CS 403 Algorithm Design & Analysis Lab
Assignment 4

- Submit a report (with full explanation of your algorithm's running time and complexity) along with the codes and read me file in a zipped folder. The report should be in PDF format as a single document. If you want to assume something during coding, then mention in your report.
- The deadline of the submission is 11:49 am 11 April 2018 . Late submissions will have penalty of 15% per day (that is 15% per day will be reduced on the score you achieve as the late submission penalty).
- You have to do code for all questions and give a good explanation in your report. Your reports would be evaluated thoroughly. Please provide pseudo codes in report.
- We will provide test data sets at the time of evaluation. In that case, your code should be well generalized. Analyze your codes with different test sets during implementations of algorithms.
- Submit your assignments only to coursetacs403@gmail.com

1) Implement argument (f, P) and Max-Flow (G, s, t) to obtain maximum flow assignment for G with source s and sink t.

Edges	Weights
$s \rightarrow u$	20
$s \rightarrow v$	10
$v \rightarrow t$	20
$u \rightarrow t$	10
$u \rightarrow v$	30

2) Implement $O(nW)$-time algorithm to solve $0/1$-knapsack problem.

3) Given two sequences, Implement Dynamic Programming algorithm to find any **one** longest common subsequence (LCS). A subsequence is a sequence that can be derived from another sequence by deleting some elements without changing the order of the remaining elements

4) Write pseudo code for an algorithm to compute all least squared errors in $O(n^2)$. Implement the algorithm (Refer section 6.3).

5) Implement Strassen's matrix multiplication algorithm and analyze its running time.