Team Roster Class with Operator Overloading

By

Jorge Jurado-Garcia

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Week 4&5 lab

Milwaukee School of Engineering

Submitted to:

Professor: Joshua D. Carl, Ph.D

EECS Department

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**Objective**

The objective of this lab is to create two classes Player and Team where the Team is a vector of the object Player named Roster with specific operators detailed by instructor. The Player class will also have operators when wanting to manipulate the players state. In both classes we have presented operator overloading.

**Description**

In my I created extra functions in both objects to complete some operators. The Team Class has a default constructor, parameter constructor, copy constructor, and destructor. For my operator overloading for +=, -=, =, >, <, ==, <=, and >= . Where each operator has a set of manipulate for my private data Roster. Adding a Player in the end of the roster, subtracting a specific player, making a roster to another, less than, greater than, comparison, and less than and equal, and greater than and equal to. Likewise, for the Player class there operator overloading for arithmetic +, -,= and bool operators for >,<,<=,>=,==. Each adding up the stats of the Players health, power, speed, and intelligence and comparing the total. In my Player class I put a range for there stats where a player can have negative stats but can never be greater than 100.

**Conclusions**

The lab was successful and was able to implement all the required classes and overloading their operator. The hardest part about this lab was understand how to use object overloading when using different objects and the use of vectors library in C++. The const Team& means I’m returning a reference const of my object Team. We added the const keyword so that the compiler will not modify the data and give us garbage data. Furthermore, I also found out a pointer to a variable being declared as a const can be assigned to a pointer that is declared as a const and this would be the same for functions as will. Once I was able to figure that out and understand that I can only use a function if that said function is declared to my class. For example, when trying to implement bool operators like this: bool Team:: operator<(const Team& tobj) const{ I never had a function that could have added all of the Players in Teams Roster. So when implemented I tried to read the Roster of object tobj and Team using a for loop by using a get\_health(), get\_etc(). This would not work because THOSE FUNCTIONS BELONG TO THE PLAYER CLASS. So, allow the index of that I am trying to read is as an object Player the Roster Vector itself is part of teams. So, I would get the error because the compile would see that the get\_health() doesn’t belong to teams so it would not exist. The way I went I went around this was by creating a int Team:: Total() for my team that reads the vector like a for-loop and implements a function called Total() from my Player class. This worked properly when having to compare player stats that were integers.

Main code:

/\*

Created: Jorge Jurado-Garcia

Date: 4/10/21

modifications:

\*/

#include <iostream>

#include "Player.h"

#include "Team.h"

#include <vector>

**using** **namespace** std**;**

int main**()**

**{**

Player P1**(**"Bob"**,**80**,**20**,**40**,**10**);**

Player P2**(**"Cat"**,**10**,**10**,**10**,**0**);**

Player P3**(**"Rich"**,**20**,**10**,**50**,**100**);**

Player P4**(**"Steve"**,**0**,**1**,**0**,**1**);**

Player Pc\_add**;**

Player Pc\_sub**;**

Pc\_add **=** P1**+**P2**;**

Pc\_sub **=** P1**-**P2**;**

cout**<<**"Pl stats:"**<<**P1**.**to\_string**()<<**endl**;**

cout**<<**"P2 stats:"**<<**P2**.**to\_string**()<<**endl**;**

cout**<<**"Pc+ stats:"**<<**Pc\_add**.**to\_string**()<<**endl**;**

cout**<<**"Pc- stats"**<<**Pc\_sub**.**to\_string**()<<**endl**;**

cout**<<**"P3 stats"**<<**P3**.**to\_string**()<<**endl**;**

cout**<<**"Making P3 equal to player Pc\_sub"**<<**endl**;**

P3 **=** Pc\_sub**;**

cout**<<**"P3 stats"**<<**P3**.**to\_string**()<<**endl**;**

cout**<<**"checking if P3 is equal to Pc\_sub 1-true and 0-false"**<<**endl**;**

bool x **=** P3**==**Pc\_sub**;**

bool y **=** P1**==**P2**;**

cout**<<**x**<<**endl**;**

cout**<<**"checing if P1 and P2 are equal 1-true 0-false"**<<**endl**;**

cout**<<**y**<<**endl**;**

cout**<<**"compare if P1>P2 1=true 0-false"**<<**endl**;**

bool z **=** P1**>**P2**;**

cout**<<**z**<<**endl**;**

cout**<<**"compare if P1<P2 1=true 0-false"**<<**endl**;**

bool zz **=** P1**<**P2**;**

cout**<<**zz**<<**endl**;**

cout**<<**"comparing if P3<=Pc\_sub 1-true 0-false"**<<**endl**;**

bool zzz **=** P3**<=**Pc\_sub**;**

cout**<<**zzz**<<**endl**;**

cout**<<**"this would the same for P3>=Pc\_sub since they are the same players essentially"**<<**endl**;**

