The Virtual Learning Environment for Computer Programming

Progress in a cycling race

X69907_en

At the end of this problem you will find an incomplete program and your job is to finish it. In particular, there are two functions which have to be implemented. The following explanation gives you the details about data types and the job of those two functions. The program will work with a data type called <code>Cyclist</code>, which represents a cyclist participating in a race, and includes the cyclist's name, his current position and his current velocity. To make it simple, we will use integer values instead of real numbers.

```
struct Cyclist {
   string name;
   int position;
   int velocity;
};
```

The program also works with another data type ListCyclists, which represents a list of cyclists:

```
typedef vector<Cyclist> ListCyclists;
```

You'll have to implement a function which receives a list of cyclists and an elapsed time, and it has to update the position of all cyclists adding their current velocity multiplied by the elapsed time. If you want to think in terms of units, you could say that position is in meters, time in seconds, and velocity in meters per second.

```
void progressCyclists(int time, ListCyclists &listcyclists);
```

Additionally, you will have to implement a function which receives two cyclists and returns true if the first is less than the second, using the following criteria. A cyclist is less than another if its position is strictly less than the other's position, or if he has the same position as the other and his velocity is less than the other's velocity, or he has the same position and velocity as the other but his name is less than the name of the other in lexicographical order.

```
bool smallerCyclist(Cyclist c1, Cyclist c2);
```

This function is used in another part of the program to sort the list of cyclists. Complete, then, the following code to solve the exercise:

```
#include <iostream>
#include <string>
#include <vector>
#include <algorithm>

// Here you can add more includes if you wish.
// ...
using namespace std;
```

```
struct Cyclist {
  string name;
  int position;
  int velocity;
};
typedef vector<Cyclist> ListCyclists;
// Auxiliary functions (you can add more functions if you wish)
// Pre:
// Post: Prints all cyclists from first to last, one per line, and with the for
       name position velocity
void printCyclists(const ListCyclists &listcyclists)
  for (int i = 0; i < int(listcyclists.size()); i++) {</pre>
   const Cyclist &c = listcyclists[i];
    cout << c.name << " " << c.position << " " << c.velocity << endl;</pre>
  }
}
// Pre: variable 'time' is strictly positive and represents a time elapsed.
// Post: All positions of cyclists in listcyclists have been updated
         according to the given time elapsed and their corresponding velocity.
void progressCyclists(int time, ListCyclists &listcyclists)
 // Implement this function.
 //...
}
// Pre: c1, c2 represent correct cyclists.
// Post: Returns true iff one of the following conditions holds:
           - position of c1 is strictly smaller than position of c2.
//
           - c1 and c2 have same position but velocity of c1 is strictly smalle
           - c1 and c2 coincide in position and velocity, but c1 has smaller na
//
bool smallerCyclist(Cyclist c1, Cyclist c2)
  // Implement this function.
  //...
}
int main()
 int n;
  cin >> n;
 ListCyclists listcyclists(n);
  for (int i = 0; i < n; i++) {
    Cyclist &c = listcyclists[i];
    cin >> c.name;
```

```
c.position = 0;
    c.velocity = 0;
  }
  string command;
 while (cin >> command) {
   if (command == "UPDATEVELOCITY") {
      int i, velocity;
      cin >> i >> velocity;
      listcyclists[i].velocity = velocity;
    } else if (command == "SORT") {
      sort(listcyclists.begin(), listcyclists.end(), smallerCyclist);
    } else if (command == "PRINT") {
      cout << "Current list cyclists:" << endl;</pre>
      printCyclists(listcyclists);
      cout << endl;
    } else if (command == "PROGRESSCYCLISTS") {
      int time;
      cin >> time;
      progressCyclists(time, listcyclists);
}
```

Input

The input consists of a list of commands to update the speed of a cyclist, to sort all cyclists, and to move their positions. You don't have to worry too much about the input since the main function already takes care of reading commands and calling the appropriate functions.

