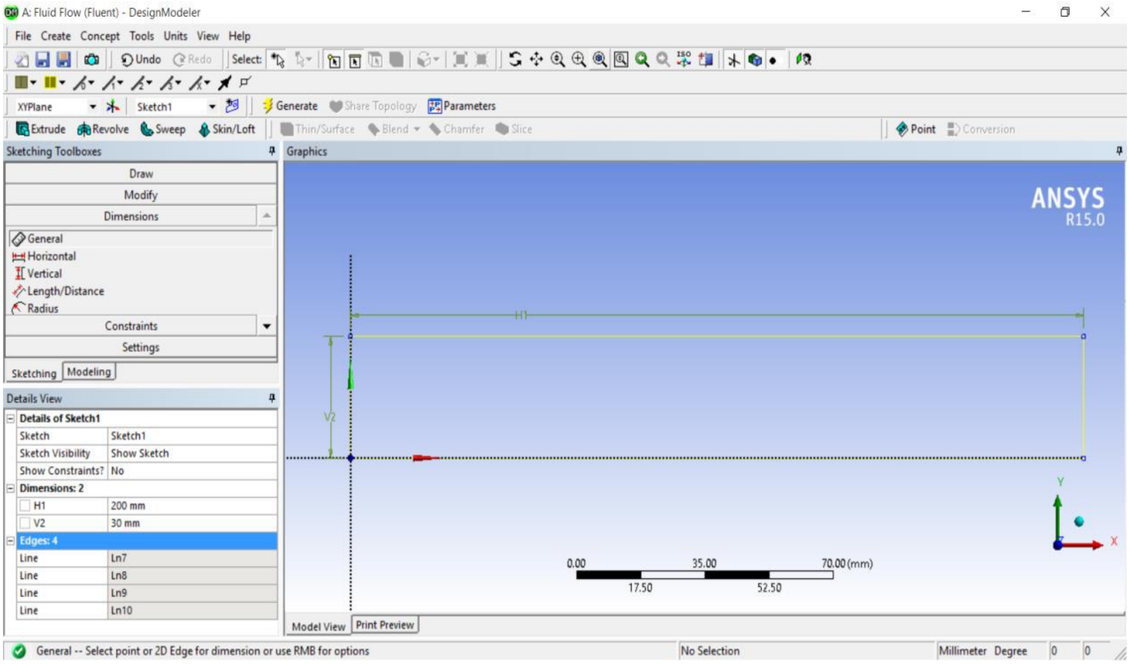
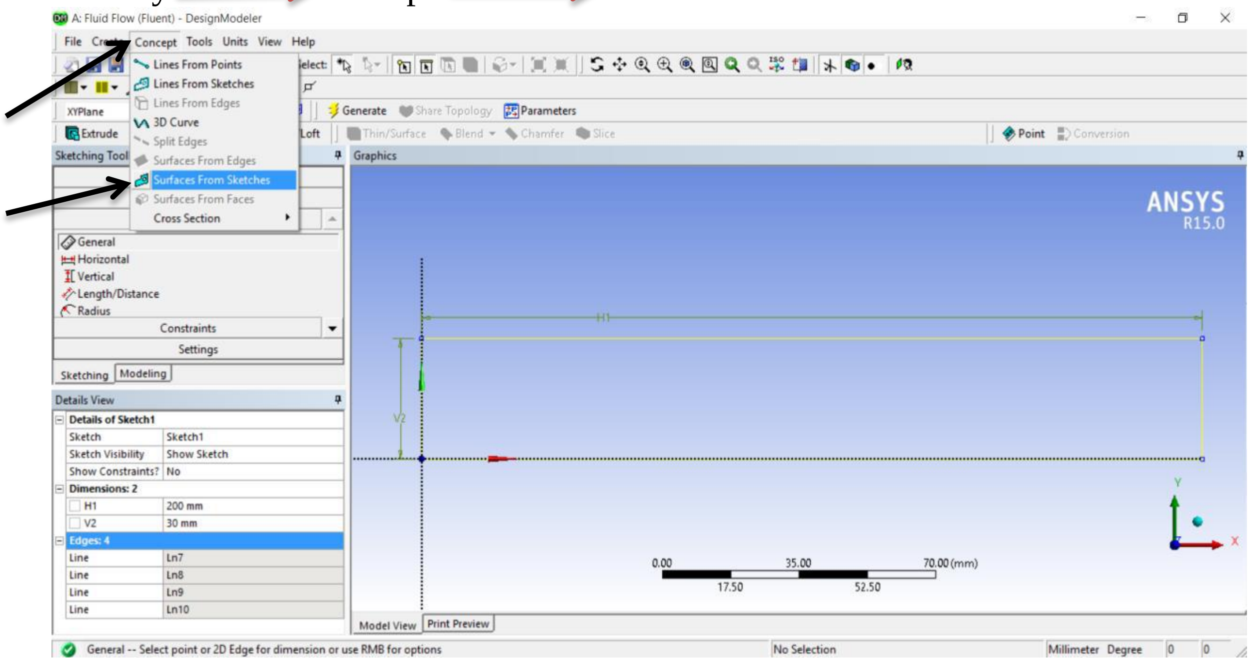