bool zzzz **=** P3**>=**Pc\_sub**;**

cout**<<**zzzz**<<**endl**;**

vector**<**Player**>** Roster1**{**P1**,**P2**,**P3**};**

Team T1**(**Roster1**);**

T1**.**to\_string**();**

cout**<<**"Adding a Player"**<<**endl**;**

T1**+=**P4**;**

T1**.**to\_string**();**

cout**<<**"subtracting a Player"**<<**endl**;**

T1**-=**P1**;**

T1**-=**P2**;**

cout**<<**"Team 1 are:"**<<**endl**;**

T1**.**to\_string**();**

int y2 **=** T1**.**total**();**

cout**<<**y2**<<**endl**;**

cout**<<**"Team 2 are:"**<<**endl**;**

vector**<**Player**>** Roster2**{**P1**,**P2**};**

Team T2**(**Roster2 **);**

T2**.**to\_string**();**

int y3 **=** T2**.**total**();**

cout**<<**y3**<<**endl**;**

bool out**;**

out **=** T2**<**T1**;**

cout**<<**"Team2<Team1 1-true 0-false"**<<**endl**<<**out**<<**endl**;**

bool out2**;**

out2 **=** T2**>**T1**;**

cout**<<**"Team2>Team1 1-true 0-false"**<<**endl**<<**out2**<<**endl**;**

bool out4**;**

out4 **=** T2**==**T1**;**

cout**<<**"is T2==T1 1-true 0-false"**<<**endl**<<**out4**<<**endl**;**

cout**<<**"clearing Team2"**<<**endl**;**

T2**.**clearPlayers**();**

T2**.**to\_string**();**

cout**<<**"Team2 = Team1 is"**<<**endl**;**

T2 **=** T1**;**

T2**.**to\_string**();**

bool out5**;**

out5 **=** T1**==**T2**;**

cout**<<**"is T2==T1? 1-true 0-false"**<<**endl**<<**out5**<<**endl**;**

cout**<<**"comparing teams"**<<**endl**;**

Player P20**(**"Jorge"**,**1**,**1**,**1**,**1**);**

Player P30**(**"Carl"**,**100**,**100**,**100**,**100**);**

Player P50**(**"Pancho"**,**10**,**23**,**10**,**0**);**

Player P60**(**"Crazy\_Carl"**,**100**,**100**,**100**,**100**);**

Player P70**(**"Carl"**,**1**,**1**,**1**,**1**);**

Player P80**(**"Carl"**,**2**,**2**,**2**,**2**);**

vector**<**Player**>** R1**{**P20**,**P30**,**P70**,**P50**,**P60**};**

vector**<**Player**>** R2**{**P20**,**P30**,**P70**,**P50**,**P60**};**

Team T3**(**R1**);**

Team T4**(**R2**);**

cout**<<**"Team 3 size||"**<<**endl**;**

T3**.**to\_string**();**

cout**<<**"Team 4 size||"**<<**endl**;**

T4**.**to\_string**();**

bool out7**;**

out7 **=** T3 **>=** T4**;**

cout**<<**"when T3 >= T4 the answer is 1-true 0-false: "**<<**out7**<<**endl**;**

bool out8**;**

out8 **=** T3 **<=** T4**;**

cout**<<**"when T3 <= T4 the answer is 1-true 0-false: "**<<**out8**<<**endl**;**

cout**<<**"taking out carl(1,1,1,1) and replacing carl(2,2,2,2)"**<<**endl**;**

T4 **-=**P70**;**

T4 **+=** P80**;**

T4**.**to\_string**();**

bool out9**;**

out9 **=** T3**<=**T4**;**

cout**<<**"when T3 <= T4 the answer is 1-true 0-false: "**<<**out9**<<**endl**;**

bool out6**;**

out6 **=** T3 **>=** T4**;**

cout**<<**"when T3 >= T4 the answer is 1-true 0-false: "**<<**out6**<<**endl**;**

**return** 0**;**

**}**

Player Class Definitions

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Created: Jorge Jurado-Garcia

Date: 4/3/21

modifications:

4/11/21 adding name string as a private variable and function called total.