Output

The output shows the results of applying the commands. You don't have to worry too much about the output since the main function already takes care of producing it by calling the appropriate functions.

```
Sample input 1
                                           PRINT
                                           UPDATEVELOCITY 5 8
                                          PRINT
indurain lejarreta amstrong delgado vingeq_{\text{PPATEVETY}} 1 3
UPDATEVELOCITY 3 6
                                           UPDATEVELOCITY 3 2
PROGRESSCYCLISTS 6
                                           UPDATEVELOCITY 2 8
UPDATEVELOCITY 0 10
                                           UPDATEVELOCITY 2 6
                                           UPDATEVELOCITY 5 7
UPDATEVELOCITY 1 1
                                           PRINT
                                           UPDATEVELOCITY 2 4
PROGRESSCYCLISTS 7
                                           UPDATEVELOCITY 2 7
PROGRESSCYCLISTS 7
                                           UPDATEVELOCITY 3 6
UPDATEVELOCITY 4 2
                                           UPDATEVELOCITY 3 7
UPDATEVELOCITY 3 10
                                          UPDATEVELOCITY 4 10
UPDATEVELOCITY 2 3
                                          UPDATEVELOCITY 5 5
UPDATEVELOCITY 1 6
                                          UPDATEVELOCITY 0 6
PROGRESSCYCLISTS 3
                                          PRINT
```

| UPDATEVELOCITY 2 | 5 |
|--|--|
| | |
| UPDATEVELOCITY 2 | |
| PROGRESSCYCLISTS | 7 |
| UPDATEVELOCITY 2 | 5 |
| UPDATEVELOCITY 5 | 5 |
| PRINT | • |
| | |
| PROGRESSCYCLISTS | 1 |
| UPDATEVELOCITY 0 | 10 |
| UPDATEVELOCITY 4 | 7 |
| UPDATEVELOCITY 5 | 6 |
| | |
| UPDATEVELOCITY 2 | 9 |
| UPDATEVELOCITY 3 | 8 |
| PRINT | |
| UPDATEVELOCITY 0 | 3 |
| PRINT | |
| | |
| SORT | |
| PRINT | |
| UPDATEVELOCITY 1 | 6 |
| PROGRESSCYCLISTS | 5 |
| | |
| PROGRESSCYCLISTS | 1 |
| UPDATEVELOCITY 3 | 8 |
| UPDATEVELOCITY 5 | 2 |
| UPDATEVELOCITY 3 | 8 |
| PRINT | - |
| | 4 |
| UPDATEVELOCITY 5 | 4 |
| PROGRESSCYCLISTS | 6 |
| PRINT | |
| UPDATEVELOCITY 5 | 5 |
| | |
| | 3 |
| UPDATEVELOCITY 3 | 10 |
| PRINT | |
| UPDATEVELOCITY 5 | 1 |
| PRINT | |
| | 1 |
| PROGRESSCYCLISTS | 4 |
| UPDATEVELOCITY 1 | 7 |
| UPDATEVELOCITY 1 | 6 |
| UPDATEVELOCITY 4 | 5 |
| UPDATEVELOCITY 1 | 1 |
| | _ |
| PRINT | |
| UPDATEVELOCITY 4 | 5 |
| UPDATEVELOCITY 5 | 7 |
| UPDATEVELOCITY 3 | |
| | 8 |
| | |
| UPDATEVELOCITY 3 | 8 7 |
| UPDATEVELOCITY 3 PRINT | 7 |
| UPDATEVELOCITY 3 | |
| UPDATEVELOCITY 3 PRINT | 7 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS | 7 9 8 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 | 7 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT | 7 9 8 9 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 | 7 9 8 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT | 7 9 8 9 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 | 7 9 8 9 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT | 7 9 8 9 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 2 | 7 9 8 9 6 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT | 7 9 8 9 6 4 10 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 | 7 9 8 9 6 4 10 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 1 UPDATEVELOCITY 1 | 7 9 8 9 6 4 10 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 | 7 9 8 9 6 4 10 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 1 UPDATEVELOCITY 2 UPDATEVELOCITY 2 | 7 9 8 9 6 4 10 4 7 9 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 1 UPDATEVELOCITY 2 UPDATEVELOCITY 2 UPDATEVELOCITY 4 UPDATEVELOCITY 4 | 7 9 8 9 6 4 10 4 7 9 10 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 2 UPDATEVELOCITY 2 UPDATEVELOCITY 4 UPDATEVELOCITY 0 UPDATEVELOCITY 0 | 7 9 8 9 6 4 10 4 7 9 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 1 UPDATEVELOCITY 2 UPDATEVELOCITY 4 UPDATEVELOCITY 0 UPDATEVELOCITY 5 PRINT | 7 9 8 9 6 4 10 4 7 9 10 7 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 2 UPDATEVELOCITY 2 UPDATEVELOCITY 4 UPDATEVELOCITY 0 UPDATEVELOCITY 0 | 7 9 8 9 6 4 10 4 7 9 10 |
| UPDATEVELOCITY 3 PRINT UPDATEVELOCITY 5 PROGRESSCYCLISTS UPDATEVELOCITY 1 SORT UPDATEVELOCITY 1 SORT UPDATEVELOCITY 2 UPDATEVELOCITY 0 PRINT UPDATEVELOCITY 1 UPDATEVELOCITY 1 UPDATEVELOCITY 2 UPDATEVELOCITY 4 UPDATEVELOCITY 0 UPDATEVELOCITY 5 PRINT | 7 9 8 9 6 4 10 4 7 9 10 7 |

