

Game Table

For a competition of teams a game table as ranking shall be programmed.

Task 1 Structure Type

Give a C/C++ structure type definition for a team with a C++ string for the name of the team and two integer numbers for the amount of collected points and the amount of done matches.

Task 2 Initialisation Array

Define a function with a one-dimensional array of teams (having the data type defined in task 1) and the number of teams as parameters. In the body the name of each team shall be inputted and stored in the array as well as the collected points and done matches be set to value zero.

Task 3 Output Game Table

Define a function with a one-dimensional array of teams (having the data type defined in task 1) and the number of teams as parameters. In the body a table with points, done matches and the name of the team as columns shall be written onto standard character output stream (see example below).

Task 4 Choosing a Team

Define a function with a one-dimensional array of teams (having the data type defined in task 1) and the number of teams as parameters as well as an integer as return value. In the body a table with the team name of players and an index number in front shall be written onto standard character output stream and by inputting a number this team get chosen and its index returned by the function (see example below).

Task 5 Store Game and Points For a Team

Define a function with a one-dimensional array of teams (having the data type defined in task 1), the number of teams, an (actual) array index of a team and a number of points as four parameters. In the body the indexed team shall get added the points, the number of done matches getting incremented and the team depending on its new total number of points getting sorted maybe higher above in the table (see example below).

Task 6 Reset Game Table

Define a function with a one-dimensional array of teams (having the data type defined in task 1) and the number of teams as parameters. In the body all points of all teams and all numbers of done matches shall be reset to zero.

Task 7 Menue

Define a function **main**

- first the number of teams gets asked and
- an arra exactly fitting in size being defined,
- values in the array getting initialised by a call to the function defined in task 2 and
- the initial game table getting outputted.

Afterwards by a small menu

- results from single matches shall be inputted and the ranking getting adjusted,
- the actual game table getting outputted or
- resetted

(each menu entry by (several) calls of above defined functions in subtasks before; see example below).

Important to Regard

Only use C++ input and output, **no calls** of **scanf** or **printf** function, your source code file has to have name **h1_yourMatriculationNumber.cpp**, the ending **.cpp** is essential for the plagiarism checker as well as for our check programs, **no text file** with ending **.txt**, **no project file .cbp** or similar and **no .rar, .zip, ... file** (the plagiarism checker does not understand all these formats, therefore you would get 0 points for it), also your program is **only allowed containing ASCII characters** (no characters or signs from non Latin ones), **only includes of standard C++ libraries** (i.e. no libraries with ending **.h** like **conio.h, stdio.h, windows.h, ...**) and shall follow standard **C++11** (or newer).

Precheck your source code by downloaded program **precheck_H1**

h1_yourMatriculationNumber.cpp.

Example Program Run:

number of teams: 5

```
input of teams
=====
team 1: Dilbert
team 2: Wally
team 3: Alice
team 4: Asok
team 5: Ted
```

initial ranking

=====

points	done	matches	name
0	0		Dilbert
0	0		Wally
0	0		Alice
0	0		Asok
0	0		Ted

0 end

1 add result of a match

2 show ranking

9 reset points

your choice: 1

please choose team 1?

teams

=====

1	Dilbert
2	Wally
3	Alice
4	Asok
5	Ted

choose team by number: 2

please choose team 2?

teams

=====

1	Dilbert
2	Wally
3	Alice
4	Asok
5	Ted

choose team by number: 5

input as [points of Wally] : [points of Ted]? 2 : 3

0 end

1 add result of a match

2 show ranking

9 reset points

your choice: 2

ranking

=====

points	done	matches	name
3	1		Ted
2	1		Wally
0	0		Dilbert
0	0		Alice
0	0		Asok

0 end

1 add result of a match

2 show ranking

9 reset points

your choice: 1

please choose team 1?

teams

```

=====
1      Ted
2      Wally
3      Dilbert
4      Alice
5      Asok
choose team by number: 4
please choose team 2?
teams
=====
1      Ted
2      Wally
3      Dilbert
4      Alice
5      Asok
choose team by number: 5
input as [points of Alice] : [points of Asok]? 2 : 0
0 end
1 add result of a match
2 show ranking
9 reset points
your choice: 2

```

```

ranking
=====
points  done matches  name
3       1              Ted
2       1              Wally
2       1              Alice
0       0              Dilbert
0       1              Asok

```

```

0 end
1 add result of a match
2 show ranking
9 reset points
your choice: 1
please choose team 1?
teams
=====
1      Ted
2      Wally
3      Alice
4      Dilbert
5      Asok
choose team by number: 3
please choose team 2?
teams
=====
1      Ted
2      Wally
3      Alice
4      Dilbert
5      Asok
choose team by number: 3

```

*** sorry teams need to be different ***

0 end

1 add result of a match

2 show ranking

9 reset points

your choice: 1

please choose team 1?

teams

=====

1 Ted

2 Wally

3 Alice

4 Dilbert

5 Asok

choose team by number: 3

please choose team 2?

teams

=====

1 Ted

2 Wally

3 Alice

4 Dilbert

5 Asok

choose team by number: 4

input as [points of Alice] : [points of Dilbert]? 5 : 1

0 end

1 add result of a match

2 show ranking

9 reset points

your choice: 2

ranking

=====

points	done matches	name
7	2	Alice
3	1	Ted
2	1	Wally
1	1	Dilbert
0	1	Asok

0 end

1 add result of a match

2 show ranking

9 reset points

your choice: