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Matr.Numr 374762

Numerical Methods for PDE

Assignment -6

Problem statement

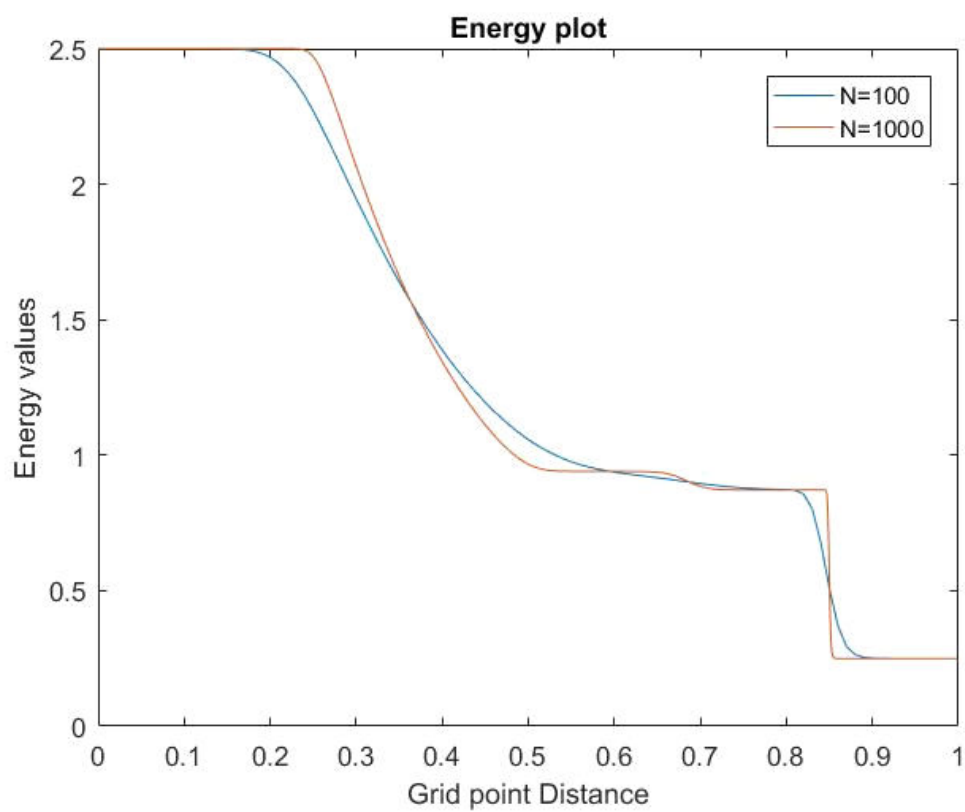
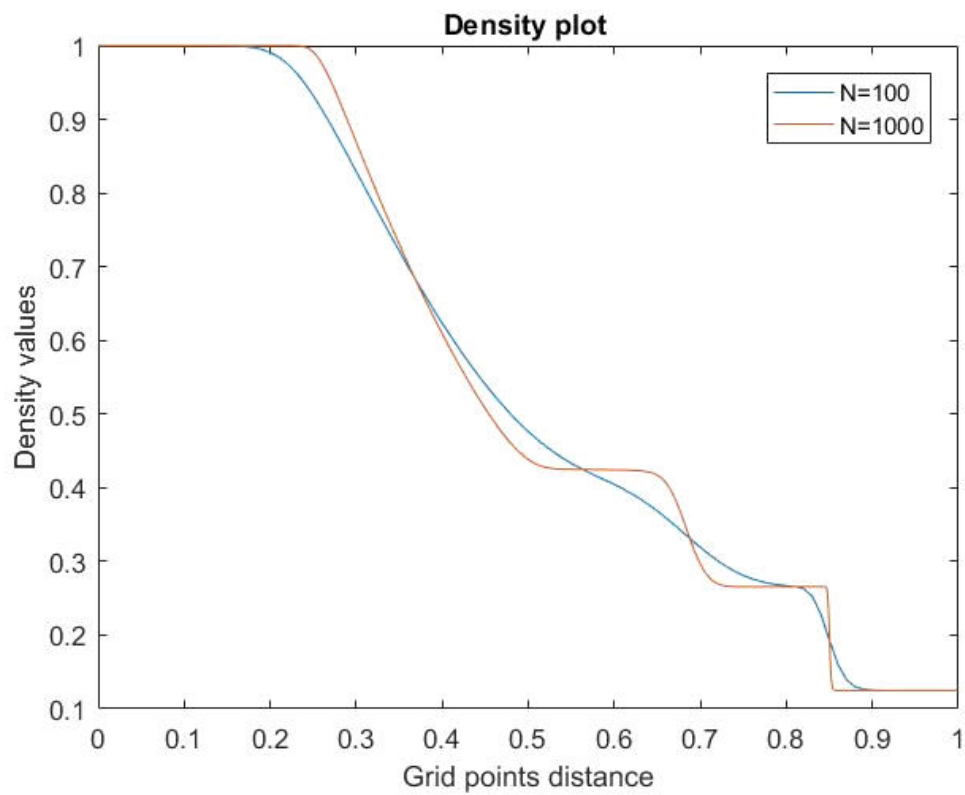
For the Given problem i have to create a program that tests the conditions for both flux types(Using Alpha and Using A_roe calculation) and for both mesh points (N=100 and 1000).

