

## Problem 3. Wizards

### Input / Constraints

Wizards are preparing - war is coming. In the first part wizards are created or updated. Until you receive command – "fight". Then you will start receiving names until command "end". At the end you should print survived wizards, ordered by health descending. The names of the wizards will be unique.

#### Creating/Upgrading wizards

You will receive information about the wizards in the following format:

{new/edit} {wizard\_name} {wizard\_health} {wizard\_damage}

- If you receive "new" you must create new wizard with the given params.
  - If wizard already exists you must print: "Wizard already exists!"
- If you receive "edit" you must **add** the new values for health and damage to the previous
  - If wizard does not exist you must print: "Wizard does not exist!"

When you receive command "fight" the war has been started!

#### Wizard battles

You will receive information about wizards in the following format:

{wizard\_name} <=> {wizard\_name}

- If **both wizards** exist you start the fight. The first is the attacker and the second is the attacked wizard. You must **decrease the health of the attacked wizard with the damage power of the attacker**. Attacker **increase its health by 50** with every battle.
- If attacked wizard's health become 0 or less you must print: "Fatality - {attacker\_name} wins!"  
and you must remove the attacked wizard
- If the attacked wizard is alive (**health is greater than 0**) you must print "Next time {attacked\_name}!"
- If **one** of the wizards **or both** do not exist just print: "Cannot place a fight with non-existing wizards!"

Note: wizard health and wizard damage will always be integers

### Output

You must print the **wizards that have been left** after the war, **sorted by their health in DESCENDING** order. In the following format:

Wizard: {name}. Health: {health}. Damage power: {damage}

### Examples

Input	Output	Comments
new codexX 23 50 new wizz0 20 1500 new figther 5000 3000	Fatality - codexX wins! Cannot place a fight with non-existing wizards! Wizard: figther. Health: 5000. Damage power: 3000	We are creating 3 new wizards. There is no repeting names so we

<pre> edit codexX 100 5000 fight codexX &lt;=&gt; wizz0 codexX &lt;=&gt; osa end </pre>	<pre> Wizard: codexX. Health: 173. Damage power: 5050 </pre>	<pre> create the tree of them.  We have cidexX so we upgrade its health to 123 and its damage power to 5050.  Both names are presented so we attack wiz0's health with 5050 power damage and its health decrease to - 5030 and we remove wizz0 and we print the message to the console.  codexX exists but osa doesn't so we print the message. </pre>
Input	Output	Comments
<pre> new ork 61 30 new sass 60 30 edit lass 20 30 new ork 600 30 fight sass &lt;=&gt; ork sass &lt;=&gt; ork ork &lt;=&gt; sass ork &lt;=&gt; sass ork &lt;=&gt; sass ork &lt;=&gt; sass ork &lt;=&gt; sass ork &lt;=&gt; sass ork &lt;=&gt; sass ork &lt;=&gt; sass end </pre>	<pre> Wizard does not exist! Wizard already exists! Next time ork! Next time ork! Next time sass! Next time sass! Next time sass! Next time sass! Next time sass! Next time sass! Fatality - ork wins! Cannot place a fight with non-existing wizards! Wizard: ork. Health: 301. Damage power: 30 </pre>	