Design and Analysis of Algorithms
Term II 2018-19
Programming Assignment

This document contains details regarding guidelines and problems for programming assignment. You are expected to solve the problem and implement the corresponding algorithm(s) for the chosen problem. Your solution should be accompanied with a proof of correctness and test cases to test the algorithm.

Guidelines

- All submissions for this assignment should be original work. **Plagarism of any form shall not be tolerated and strict action will be taken against defaulters. In particular, no marks will be awarded for project work and no make-up work will be assigned.**

- You need to work as a team of two members with your classmates, one team of two students per problem. Please discuss amongst yourselves and finalize your team members and the problem you will be working on as a team.

- This assignment should be implemented in C, C++ or Python, on a Linux OS. Your code should be well documented and should be readable by others.

- Your submission should be sent to the instructors and the TAs via email. Email ids: `meenakshi@iiitb.ac.in`, `Pradeesha@iiitb.ac.in`, `abidha.vp@iiitb.org` and `keerthi.chandra@iiitb.org`. Please also upload the same file in LMS, a folder will be made available for the same.

- Submissions should be named in the format <roll-number-1-2>.tar.gz

- Deadline for submissions is Friday, 26th April 2019, 5 PM.

- The above tarred-gzipped folder should include all source files, header files, makefile, README and a sub-folder containing your test cases. The README file should contain information on sources referred to for help on the assignment, data structures that you have used, a pseudo code of your algorithm for the problem, a proof of correctness, instructions on how to compile and run your code, any notable defects/side-effects while running the code/solving the problem and details on individual contributions made by each team member in the project. Each of these should be detailed out in a separate section in the README file. The sub-folder containing test cases should contain a document detailing the format of test cases format, input and expected output. You should have tested your code on a set of test cases that are positive (on which the algorithm runs and outputs the expected result) as well as on a set of test cases that are negative (on which the algorithm runs and fails/does not execute). If you had to write a script to generate large test cases, please include the code for the script too in this file. On problems that have a limit on test cases, please do generate such test cases and illustrate the working of your algorithm on the test cases for maximum/minimum limit.

- Evaluation will be done based on a code review which includes execution of the submitted code, static inspection of solution strategy and proof, and the online evaluation results, whenever applicable. We will also check for plagarism using several online resources.
- Half the score for each student will be based on the success of team effort and half for each student's individual contribution. Please clearly document each team member's contribution in the README file.

Problems

All the problems mentioned in the accompanying file are taken from the website `https://algomusedev.appspot.com/`. Solution ideas to all the problems are available in their website. However, students need to come up with their own solution to each problem and meet all the expectations as stated in the problem.

No marks will be awarded for solutions or ideas copied from the site or internet.