TERM PROJECT – GAS DYNAMICS

1) Design a convergent-divergent nozzle in which the Mach number (Ma) varies linearly with the axis along the main flow direction (x), that is @ x = 0.1 m Ma= 0.1 and @ x = 0.2 m Ma= 0.2 and so on. The throat area is 0.05 m. The nozzle design Ma should be 2 and must deliver the flow to a reservoir at a pressure of 0.1 bar.

2) Make a steady CFD analysis of the (compressible) nozzle flow with the open source code, **openFoam** and use open source code, **snappyHexMesh** for meshing.

3) Submit a complete report including the following sections: Abstract / Introduction and Literature Survey / Governing Equations / Numerical Methods and Mesh Details / Results and Discussions / Conclusions. Reports should be written in **LaTex**.