

**STA Online Computer Programming Contest (DWITE)  
October 2003**

**Problem 4**

**You're "It"**

I remember, as a kid, playing games that required someone to be "It". Games like "Hide-Go-Seek" and "Tag" required one person to initially be "It". In order to determine who was "It", all of the players would put both fists in, creating a circle, and one person would say a rhyming verse while tapping on a player's fist for each word that was said in the verse. The rhyming verse that I was most familiar with was "Engine, Engine, Number Nine" and it went like this:

**Engine, engine, number nine  
Going down Chicago line  
If the train goes off the track  
Do you want your money back?**

*{The player whose fist was just tapped - replied  
"Yes" or "No"}*

**Y, E, S spells Yes and you are not it.  
N, O spells No and you are not it.**

*{if the player responded "Yes"}  
{if the player responded "No"}*

The player whose fist was tapped on the last word removed their fist from the circle and then the verse was started over again. After the verse was completed again, another fist was dropped from the circle. This continued until only one fist was left in the circle and the person that belonged to that fist was "It".

For example: Let's say that there are four persons, Bob, Sally, Mary and Jim, in that order, who want to play and they all put their fists in a circle. Let's start with Bob and go in a clockwise direction. Bob always answers "No", Sally "Yes", Mary "No" and Jim "Yes"

<b>Bob - R</b>	Engine	If	You	No	Number	The	You	Spells	Engine	Chicago	Off	Your	Spells	It
<b>Bob - L</b>	Engine	The	Want	and	Nine	Train	Want	No	Engine	Line	The	Money	Yes	
<b>Sally - R</b>	Number	Train	Your	You	Going	Goes	Your	And	Number	If	Track	Back	And	
<b>Sally - L</b>	Nine	Goes	Money	Are	Down	Off	Money	You	Nine	The	Do	Y	You	
<b>Mary - R</b>	Going	Off	Back	Not	Chicago	The	Back	Are	Going	Train	You	E	Are	
<b>Mary - L</b>	Down	The	N	It										
<b>Jim - R</b>	Chicago	Track	O	Engine	Line	Track	N	Not	Down	Goes	Want	S	Not	
<b>Jim - L</b>	Line	Do	spells	Engine	If	Do	O	It						

The above chart, lists just three rounds of the verse. If the verse were to continue, for four more rounds, the last fist remaining would be Mary's Right Fist, so Mary would be "It".

You are to write a program to determine who will be "It" from a list of players.

The input file (DATA4) will contain five sets of data. Each set will contain on the first line, an integer N, representing the number of persons playing,  $1 \leq N \leq 50$ . The next N lines will contain, in uppercase, the person's first name, followed by a single space, and how they respond to their fist being tapped, either "YES" or "NO". A player always responds the same way, when prompted for "Yes" or "No". The verse will begin with the first person in the list, beginning with their right fist, then their left fist, then the second person's right fist, then left fist and so on.

The output file (OUT4) will contain five lines of data, corresponding to each set from the input file. Each line will contain the first name of the player who is "It".

**Sample Input (Only two sets given)**

4  
BOB NO  
SALLY YES  
MARY NO  
JIM YES  
3  
RAFAL YES  
AIDAN YES  
SAUBIR YES

**Sample Output**

MARY  
AIDAN