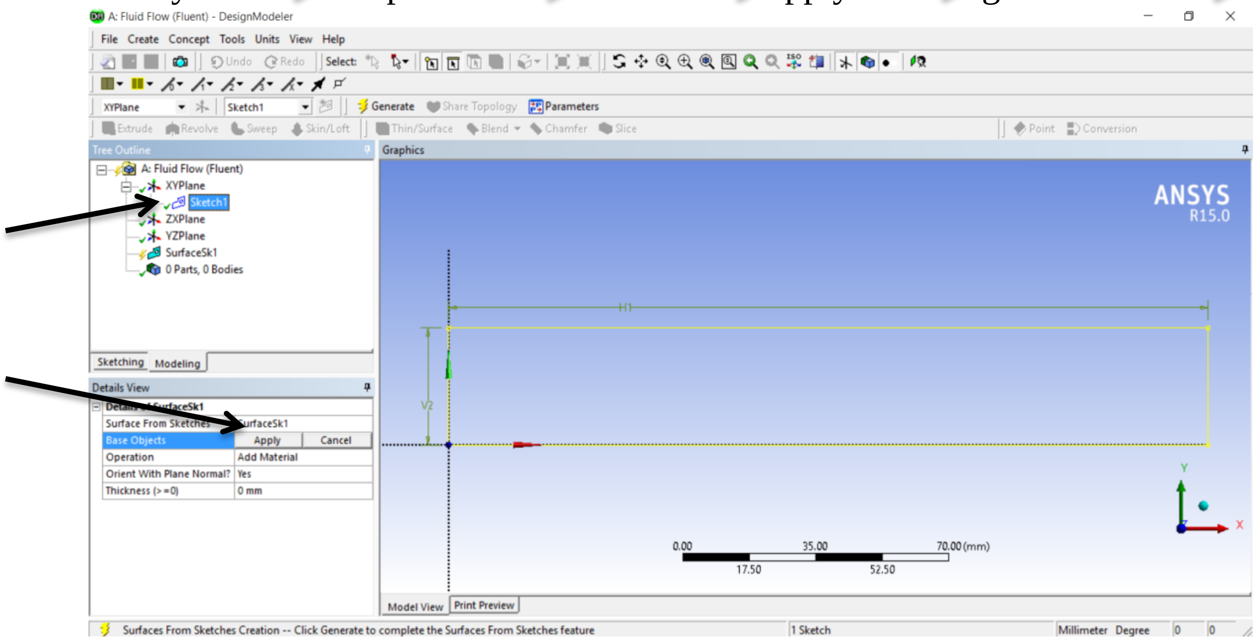
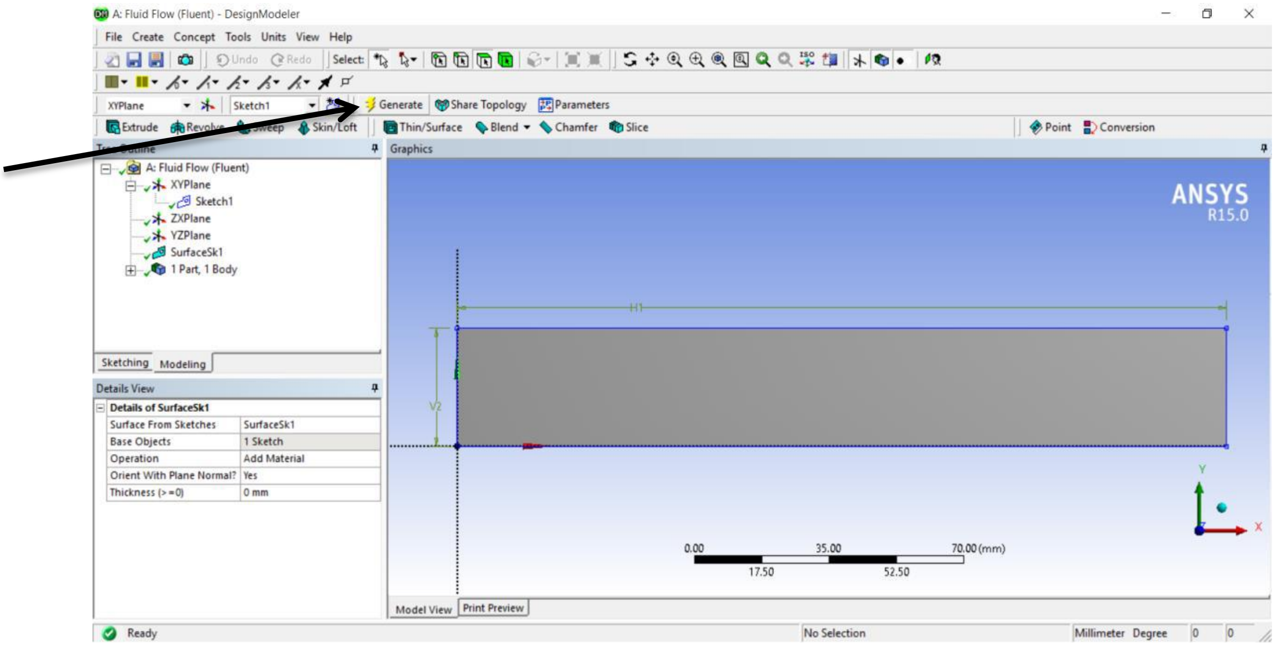


