A. There are few job opportunities from a set of companies like Microsoft, Google, Adobe, Mentor Graphics, Synopsis, IBM, Wipro, TCS, CTS, Goldman, Infosys, Cadence, Texas Instrument, DRDO, HAL, ISRO, Capgemini, Ushacomm, Ericson. A company may offer job opportunity to a candidate who is having at least two characters in common in his/her name with company name. For example IBM may offer job opportunity to Iman, Imran, Bimal, Mainak etc. However, each company is having exactly one opening. Placement cell is given the responsibility to choose appropriate candidate in behalf of a company where the above mentioned criteria is fulfilled. Placement cell also want to maximize the placement. Write a C program which would help placement cell to generate offer to appropriate candidate.

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B. Cities are considered as vertices in flow network and there is a directed edge from city X to city Y if $|Y| - |X| = 1$ ($|X|$= number of character in city X as if X= "Delhi", $|X|$= 5) and there is at least one character common between X and Y. Capacity of an edge from X to Y is 2*(number of common character between X and Y). However, there are few exceptions like city Goa is connected to all city for which there is no other incoming edge and capacity of those edges are 20 and city X is connected to Thiruvananthapuram if there is no other outgoing edge from city X and capacity of these edges are 20. Write a program to compute the maximum flow in the network in which we maintain a first-in first-out queue of over flowing vertices. The program repeatedly discharges the vertex at the head of the queue, and any vertices that were not over Flowing before the discharge but are overflowing afterward are placed at the end of the queue. After the vertex at the head of the queue is discharged, it is removed. When the queue is empty, the program terminates.

List of cities: Mumbai, Delhi, Bangalore, Hyderabad, Ahmedabad, Chennai, Kolkata, Surat, Pune, Jaipur, Lucknow, Kanpur, Nagpur, Visakhapatnam, Indore, Thane, Bhopal, Patna, Vadodara, Ghaziabad, Ludhiana, Coimbatore, Agra, Madurai, Nashik, Faridabad, Meerut, Rajkot, Varanasi, Srinagar, Aurangabad, Dhanbad, Amritsar, NaviMumbai, Allahabad, Ranchi, Howrah, Jabalpur, Gwalior, Vijayawada, Jodhpur, Raipur, Kota, Guwahati, Chandigarh, Thiruvananthapuram, Solapur, Tiruchirappalli, Bareilly, Moradabad, Mysore, Tiruppur, Gurgaon, Aligarh, Jalandhar, Bhubaneswar, Salem, Warangal, Guntur, Bhiwandi, Saharanpur, Gorakhpur, Bikaner, Amravati, Noida, Jamshedpur, Bhilai, Cuttack, Firozabad, Kochi, Goa

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