\*/

#ifndef PLAYER\_H\_INCLUDED

#define PLAYER\_H\_INCLUDED

#include <stdio.h>

#include <string>

#include <iostream>

**using** **namespace** std**;**

class Player**{**

private**:**

int health**;**

int power**;**

int speed**;**

int intelligence**;**

string name**;**

public**:**

Player**();** //generic constructor

Player**(**string n**,**int h**,** int p**,** int s**,** int intel**);** //parameter constructor

Player**(**const Player **&**PlayerCopy**);** //copy constructor

virtual **~**Player**();** //destructor

int total**()** const**;**

int get\_health**();**

int get\_power**();**

int get\_speed**();**

int get\_intelligence**();**

string get\_name**()** const**;**

set\_health**(**int h**);**

set\_power**(**int p**);**

set\_speed**(**int s**);**

set\_intelligence**(**int intel**);**

set\_name**(**string n**);**

const Player **operator+(**const Player**&** obj**)** const**;**

const Player **operator-(**const Player**&** obj**)** const**;**

const Player**&** **operator=(**const Player**&** obj**);**

bool **operator==(**const Player**&** obj**)** const**;**

bool **operator<(**const Player**&** obj**)** const**;**

bool **operator>(**const Player**&** obj**)** const**;**

bool **operator<=(**const Player**&** obj**)** const**;**

bool **operator>=(**const Player**&** obj**)** const**;**

string to\_string**()** const**;**

**};**

#endif // PLAYER\_H\_INCLUDED

Player Class Methods

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\* Player\_functions.ccp

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\* Created on: April 3, 2021

\* Author: Jorge Jurado-Garcia

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\* Defines the functions for player.h hile

\*

\*/

#include "Player.h"

#include <stdio.h>

#include <string>

#include <math.h>

#include <iostream>

#include <sstream>

**using** **namespace** std**;**

Player**::**Player**(){**

// cout<<"\*\*\*In default constructor\*\*\*\*"<<endl;

health **=** 0**;**

power **=** 0**;**

speed**=** 0**;**

intelligence **=** 0**;**

name **=** "no name"**;**

**}**

Player**::**Player**(**string n**,**int h**,** int p**,** int s**,** int intel**){**

//cout<<"\*\*\*In parameter constructor\*\*\*"<<endl;

set\_health**(**h**);**

set\_power**(**p**);**

set\_speed**(**s**);**

set\_intelligence**(**intel**);**

set\_name**(**n**);**

**}**

Player**::**Player**(**const Player **&**PlayerCopy**){**

// cout<<"\*\*copy constructor\*\*\*"<<endl;

**this->**health **=** PlayerCopy**.**health**;**

**this->**power **=** PlayerCopy**.**power**;**

**this->**speed **=** PlayerCopy**.**speed**;**

**this** **->**intelligence **=** PlayerCopy**.**intelligence**;**

**this** **->**name **=** PlayerCopy**.**name**;**

**}**

Player**::** **~**Player**(){**

**}**

int Player**::** get\_health**(){**

**return** health**;**

**}**

int Player**::** get\_power**(){**

**return** power**;**

**}**

int Player**::** get\_speed**(){**

**return** speed**;**

**}**

int Player**::** get\_intelligence**(){**

**return** intelligence**;**

**}**

string Player**::** get\_name**()**const**{**

**return** name**;**

**}**

Player**::** set\_health**(**int h**){**

health **=** h**;**

**return** 0**;**

**}**

Player**::** set\_power**(**int p**){**

power **=** p**;**

**return** 0**;**

**}**

Player**::** set\_speed**(**int s**){**

speed **=** s**;**

**return** 0**;**

**}**

Player**::** set\_intelligence**(**int intel**){**

intelligence **=** intel**;**

**return** 0**;**

**}**

Player**::** set\_name**(**string n**){**

name **=** n**;**

**return** 0**;**

**}**

const Player Player**::operator+(**const Player**&** obj**)** const**{**

string super\_name **=** **this->**name**+**"+"**+**obj**.**name**;**

int super\_health **=** **this->**health **+** obj**.**health**;**

int super\_power **=** **this->**power **+** obj**.**power**;**

int super\_speed **=** **this->**speed **+** obj**.**speed**;**

int super\_intelligence **=** **this->**intelligence **+** obj**.**intelligence**;**

