CS-205, Assignment –VIII

Assignment Date: 09/10/2017 **Submission Deadline: 15/10/2017**

A. There is total N number of players. There might be rivalry between any two players. Let's say there is rivalry between R pairs of players. Write a program to distribute these players into two teams (might not be of equal size) such that there is no rivalry between any two players of a team.

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B. In this problem you need to construct graph G=(V,E) using a set of English words each having 5 characters. The nodes of the graph will be represented by these words. There will be an edge between two words say X and Y if we can reach from X to Y by the following series of operations i)remove the first character ii) add any character iii) rearrange characters. For example there will be an edge between: words — dross — soars — orcas — crash — sharp — graph. You may use adjacency list or adjacency matrix to store this graph.
   a. Find out whether a graph, created from given set of words, contains any cycle or not. If it contains any cycle then print "GRAPH IS CYCLIC" otherwise print "GRAPH IS ACYCLIC".
   b. `For every pair of nodes (i,j) determine if there is a path from i to j or not. Print the result in matrix form.

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C. Given an undirected graph with N vertices and M edges what is the maximum number of edges in any connected component of the graph. In other words, if given graph has k connected components, and E1,E2,....Ek be the number of edges in the respective connected component, then find max(E1,E2,....,Ek).

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