7- Geometry → concept → surface from sketches

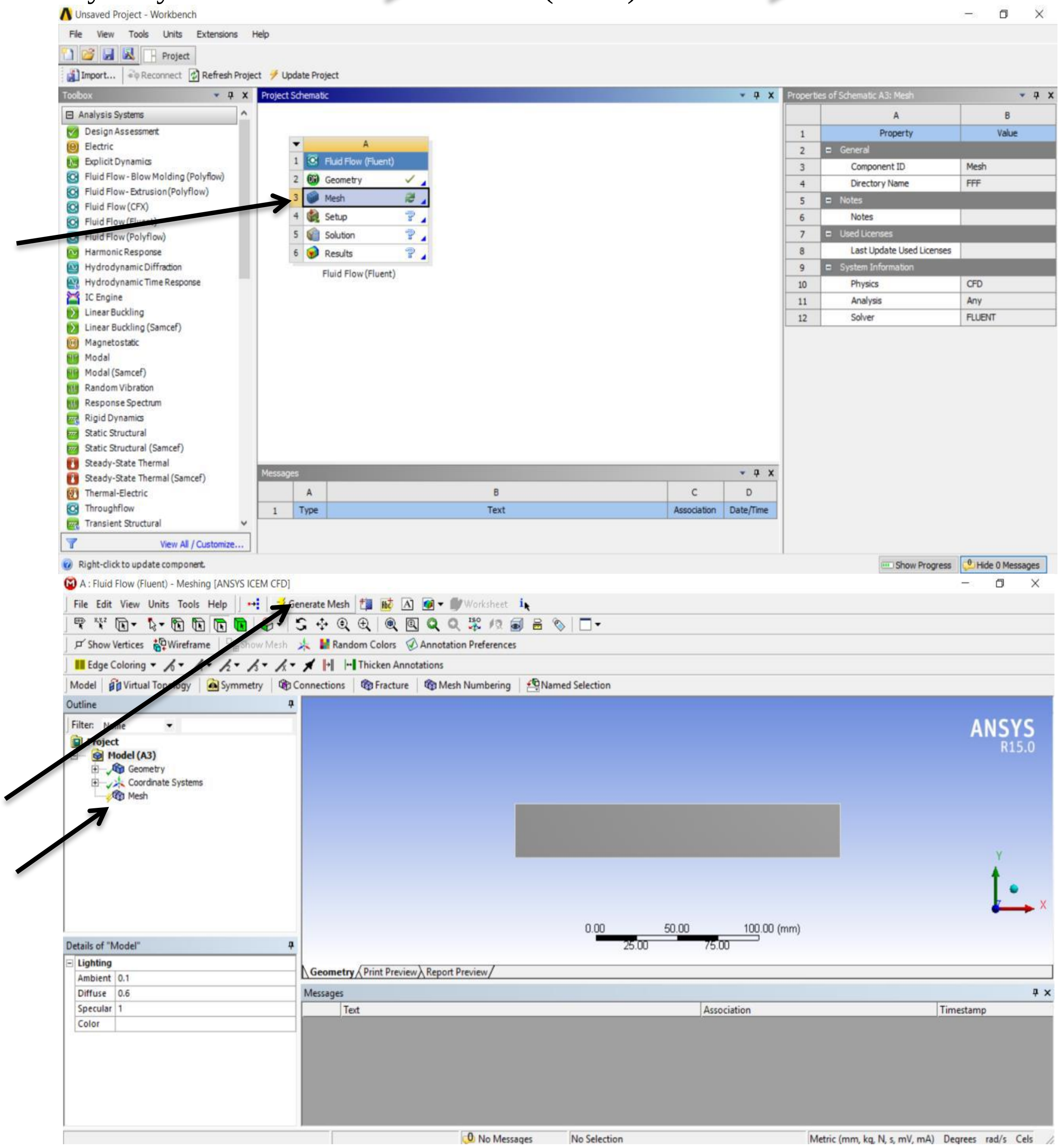


8- Geometry → XY-plane → sketch1 → apply → generate → close





9- Analysis systems → fluid flow (fluent) → Mesh



10- Mesh → generation mesh → Mesh