UPDATEVELOCITY 4 1
UPDATEVELOCITY 5 5
UPDATEVELOCITY 3 3
PROGRESSCYCLISTS 5
SORT
PRINT
UPDATEVELOCITY 4 9
PROGRESSCYCLISTS 3
UPDATEVELOCITY 5 4

Sample output 1

Current list cyclists: indurain 0 10 lejarreta 0 0 amstrong 0 0 delgado 36 6 vingegaard 0 0 hinault 0 0

Current list cyclists: amstrong 0 0 hinault 18 6 vingegaard 9 3 lejarreta 44 10 indurain 146 2 delgado 138 6

Current list cyclists: amstrong 0 0 hinault 18 6 vingegaard 9 3 lejarreta 44 10 indurain 146 2 delgado 138 8

Current list cyclists: amstrong 0 0 hinault 18 3 vingegaard 9 6 lejarreta 44 2 indurain 146 2 delgado 138 7

Current list cyclists: amstrong 0 6 hinault 18 3 vingegaard 9 7 lejarreta 44 7 indurain 146 10 delgado 138 5

Current list cyclists: amstrong 42 6 hinault 39 3 vingegaard 65 5 lejarreta 93 7 indurain 216 10 delgado 173 5

Current list cyclists: amstrong 48 10 hinault 42 3 vingegaard 70 9 lejarreta 100 8 indurain 226 7 delgado 178 6

Current list cyclists: amstrong 48 3 hinault 42 3

vingegaard 70 9 lejarreta 100 8 indurain 226 7 delgado 178 6

Current list cyclists: hinault 42 3 amstrong 48 3 vingegaard 70 9 lejarreta 100 8 delgado 178 6 indurain 226 7

Current list cyclists: hinault 60 3 amstrong 84 6 vingegaard 124 9 lejarreta 148 8 delgado 214 6 indurain 268 2

Current list cyclists: hinault 78 3 amstrong 120 6 vingegaard 178 9 lejarreta 196 8 delgado 250 6 indurain 292 4

Current list cyclists: hinault 78 3 amstrong 120 6 vingegaard 178 9 lejarreta 196 10 delgado 250 6 indurain 292 5

Current list cyclists: hinault 78 3 amstrong 120 6 vingegaard 178 9 lejarreta 196 10 delgado 250 6 indurain 292 1

Current list cyclists: hinault 90 3 amstrong 144 1 vingegaard 214 9 lejarreta 236 10 delgado 274 5 indurain 296 1

Current list cyclists: hinault 90 3 amstrong 144 1 vingegaard 214 9 lejarreta 236 7 delgado 274 5 indurain 296 7

