Finite Element Methods in Linear Structural Mechanics
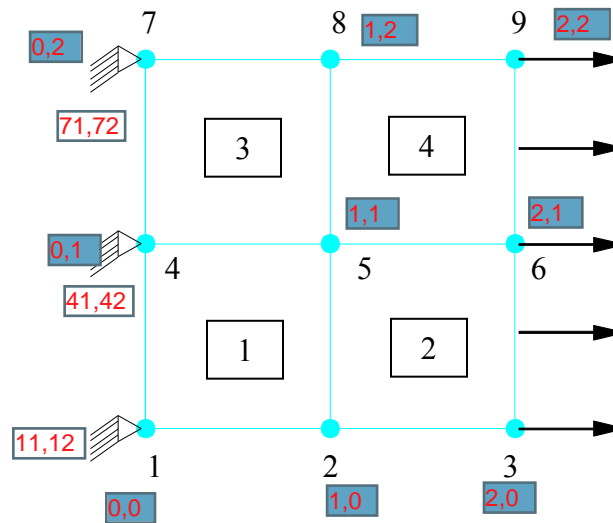CompEng VGU, Winter 2016-2017

Assignment: Develop FEM Code for Plane Stress Problems

Develop a Matlab code for analysis of plane stress problems.
You are provided:
- The initial part of the code, **initial.m**, that helps you to read the input data.
- The function, **Gauss.m**, to generate Gauss points and weights.
- The sample of input file (**input.txt**) for the mesh shown below.

You are required to: Continue to write your code (from the provided initial part) that is able to solve a general plane stress problem using 4-node quadrilateral elements.
1. Use the method of matrix partition to solve for free (unconstrained) displacements.
2. Calculate strain and stress at Gauss points of elements
To verify your code, you are asked to solve the problem 9.11 (page 244) of the book A First Course in Finite Elements, J. Fish & T. Belytschko.