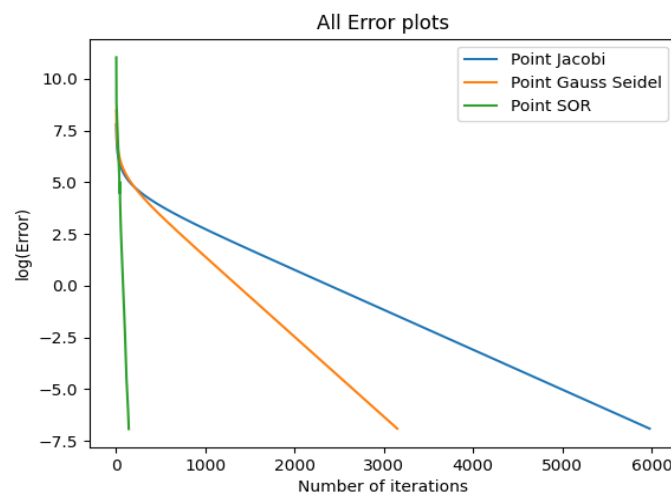# Assignment 2 Report

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12th March 2021
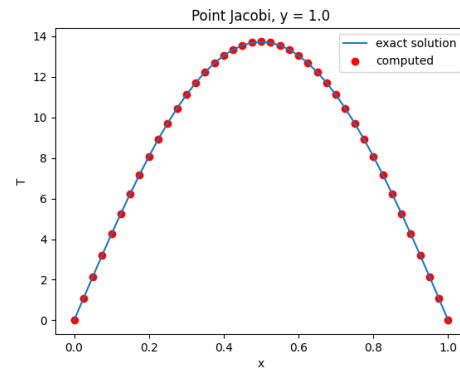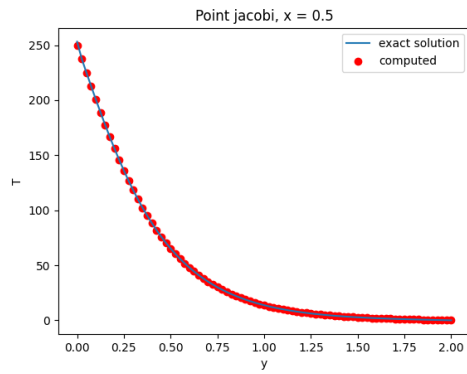
Error plots of all three schemes

From the error plots we can clearly see that the Successive over relaxation scheme is far superior compared to the Point Jacobi and Point Gauss Seidel schemes as it converges very very quickly. We even notice that the Point Gauss Seidel scheme converges almost twice faster than the Point Jacobi Scheme.

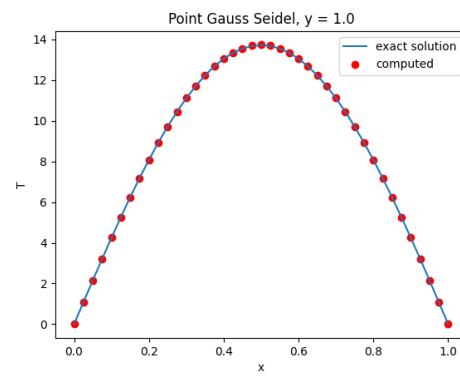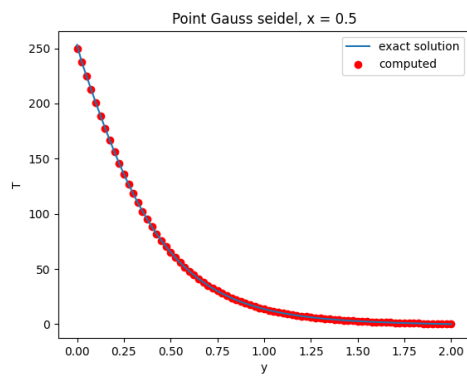Number of iterations required to converge:

- Point SOR : 141

- Point Gauss Seidel: 3150

- Point Jacobi : 5977
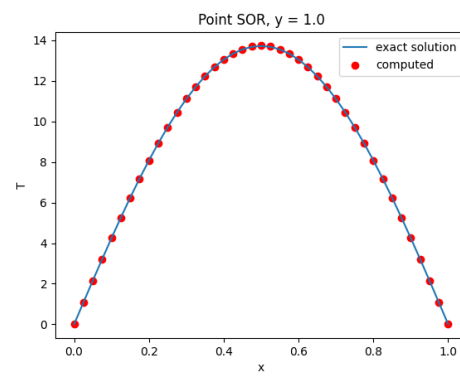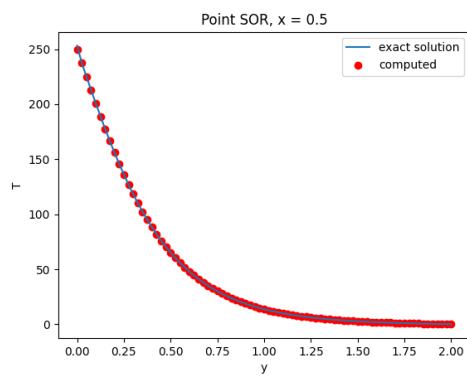
Comparison to exact solution

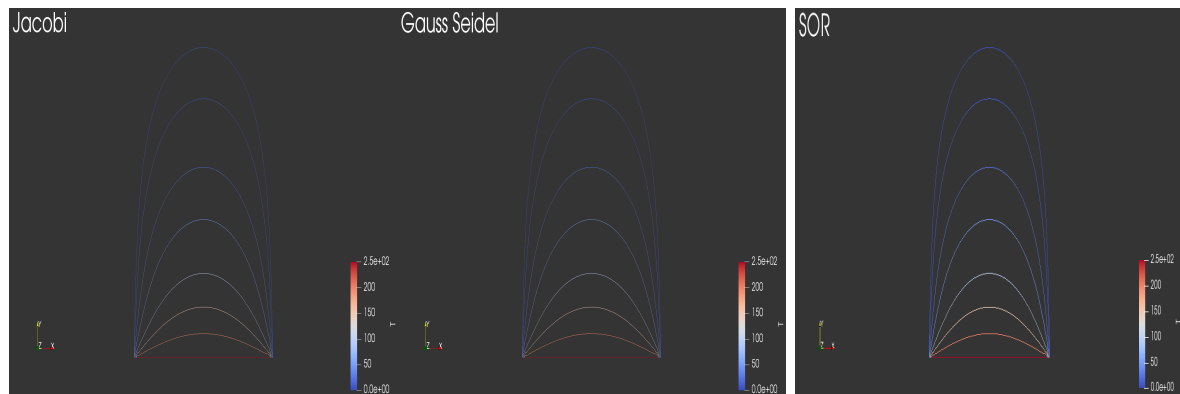## Point Jacobi scheme

Point Gauss Seidel scheme

Point SOR scheme

From the plots we can clearly see that the computed solutions using all three schemes is in very good agreement with the exact solution.

Contour plots

We see that very similar contour plots are generated using all three schemes as expected. The contour plots are generated for T = 5, 10, 25, 50, 100, 150, 200, 250.