hinault 114 10 delgado 314 9 amstrong 152 6 indurain 368 7 vingegaard 286 4 lejarreta 292 7 Current list cyclists: delgado 314 5 amstrong 188 4 indurain 368 9 hinault 204 10 lejarreta 335 3 Current list cyclists: vingegaard 349 7 hinault 114 10 delgado 355 1 amstrong 152 4 indurain 421 5 vingegaard 286 7 Sample input 2 SORT UPDATEVELOCITY 8 0 UPDATEVELOCITY 2 2 indurain lejarreta amstrong delgado vingegaard hipaudt merckx froome anquetil lemond bernal niba UPDATEVELOCITY 15 0 UPDATEVELOCITY 7 1 UPDATEVELOCITY 7 0 UPDATEVELOCITY 8 0 UPDATEVELOCITY 9 2 UPDATEVELOCITY 3 1 UPDATEVELOCITY 10 2 UPDATEVELOCITY 6 0 UPDATEVELOCITY 15 2 UPDATEVELOCITY 16 1 UPDATEVELOCITY 3 0 PRINT UPDATEVELOCITY 2 0 UPDATEVELOCITY 11 1 PRINT PROGRESSCYCLISTS 2 UPDATEVELOCITY 10 0 UPDATEVELOCITY 14 1 UPDATEVELOCITY 13 2 UPDATEVELOCITY 14 2 UPDATEVELOCITY 16 0 UPDATEVELOCITY 3 2 UPDATEVELOCITY 11 1 UPDATEVELOCITY 8 1 UPDATEVELOCITY 1 1 PRINT UPDATEVELOCITY 8 0 PROGRESSCYCLISTS 2 PROGRESSCYCLISTS 2 UPDATEVELOCITY 17 0 UPDATEVELOCITY 2 1 UPDATEVELOCITY 3 1 PROGRESSCYCLISTS 3 SORT UPDATEVELOCITY 15 2 UPDATEVELOCITY 6 2 UPDATEVELOCITY 10 2 PRINT SORT UPDATEVELOCITY 5 2 UPDATEVELOCITY 17 0 PRINT PRINT UPDATEVELOCITY 6 1 UPDATEVELOCITY 15 0 PROGRESSCYCLISTS 3 PROGRESSCYCLISTS 3 UPDATEVELOCITY 4 1 PRINT UPDATEVELOCITY 4 2 UPDATEVELOCITY 2 2 SORT UPDATEVELOCITY 14 2 UPDATEVELOCITY 13 0 UPDATEVELOCITY 7 0 UPDATEVELOCITY 13 1 UPDATEVELOCITY 7 0 UPDATEVELOCITY 16 1 UPDATEVELOCITY 17 1 UPDATEVELOCITY 6 1 UPDATEVELOCITY 7 1 UPDATEVELOCITY 0 0 UPDATEVELOCITY 6 2 UPDATEVELOCITY 5 1 UPDATEVELOCITY 3 2 UPDATEVELOCITY 12 1 UPDATEVELOCITY 0 0 UPDATEVELOCITY 11 0 PROGRESSCYCLISTS 3 UPDATEVELOCITY 14 0 UPDATEVELOCITY 4 1 UPDATEVELOCITY 16 0 UPDATEVELOCITY 9 2 UPDATEVELOCITY 2 2 PRINT UPDATEVELOCITY 17 1 UPDATEVELOCITY 0 2 UPDATEVELOCITY 12 2 PRINT UPDATEVELOCITY 9 0 UPDATEVELOCITY 10 2 UPDATEVELOCITY 12 0 UPDATEVELOCITY 9 1 PROGRESSCYCLISTS 2 PROGRESSCYCLISTS 2 UPDATEVELOCITY 17 2

lejarreta 292 7

Current list cyclists:

PRINT

| PRINT | |
|--------------------------------------|----------|
| UPDATEVELOCITY 14 | 1 |
| UPDATEVELOCITY 9 0 | |
| UPDATEVELOCITY 17 | 1 |
| PROGRESSCYCLISTS 3 | |
| PRINT | |
| UPDATEVELOCITY 13 | 1 |
| | 2 |
| UPDATEVELOCITY 14 (| C |
| UPDATEVELOCITY 8 1 | |
| UPDATEVELOCITY 3 2 | |
| PROGRESSCYCLISTS 3 | |
| UPDATEVELOCITY 3 1 | |
| UPDATEVELOCITY 1 1 | |
| UPDATEVELOCITY 11 | 1 |
| UPDATEVELOCITY 1 1 | |
| PRINT | _ |
| UPDATEVELOCITY 14 | |
| |) |
| UPDATEVELOCITY 10 (| J |
| UPDATEVELOCITY 3 2 | |
| UPDATEVELOCITY 5 1 | 1 |
| UPDATEVELOCITY 17 | L |
| UPDATEVELOCITY 0 2 | |
| UPDATEVELOCITY 1 1 | |
| PROGRESSCYCLISTS 2 | 1 |
| UPDATEVELOCITY 14 | L |
| UPDATEVELOCITY 9 1 | |
| UPDATEVELOCITY 0 2 | |
| UPDATEVELOCITY 6 1 | |
| UPDATEVELOCITY 6 1 | 1 |
| UPDATEVELOCITY 12 | L |
| PRINT | |
| UPDATEVELOCITY 1 0 UPDATEVELOCITY 13 | 1 |
| | |
| |) |
| | 2 |
| UPDATEVELOCITY 10 (| J |
| PRINT | |
| UPDATEVELOCITY 8 2 | 1 |
| UPDATEVELOCITY 13 | L |
| PROGRESSCYCLISTS 1 | |
| PRINT | |
| UPDATEVELOCITY 10 1 | 1 |
| | |
| UPDATEVELOCITY 14 (| |
| UPDATEVELOCITY 17 | L |
| PROGRESSCYCLISTS 1 | |
| UPDATEVELOCITY 2 2 | |
| PRINT | |
| UPDATEVELOCITY 1 0 | |
| PRINT | 2 |
| UPDATEVELOCITY 15 2 | ۷ |
| PRINT | |
| PROGRESSCYCLISTS 3 | 2 |
| UPDATEVELOCITY 14 2 | ∠ |
| PRINT | |
| UPDATEVELOCITY 9 0 | 1 |
| UPDATEVELOCITY 13 (| J |

