# Double Elimination Contest

You are to write an Ada program that simulates a double elimination contest. Your program will input a list of players, each of whom has a name and an integer skill level. (More detail on the input format is given below.) After all players have been input, pairs of players are repeatedly formed and the members of a pair play a match against each other. As described below, the skill level (and perhaps some other information) determines who wins the match. Players are eliminated from the competition when they have two losses.

The sequence of play is as follows:

1. Players with no losses play matches until only one remains with no losses.
2. Then, players with one loss continue to play matches until only one player remains with one loss.
3. Finally, the two players who have exactly zero and one losses play one or two matches until one of them has exactly two losses (and the other has zero or one loss).

Players stand in lines until it is time for a match. Three lines are needed for different types of players: those with no losses, those with one loss, and those with 2 losses (ie those who have been eliminated). The players form the line of no losses as they arrive at the contest (ie the order of this line will initially be the same as the order of the input data). When match time comes, the first two players in the appropriate line get out of line and play a match. The winner goes to the back of the same line, and the loser goes to the back of the line containing players with the appropriate number of losses.

Players in any line play in order. In other words, the first two play, then the second two play, then the third two play, and so on, until only one player remains in that line.

The output of your program should consist of the following information for each player, in columns with one line per player:

* Name
* Arrival number (eg first player to arrive is number 1)
* Skill level
* Number of wins
* Number of losses

In the output, the list of players should be in the REVERSE of the order in which they were eliminated. In other words, the winner should be first, followed by the player who the winner most recently beat, and so on with the player who was eliminated first at the end of the output.

Input will come from standard input with one line of input for each player. Each line of the input should consist of the name in the first 20 columns and the skill level beginning in column 21. Your program should produce meaningful output if there are zero, one, or two players. (Don't forget that two players should have a contest, even if there are only two of them.) You may assume that the input is valid.

A player's skill level will be represented by an integer. In a match between two players, the player with the largest skill level wins. In a match between two players with the same skill level, the player with the largest number of wins will win. In a match between two players with the same skill level and the same number of wins, the one with the fewest number of losses will win. In a match between two players with the same skill level and the same number of wins and losses, the one who arrives first wins (ie the winner is the player who is first in the input).

You must implement a *dynamic implementation of a queue and a stack*, using these [queue](http://www.radford.edu/~nokie/classes/320/queuepkg2.ads) and [stack](http://www.radford.edu/~nokie/classes/320/stackpkg2.ads) package specifications.   
[Note: If you want to work on your client program before you have your dynamic queue packages working, then you can implement and use the array implementations of stacks and queues. However, if you do this, do NOT submit the array implementations.]

*It is important that you do not make****any changes****to these specification files*

Your program should be called contest.adb. You do not need to raise any exceptions in your program.