CS-205, Assignment –X

Assignment Date: 23/10/2017 **Submission Deadline: 01/11/2017**

A. In an institute, students have accounts in a server for executing their programs. A student can allow other student to access his/her account on behalf of him/her. If a student say X allows student Y for access his account and Y allows Z to access his account then Z can access Y's account as well as X's account. X allows Y to access his/her account only if distance between Y and X is less than a predefined threshold distance say ***d*** (will be taken as user input) and |Y| > |X| while |X|=∑ascii(xi) (for example if X="SOUMI" |X|=ascii('S')+ascii('O')+ascii('U')+ascii('M')+ascii('I')). Distance of X and Y d_{xy} is the shortest path distance between node X and Y in the graph formed in following way. Every name is having exactly 5 characters and they represent a node in the graph. There will be an edge between two names (words) when 4 position matches out of 5. For example there will be an edge between following pair of words.

```
graph grape

grape grace

grace brace

brace brane

brane brand
```

Weight of an edge between two words (say A={a1,a2,a3,a4,a5} and B={b1,b2,b3,b4,b5}) is defined as $d_{AB}=\sum|a_i—b_i|$ for i=1,2,3,4,5. Cost between two words is defined as the cost of shortest path between two words. For a given set of names find out who would be able to access whose account. A sample input set is available here.

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B. Australia Cricket team is on a tour of India for 8 matches. Initially the matches were planned to be held at following cricket stadium in following order by BCCI.(First match at chennai, second match at kolkata and so on.)

Match	Stadium
1	MA Chidambaram Stadium, **Chennai**
2	Eden Gardens, **Kolkata**

3	Holkar Cricket Stadium, **Indore**
4	M.Chinnaswamy Stadium, **Bengaluru**
5	Vidarbha Cricket Association Ground, **Nagpur**
6	JSCA International Stadium Complex, **Ranchi**
7	Barsapara Cricket Stadium, **Guwahati**
8	Rajiv Gandhi International Stadium, **Hyderabad**

However, later they changed their plan to make the schedule in most economical way. A way will be called most economical if it requires least travel. Write an efficient C program to help BCCI to make the schedule for 8 matches. Take distance between any two cities from Google map (air distance round off by 100 km).

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