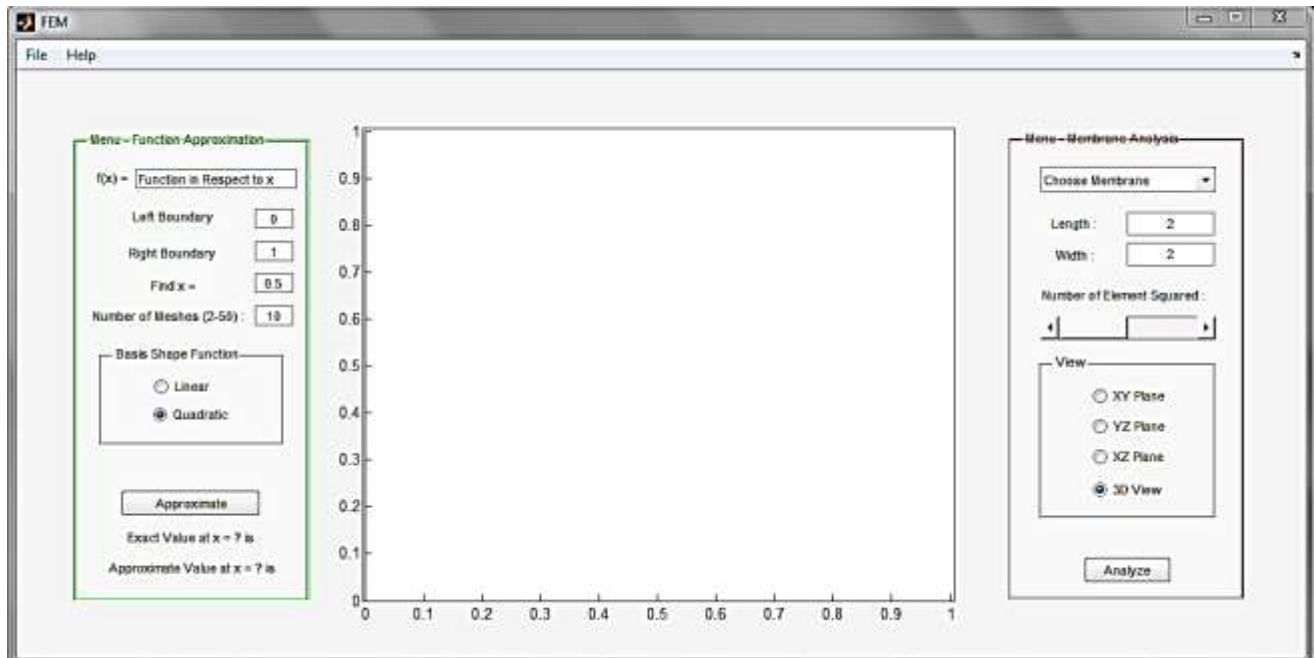


FEM Graphical User Interface Tutorial

This document is designed to work with the video tutorials to understand how to use the GUI and be accessed through Help->Tutorial from the GUI.

For any question or concern regarding future release, please contact
Ethan Thomas Uong at (626) 466 – 5656, or etuong@gmail.com



The blue box is where the plots will go, this tutorial will focus only on the green and red boxes. The green box is a study of approximation given a function based on the concept of finite element. The red box on the right is a study of analysis on common membrane over a distribution of interested

Green Box:

1. Start out by typing in a function (in Matlab vectorized syntax, i.e $x.^2$ for parabola and not just x^2). The program will deny any variable other than x .
2. Initialize boundary intervals using the left and right textbox, note that right boundary must be greater than left boundary otherwise Approximate button will be disabled.
3. Manually input the x value that you are interested in approximating.
4. Declare the number of meshes to discretize.
5. Choose the type of basis shape function, note (and try) that quadratic function will yield better or closer results than linear due to higher precision of discretization.
6. The approximate button will only be enabled if the setup is bug-free, meaning textboxes are double type (no char or strings), inputs are within range, etc.
7. The program will output the exact and approximated value of the function at x .

Red Box:

1. Choose which membrane to study (Triangular, Rectangular, or Elliptical)
2. If Triangular, specify the width and height and choose one of three types of default meshes.
3. If Rectangular, specify the length and width and choose the number of elements to mesh.
4. If Elliptical only specify the minor and major axis.
5. Choose a starting view plane from the radio panel.
6. If dimension textboxes are positive integers, the Analyze button will be enabled to run the analysis.