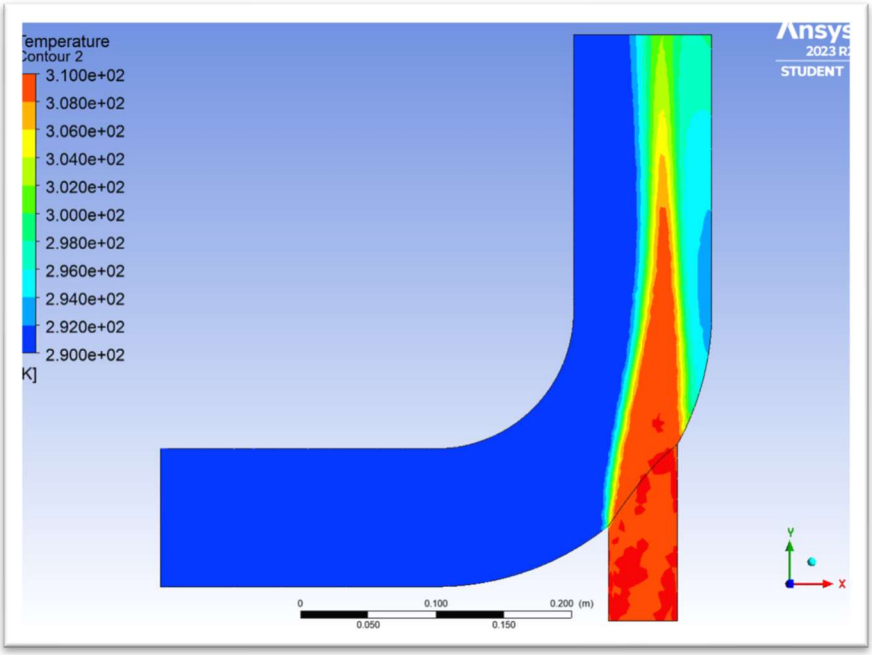
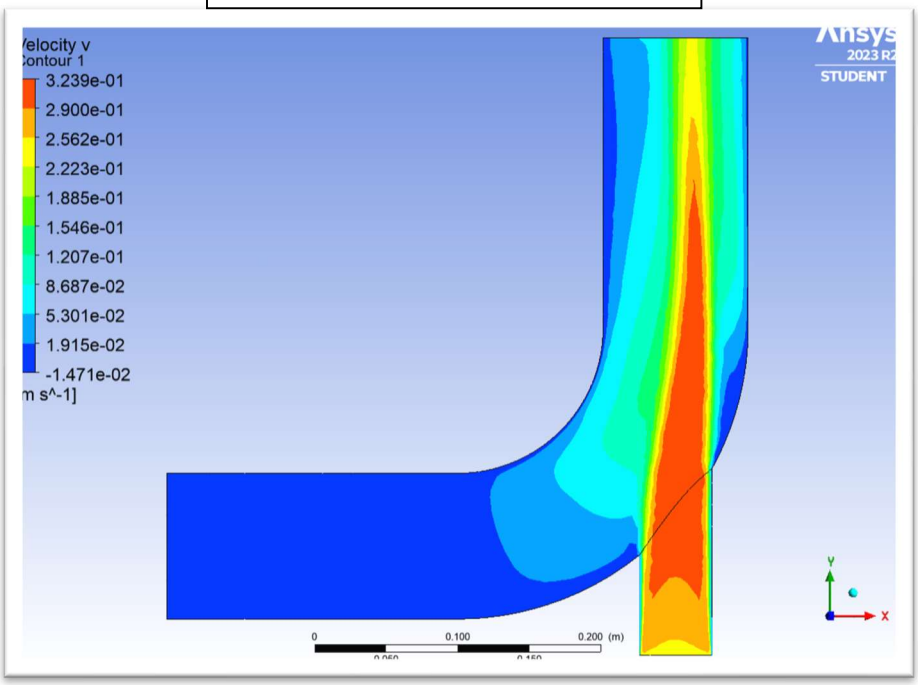
Varad Lad (ASU ID: 1226212769), ACFD Homework 1 using half pipe geometry. Collaboration with Shubham Jadhav (Task 1), Shyam Prasad Yedla (Task 3)

Task 1:

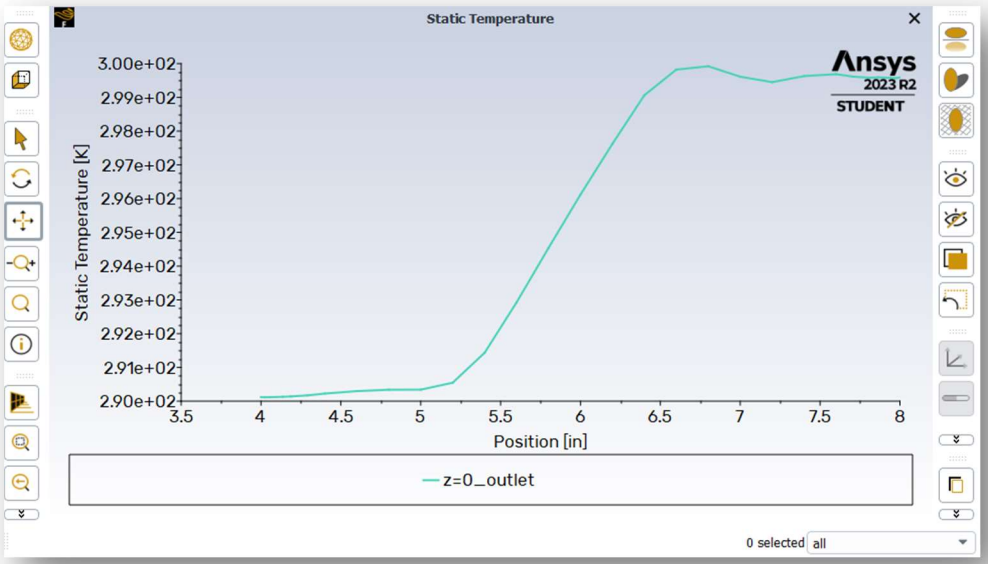


Contour plot of Temperature

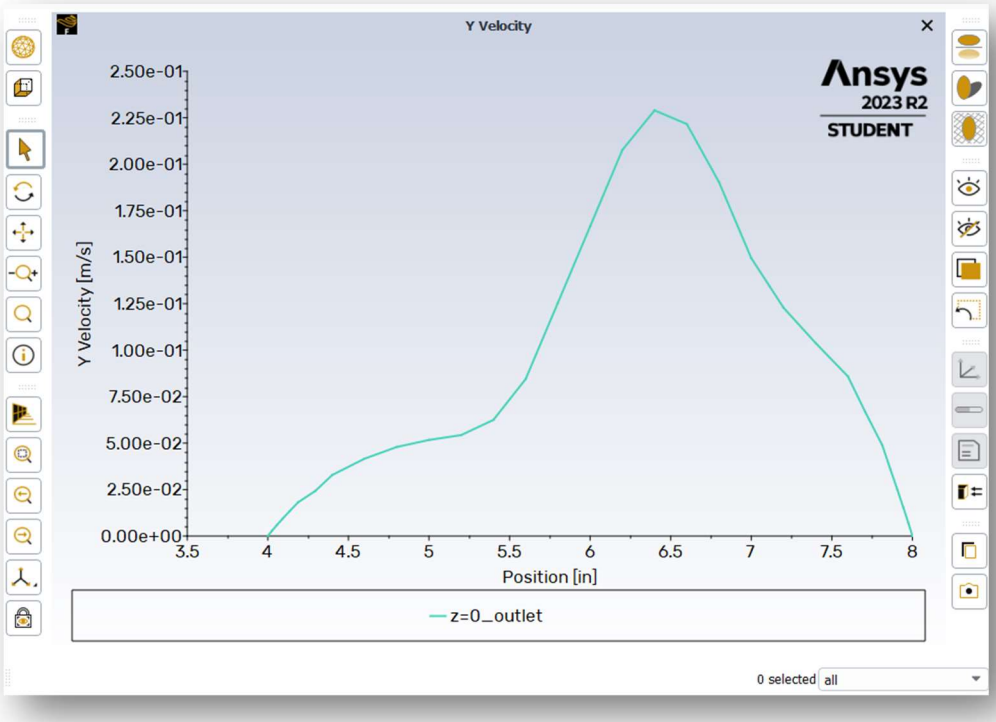


Contour plot of Velocity

Task 2:



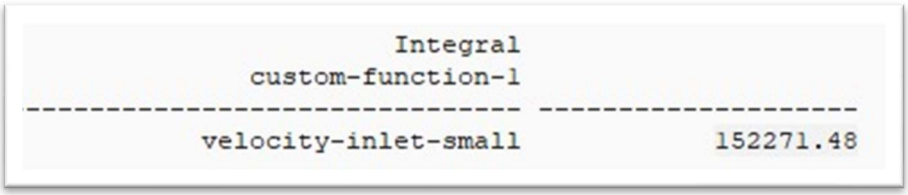
Plot of Static Temperature



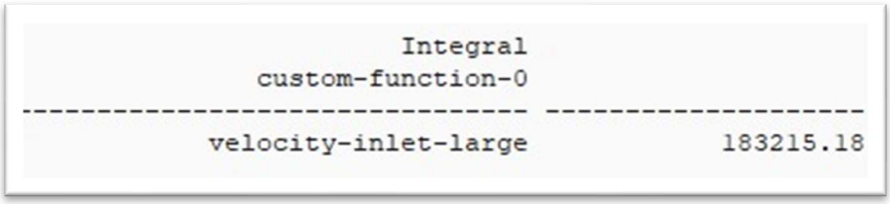
Plot of Y Velocity

Task 3:

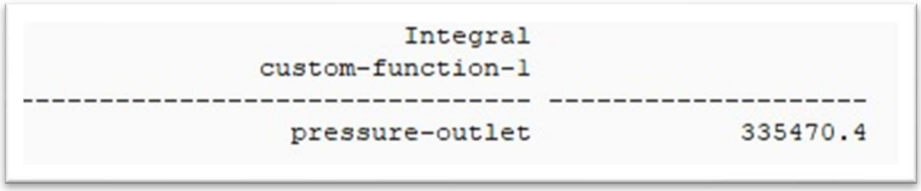
Firstly, I navigated to the custom field function section and created a new custom field function calculator. Within this calculator, I selected the relevant operand field functions required for the problem statement, specifically for calculating the rate of heat transfer. I then defined the necessary formula and ensured it was correctly inputted before saving the custom field function calculator. Moving on to the report section, I accessed the surface integrals feature to perform the required integration. In the report, I selected the integral option and further specified the custom field functions as the field variables. To obtain distinct values of H (heat transfer rate) for different scenarios, I carefully selected the two inlet and one outlet surfaces. This meticulous process allowed me to analyze and compare the rate of heat transfer for both large and small inlet conditions as well as the pressure outlet, providing valuable insights for my assignment.



	Integral custom-function-1
velocity-inlet-small	152271.48



	Integral custom-function-0
velocity-inlet-large	183215.18



	Integral custom-function-1
pressure-outlet	335470.4

H1 (Large inlet): **183215.18**

H2 (Small inlet): **152271.48**

H3 (Pressure Outlet): **335470.4** … (Total of H1 and H2 is **335486.66)**