**if(** **(** **(**super\_health**)** **||** **(**super\_power**)** **||** **(**super\_speed**)** **||** **(**super\_intelligence**)** **)** **>** 100**){**

super\_health **=** 100**;**

super\_power **=** 100**;**

super\_speed **=** 100**;**

super\_intelligence **=** 100**;**

**}**

Player S1**(**super\_name**,**super\_health**,** super\_power**,** super\_speed**,** super\_intelligence**);**

**return** S1**;**

**}**

const Player Player**::operator-(**const Player**&** obj**)** const**{**

string super\_name **=** **this->**name**+**"-"**+**obj**.**name**;**

int super\_health**,** super\_power**,** super\_speed**,** super\_intelligence**;**

super\_health **=** **this->**health **-** obj**.**health**;**

super\_power **=** **this->**power **-** obj**.**power**;**

super\_speed **=** **this->**speed **-** obj**.**speed**;**

super\_intelligence **=** **this->**intelligence **-** obj**.**intelligence**;**

Player S1**(**super\_name**,**super\_health**,** super\_power**,** super\_speed**,** super\_intelligence**);**

**return** S1**;**

**}**

const Player**&** Player**::** **operator=(**const Player**&** obj**){**

**if(this** **!=** **&**obj**){**

health **=** obj**.**health**;**

power **=** obj**.**power**;**

speed **=** obj**.**speed**;**

intelligence **=** obj**.**intelligence**;**

name **=** obj**.**name**;**

**}**

**return** **\*this;**

**}**

bool Player**::** **operator==(**const Player**&** obj**)** const**{**

//If both the operands are non-zero, then the condition becomes true.

//compates if they are equal to each other

//if false the return value will be zero else one

bool health\_part **=** **this->**health **==** obj**.**health**;**

bool power\_part **=** **this->**power **==** obj**.**power**;**

bool speed\_part **=** **this->**speed **==** obj**.**speed**;**

bool intel\_part **=** **this->**intelligence **==** obj**.**intelligence**;**

bool name\_part **=** **this->**name **==** obj**.**name**;**

//checks for all of the values return true

//if all the same false if different

**return(** name\_part **&&** health\_part **&&** power\_part **&&** speed\_part **&&** intel\_part**);**

**}**

bool Player**::** **operator<(**const Player**&** obj**)** const**{**

float total1 **=** **(this->**total**());**

float total2 **=** **(**obj**.**total**());**

bool outcome **=** total1 **<** total2**;**

**return** outcome**;**

**}**

bool Player**::** **operator>(**const Player**&** obj**)** const**{**

float total1 **=** **this->**total**();**

float total2 **=** obj**.**total**();**

bool outcome **=** total1 **>** total2**;**

**return** outcome**;**

**}**

bool Player**::** **operator<=(**const Player**&** obj**)** const**{**

float total1 **=** **this->**total**();**

float total2 **=** obj**.**total**();**

bool outcome**;**

**if(** **(**total1 **==** total2**)** **||** **(**total1 **<** total2**)** **){**

outcome **=** **true;**

**}**

**else{**

outcome **=** **false;**

**}**

**return** outcome**;**

**}**

bool Player**::** **operator>=(**const Player**&** obj**)** const**{**

float total1 **=** **this->**total**();**

float total2 **=** total**();**

bool outcome**;**

**if(** **(**total1 **==** total2**)** **||** **(**total1 **>** total2**)** **){**

outcome **=** **true;**

**}**

**else{**

outcome **=** **false;**

**}**

**return** outcome**;**

**}**

string Player**::** to\_string**()** const**{**

ostringstream convert\_h**;**

ostringstream convert\_p**;**

ostringstream convert\_s**;**

ostringstream convert\_i**;**

convert\_h **<<** health**;**

convert\_p **<<** power**;**

convert\_s **<<** speed**;**

convert\_i **<<** intelligence**;**

string output **=** name**+**"||"**+**"Health:" **+** convert\_h**.**str**()** **+** " Power:" **+** convert\_p**.**str**();**

output **=** output **+** " Speed:" **+** convert\_s**.**str**()** **+** " Intel:" **+** convert\_i**.**str**();**

