

Data Input

·data_pts.mat
·data_elt.mat
·
·data_bdyN.mat
·data_bdyD.mat
·data_intNd.mat
·data_bdyDP.mat
·data_condc.mat

App_data_proc.m

· Ndm(Nnd): Node Coordinates
· Elm(Nelt): Elements
· ElconEl: Element Connectivity
· BdyN: Indices of Neumann Bdy's
· BdyD: Indices of Dirichlet Bd's
· IntNd: Indices of interior nodes
· BdyDP: Potential on BdyD
· Ndcond: Conductivity on each node

App_data_gen.m

feSetConnectivity.m

FEM

feLocalBasis.m

Local Basis Coefficients

Linear/Quadratic/Cubic

FeLaplace2D.m

FeLocalElements.m

· Local Stiffness Matrices

feGlobalAssembly.m

· global Stiffness Matrix

feDboundary.m

· $x = \text{inv}(X) * b$

Numerical Solution

feExactSolution.m

· Error to exact solution