UPDATEVELOCITY 4 0 UPDATEVELOCITY 6 1

Sample output 2

| Cample output 2 | |
|-------------------------------------|-------------------------------------|
| Sample output 2 | Current list qualists. |
| Current list cyclists: | Current list cyclists: anguetil 0 0 |
| indurain 0 0 | contador 0 0 |
| lejarreta 0 0 | delgado 6 2 |
| amstrong 0 0 | froome 6 2 |
| delgado 0 0 | hinault 0 1 |
| vingegaard 0 0 | indurain 0 0 |
| hinault 0 0 | merckx 6 2 |
| merckx 0 0 | pantani 3 1 |
| froome 0 0 | ullrich 0 0 |
| anquetil 0 0 | vingegaard 0 2 |
| lemond 0 2 | wiggins 0 0 |
| bernal 0 2 | bernal 12 2 |
| nibali 0 0 | amstrong 9 1 |
| wiggins 0 0 | lejarreta 11 1 |
| evans 0 0 | nibali 14 2 |
| contador 0 0 | evans 10 0 |
| sastre 0 2 | lemond 22 2 |
| pantani 0 0 ullrich 0 0 | sastre 13 1 |
| ulliling 0 0 | |
| Current list cyclists: | Current list cyclists: |
| anquetil 0 0 | anquetil 0 2 |
| contador 0 0 | contador 0 0 |
| delgado 0 0 | delgado 6 2 |
| froome 0 0 | froome 6 2 |
| hinault 0 0 | hinault 0 1 |
| indurain 0 0 | indurain 0 0 |
| merckx 0 0 | merckx 6 2 |
| pantani 0 0 | pantani 3 1 ullrich 0 0 |
| ullrich 0 0 | vingegaard 0 2 |
| vingegaard 0 0 | wiggins 0 0 |
| wiggins 0 0 | bernal 12 2 |
| bernal 0 2 | amstrong 9 1 |
| amstrong 3 1 | lejarreta 11 1 |
| lejarreta 5 1 | nibali 14 2 |
| nibali 5 1 | evans 10 0 |
| evans 10 2 | lemond 22 2 |
| lemond 10 2 | sastre 13 1 |
| sastre 10 0 | |
| Current list avalists. | Current list cyclists: |
| Current list cyclists: anquetil 0 0 | anquetil 4 2 |
| contador 0 0 | contador 0 0 |
| delgado 0 0 | delgado 10 2 |
| froome 0 0 | froome 10 2 |
| hinault 0 0 | hinault 2 1 |
| indurain 0 0 | indurain 0 0 |
| merckx 0 0 | merckx 10 2 pantani 5 1 |
| pantani 0 0 | ullrich 0 0 |
| ullrich 0 0 | vingegaard 2 1 |
| vingegaard 0 0 | wiggins 4 2 |
| wiggins 0 0 | bernal 16 2 |
| bernal 6 2 | amstrong 11 1 |
| amstrong 6 1 | lejarreta 13 1 |
| lejarreta 8 1 | nibali 18 2 |
| nibali 8 1 | evans 10 0 |
| evans 10 0 | lemond 26 2 |
| lemond 16 2 | sastre 15 1 |
| sastre 10 0 | |
| | • |

```
Current list cyclists:
                                          contador 0 0
contador 0 0
                                           indurain 0 0
indurain 0 0
                                          wiggins 4 0
ullrich 0 2
                                          vingegaard 6 1
hinault 2 1
                                          hinault 8 1
                                          ullrich 8 2
vingegaard 2 1
anquetil 4 2
                                          pantani 9 2
wiggins 4 0
                                          evans 12 1
pantani 5 1
                                          anquetil 12 2
evans 10 0
                                          merckx 14 1
delgado 10 2
                                          amstrong 15 1
froome 10 2
                                          lejarreta 17 1
merckx 10 2
                                           delgado 18 2
amstrong 11 1
                                           froome 18 2
                                           sastre 21 2
lejarreta 13 1
                                          nibali 22 1
sastre 15 1
                                          bernal 24 2
bernal 16 2
nibali 18 1
                                          lemond 34 0
lemond 26 2
                                          Current list cyclists:
Current list cyclists:
                                          contador 0 0
contador 0 0
                                          indurain 0 0
indurain 0 0
                                          wiggins 8 2
ullrich 4 2
                                          vingegaard 11 1
hinault 4 2
                                          hinault 15 2
vingegaard 4 1
                                          pantani 14 1
                                          ullrich 16 1
anquetil 8 2
                                          evans 17 1
wiggins 4 0
pantani 7 1
                                          merckx 19 1
evans 10 1
                                          amstrong 18 0
delgado 14 2
                                          anquetil 22 2
froome 14 2
                                          lejarreta 20 0
                                          delgado 24 0
merckx 12 1
amstrong 13 1
                                          froome 26 1
                                          nibali 25 0
lejarreta 15 1
sastre 17 2
                                          sastre 31 2
bernal 20 2
                                          bernal 30 0
nibali 20 1
                                          lemond 36 2
lemond 30 2
                                          Current list cyclists:
Current list cyclists:
                                          contador 0 0
contador 0 0
                                          indurain 0 0
indurain 0 0
                                          wiggins 14 2
wiggins 4 0
                                          vingegaard 14 1
vingegaard 6 1
                                          hinault 21 2
hinault 8 1
                                          pantani 17 1
                                          ullrich 19 1
ullrich 8 2
pantani 9 2
                                          evans 20 1
                                          merckx 22 1
evans 12 1
anquetil 12 2
                                          amstrong 18 0
merckx 14 1
                                          anguetil 28 2
                                          lejarreta 20 0
amstrong 15 1
                                           delgado 24 0
lejarreta 17 1
delgado 18 2
                                           froome 29 1
froome 18 2
                                          nibali 28 1
sastre 21 2
                                           sastre 37 2
                                          bernal 30 0
nibali 22 1
bernal 24 2
                                          lemond 39 1
lemond 34 0
                                           Current list cyclists:
                                          contador 0 0
Current list cyclists:
```

```
indurain 0 1
                                           amstrong 19 1
wiggins 20 2
                                           lejarreta 20 0
vingegaard 20 1
                                           pantani 23 1
hinault 27 2
                                           delgado 25 1
                                           ullrich 25 1
pantani 20 1
                                           evans 26 1
ullrich 22 1
evans 23 1
                                           vingegaard 26 2
merckx 25 1
                                           wiggins 26 2
amstrong 18 0
                                           merckx 29 2
anquetil 34 2
                                           nibali 31 1
lejarreta 20 1
                                           bernal 32 2
delgado 24 0
                                           hinault 33 2
froome 32 1
                                           anquetil 34 0
nibali 28 0
                                           froome 35 1
sastre 43 2
                                           lemond 45 1
bernal 30 0
                                           sastre 49 2
lemond 42 1
                                           Current list cyclists:
                                           indurain 2 0
Current list cyclists:
                                           contador 8 2
contador 4 2
indurain 2 1
                                           amstrong 20 2
wiggins 24 2
                                           lejarreta 20 0
vingegaard 24 2
                                           pantani 24 1
hinault 31 2
                                           delgado 26 1
pantani 22 1
                                           ullrich 26 1
ullrich 24 1
                                           evans 27 1
evans 25 1
                                           vingegaard 28 2
merckx 27 1
                                           wiggins 28 2
amstrong 18 1
                                           merckx 30 1
anquetil 34 0
                                           nibali 32 1
lejarreta 20 0
                                           bernal 34 2
delgado 24 1
                                           hinault 35 2
froome 34 1
                                           anguetil 34 0
nibali 30 1
                                           froome 36 1
sastre 47 2
                                           lemond 46 1
bernal 30 0
                                           sastre 50 1
lemond 44 1
                                           Current list cyclists:
Current list cyclists:
                                           indurain 2 0
                                           contador 8 0
contador 4 2
indurain 2 0
                                           amstrong 20 2
wiggins 24 2
                                           lejarreta 20 0
                                           pantani 24 1
vingegaard 24 2
hinault 31 2
                                           delgado 26 1
pantani 22 1
                                           ullrich 26 1
ullrich 24 1
                                           evans 27 1
                                           vingegaard 28 2
evans 25 1
merckx 27 1
                                           wiggins 28 2
                                           merckx 30 1
amstrong 18 1
anquetil 34 0
                                           nibali 32 1
lejarreta 20 0
                                           bernal 34 2
delgado 24 1
                                           hinault 35 2
froome 34 1
                                           anguetil 34 0
nibali 30 1
                                           froome 36 1
sastre 47 2
                                           lemond 46 1
bernal 30 2
                                           sastre 50 1
lemond 44 1
                                           Current list cyclists:
Current list cyclists:
                                           indurain 2 0
indurain 2 0
                                           contador 8 0
contador 6 2
                                           amstrong 20 2
```

