So far, the first project has been solved using stream function-vorticity formulation with finite difference method.

To verify the numerical results, also solve the fluid flow in geometries of project one using SIMPLE method.

Your report should includes:

- 1. The method of discretization and discretized equation.
- 2. Boundary treatments (describing the method of applying boundary conditions).
- 3. Algorithm or flowchart of program.
- 4. Source of the code.
- 5. Contours of u, v, p and stream function.
- 6. Profile of u, v and p on two lines i.e. x = 0.5 and y = 0.5 (for Lid Driven Cavity) and the reattachment length, x_r , for Backward Step.
- 7. Validate your data and compare them with achieved results of stream functionvorticity method too.
- 8. Interpret the achieved physical results.

You can solve only one of those geometries but who solve the both have 0.5 scores greater than others.

Hint: All details of the geometry is as previous.

Important: All plots must be drawn by Tecplot.