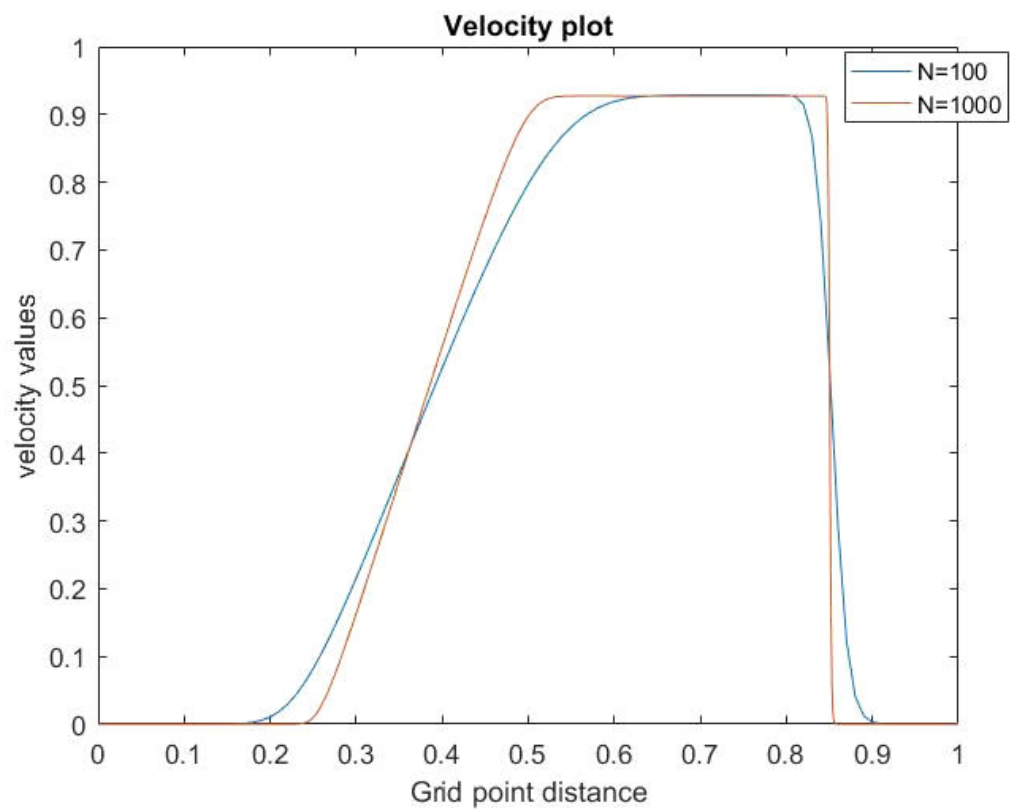
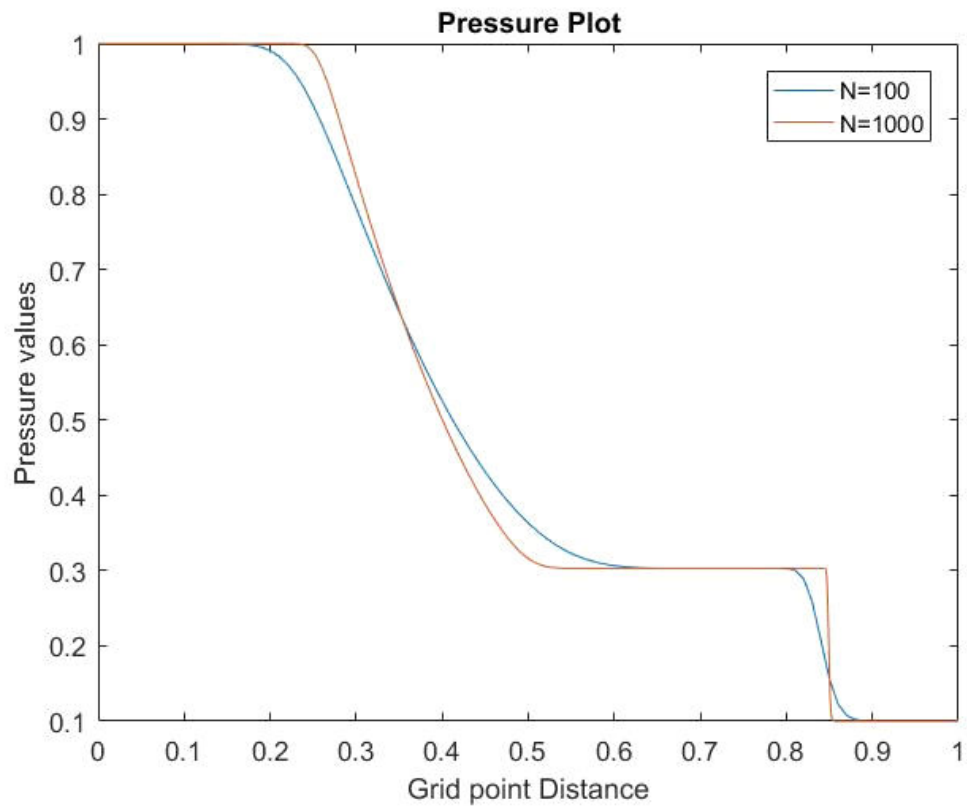
Solution :

i have a created two source codes(c files) namely Part1.c (Using alpha method to calculate the average fluxes) and Part2.c (Using A_Roe method to calculate the average fluxes).

" Part1.c " file

when the user runs the program, it asks the user to enter the number of grid point in the mesh. After entering the values 100 and 1000 (one at a time), the program will print the values for Pressure, density, energy, velocity values at final time T and at the same time it also produces four .csv files which i imported in matlab and plotted the following graphs.





" Part2.C " file

i want to bring this to your attention that my second c code "Part2.c" is not working properly, which means i was not able to program it completely. Although this doesn't not produce any final answer but i tried to attempt, to solve the question at my best. so i have uploaded whatever i have done so far.