| lejarreta 20 0 | vingegaard 34 2 |
|------------------------|------------------------|
| pantani 24 1 | nibali 35 1 |
| delgado 26 1 | bernal 40 2 |
| ullrich 26 1 | hinault 41 0 |
| evans 27 1 | froome 42 2 |
| vingegaard 28 2 | lemond 49 1 |
| wiggins 28 2 | sastre 53 1 |
| merckx 30 1 | |
| nibali 32 1 | Current list cyclists: |
| bernal 34 2 | indurain 8 1 |
| hinault 35 2 | contador 8 0 |
| anquetil 34 0 | lejarreta 20 0 |
| froome 36 2 | amstrong 32 2 |
| lemond 46 1 | pantani 27 0 |
| sastre 50 1 | delgado 35 1 |
| | ullrich 38 2 |
| Current list cyclists: | evans 39 2 |
| indurain 2 0 | merckx 39 1 |
| contador 8 0 | wiggins 34 0 |
| amstrong 26 2 | anquetil 46 2 |
| lejarreta 20 0 | vingegaard 46 2 |
| pantani 27 1 | nibali 41 2 |
| delgado 29 1 | bernal 52 1 |
| ullrich 29 1 | hinault 41 0 |
| evans 30 1 | froome 54 2 |
| vingegaard 34 2 | lemond 55 1 |
| wiggins 34 2 | sastre 59 1 |
| merckx 33 1 | |
| nibali 35 1 | Current list cyclists: |
| bernal 40 2 | indurain 8 2 |
| hinault 41 2 | contador 8 0 |
| anquetil 34 2 | lejarreta 20 0 |
| froome 42 2 | amstrong 32 2 |
| lemond 49 1 | pantani 27 0 |
| sastre 53 1 | delgado 35 1 |
| | ullrich 38 2 |
| Current list cyclists: | evans 39 2 |
| indurain 2 1 | merckx 39 1 |
| contador 8 0 | wiggins 34 0 |
| lejarreta 20 0 | anquetil 46 2 |
| amstrong 26 2 | vingegaard 46 1 |
| pantani 27 0 | nibali 41 0 |
| delgado 29 1 | bernal 52 1 |
| ullrich 29 1 | hinault 41 0 |
| evans 30 1 | froome 54 2 |
| merckx 33 1 | lemond 55 1 |
| wiggins 34 0 | sastre 59 1 |
| anquetil 34 2 | |
| | |

Problem information

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