

**BONUS EXERCISE PART 1:
PRACTICAL COURSE
MODELING, SIMULATION, OPTIMIZATION**

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Reproduce the matlab logo by making a finite difference discretization of the Laplacian on the L-shaped in the figure on the left with zero Dirichlet boundary conditions and computing its first eigenfunction.

Hint: Should you use the implicit or the explicit formulation for the boundary conditions?

Hint: To obtain a figure similar to the Matlab logo, you only display a part of the domain, e.g. $[0.2L, 1.8L] \times [0.2L, 1.8L]$.

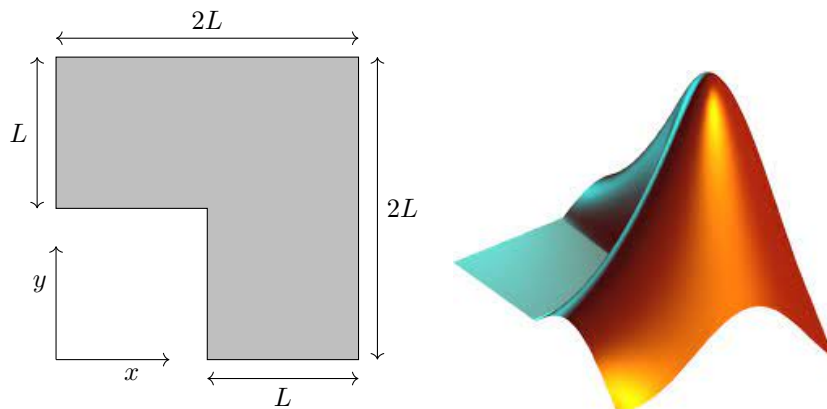


FIGURE 1. The considered L-shaped domain and the Matlab logo