README

Reference papers:

1) "A Python way to an undergraduate CFD course"
2) "Performance of simple spatial-discretization methods in two dimensions"
3) "Teaching CFD with Python"

The code to run all the examples in the papers is sent in different zipped files that should be placed in separated folders. These folders are:

a) Paper1
b) Paper2_LISKA_WENDROFF_cases_HLLC_ENO
c) Paper2_LISKA_WENDROFF_cases_HLLC
d) Paper3_DISTMESH
e) Paper3_body_fitted_meshes
f) Paper3_applications

In every folder you will find a text file named AA_README with a description of what the files in that folder do and how to run them.

For first-time users I recommend the following sequence, based on the criterion that is best to begin with short simulations (to understand the mechanics) and end with long simulations:

1) Begin with the one-dimensional simulations in folder Paper1 (Toro's 5 classical tests). These simulations run very fast, usually less than 1 minute each
2) Then go to the folder Paper3_DISTMESH and run the simulations to obtain the meshes of simple domains (1-2 minutes each). This will let you become familiar with Persson's DISTMESH mesh generator.
3) Then go to any of the two folders that run the simulations of Liska-Wendroff's six 2D cases. Although these simulations might last up to 30 minutes (when run with a very fine mesh), they are simple since the mesh is simple and you can run them first in a few minutes by using a coarse mesh first. These simulations introduce you to the world of 2D simulations so you can begin getting familiar with the graphical displays used for 2D.
4) Finally, you can go to the folder Paper3_applications to run the more complex files dealing with Toro's explosion and wedge tests, the blunt-nosed cylinder and the NACA0012 airfoil.

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