Jim Kong-nu has become the world’s supreme leader through a vile act of military madness. Now all that remains of the world are rebel forces from different countries of the world. For his own protection, he now lives in a deep underground bunker protected by many sentinels, each at a different level underground.  
 A final attack is being led on his fortress. Each country of the rebel alliance prepared a few waves of attacks but because of the tight surroundings of the bunker, each wave of attack must unveil sequentially and each country thus sends, turn by turn, the next wave of attack.   
e.g.:   
*country c1 sends its 1st wave, c2 sends its 1st wave … cN sends its 1st wave  
 c2 sends its 2nd wave, c2 sends its 2nd wave …  
 and so on*Each wave deals a certain amount of damage to a sentinel and each sentinel can withstand a certain amount of damage taken. ***If a wave destroys a sentinel, it can deal its remaining damage to the next one. However, if a wave does not destroy a sentinel, the sentinel regenerates 10% of the damage the wave caused to it.*** Because he is wimpy and sludgy, Jim Kong-nu requires only 1 damage point to be killed.   
If a country runs out of waves then it is simply not taken into account any more in any future waves.  
On the first line of *input.dat* we find the number of sentinels (**N**) which stand between the rebel forces and the world’s supreme leader. On the next line, **N** integers represent the corresponding damage which each sentinel can withstand.   
On the third line of *input.dat* we find the number of participating countries (**M**) which form the rebel alliance. Each of the next **M** lines first contain the name of the country followed by a variable number of waves which are put forth by each country for the attack.

You have to:

* Decide whether or not the attack succeeded in eliminating Jim Kong-nu
* Compute which of the countries had the hitting blow (if any) on the tyrant
* Compute which country was the strongest
* Compute which country was the weakest
* Compute whether or not any of the participant countries could have defeated all the sentinels by itself or, if none could have done this, which of the countries would have brought down the most sentinels

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| input.dat | output.dat |
| 5 100 200 300 400 500 8 China 20 40 50 5 5  France 90 30 15 15 5 5 America 10 10 5 5 5 5 Russia 100 100 50 200 1 Romania 200 1 1 1 1 1 1 1 1 1 1 Canada 50 50 50 20 20 25 Mexico 25 25 30 30 30 Brazil 45 45 20 20 45 | The tyrant was killed! The last hit was done by: Canada The strongest country was: Russia The weakest country was: America No country could have defeated all the sentinels. Russia could have brought down the first 2 sentinels and would have had chipped off 151 life points from sentinel 3. |

* Due date: as previous assignment
* Restrictions: will not be taken into consideration unless the previous assignment was done
* Final mark extra credit: 0.5 for the correct solution