Lab Assignment 1-2

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1. Make a program to find the number of spanning trees in an undirected graph in a polynomial time. (You may use any programming language.)
2. During viva you have to run the code for graph in Figure 1.
3. To calculate the determinant you may use the recursive algorithm for LU decomposition.
4. In a single file you need to submit
   (a) pseudocode (for any graph), its functioning and complexity analysis.
   (b) Laplacian matrix L (for graph in Figure 1)
   (c) LU decomposition of the submatrix of L to find its cofactor
   (d) the number of the spanning trees. Please note that you have to give the arbitary labelling to the vertices. The Laplacian matrix will change depending on the labelling. Also, LU decomposition will also be different depending on which cofactor one choose to calculate. I hope everyone of us come up with different Laplacian and LU decomposed matrices. Yet the number of the spanning trees will be the same.

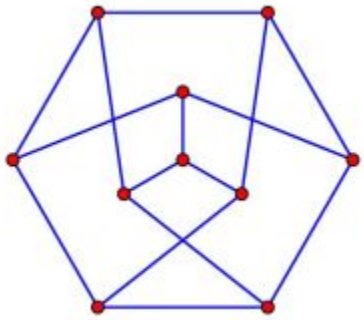

Figure 1