**return** output**;**

**}**

int Player**::** total**()** const**{**

int totals **=** **this->**health**+this->**speed**+this->**power**+this->**intelligence**;**

**return** totals**;**

**}**

Player Class Definitions

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Created: Jorge Jurado-Garcia

Date: 4/3/21

modifications:

4/8/21 create code for operator of += -= =

4/11/21 creating the functions needed for bool operators

\*/

#ifndef TEAM\_H\_INCLUDED

#define TEAM\_H\_INCLUDED

#include <stdio.h>

#include <string>

#include <vector>

#include <iostream>

#include "Player.h"

**using** **namespace** std**;**

class Team**{**

private**:**

vector**<**Player**>** Roster**;**

public**:**

string get\_name**()** const**;**

int total**()**const**;**

Team**();** //default constructor

Team**(**vector**<**Player**>** NewRoster**);** //creating a new roster

Team**(**Team **&**otherTeamCopy**);** //copy constructor)

virtual **~**Team**();** //destructor

//will need set and get functions for roaster;

set\_Roster**(**vector**<**Player**>** R**);**

vector**<**Player**>** get\_Roster**();**

const Team**&** **operator+=(**const Player**&** Ply**);**

const Team**&** **operator-=(**const Player**&** Ply**);**

const Team**&** **operator=(**const Team**&** tobj**);**

bool **operator==(**const Team**&** tobj**)** const**;**

bool **operator<(**const Team**&** tobj**)** const**;**

bool **operator>(**const Team**&** tobj**)** const**;**

bool **operator<=(**const Team**&** tobj**)** const**;**

bool **operator>=(**const Team**&** tobj**)** const**;**

clearPlayers**();**

to\_string**()** const**;**

**};**

#endif // TEAM\_H\_INCLUDED

Player Class Methods

/\*

\* Team\_functions.ccp

\* Created on: April 3, 2021

\* Author: Jorge Jurado-Garcia

\* Defines the functions for Team.h hile

\*/

#include "Team.h"

#include "Player.h"

#include <stdio.h>

#include <string>

#include <vector>

#include <math.h>

#include <iostream>

#include <sstream>

**using** **namespace** std**;**

string Team**::** get\_name**()** const**{**

string Name**;**

int sizel **=** Roster**.**size**();**

**for(**int i**=**0**;** i**<** sizel**;** **++**i**){**

Name **=** Name**+**Roster**[**i**].**get\_name**();**

**}**

**return** Name**;**

**}**

int Team**::** total**()**const**{**

int total **=** 0**;**

int sizel **=** Roster**.**size**();**

**for(**int i**=**0**;** i**<** sizel**;** **++**i**){**

total **=** Roster**[**i**].**total**()+**total**;**

**}**

**return** total**;**

**}**

Team**::**Team**(){**

cout**<<**"\*\*\*In default constructor\*\*\*\*"**<<**endl**;**

//need to create a roster of zero players

vector**<**Player**>** Roster**(**0**);**

**}**

Team**::**Team**(**vector**<**Player**>** NewRoster**){**

//here we are given a vector of player from main

//creating a team for them

cout**<<**"\*\*\*In parameter constructor\*\*\*"**<<**endl**;**

set\_Roster**(** NewRoster **);**

**}**

Team**::**Team**(**Team **&**otherTeamCopy**){**

//going to have to have a Team called otherTeamcopy and that will have

//a vector full of players

cout**<<**"\*\*copy constructor\*\*\*"**<<**endl**;**

**this->**Roster **=** otherTeamCopy**.**Roster**;**

**}**

Team**::** set\_Roster**(**vector**<**Player**>** R**){**

//sizing the roster vector to the size of R vector

Roster**.**resize**(**R**.**size**());**

**for(**unsigned int i**=**0**;** i **<** R**.**size**();** i**++){**

//items in vec2 will be in roster copy

Roster**[**i**]** **=** R**[**i**];**

**}**

**return** 0**;**

**}**

vector**<**Player**>** Team**::**get\_Roster**(){**

//return the vector of

**return** Roster**;**

**}**

Team**::** **~**Team**(){**

**}**

const Team**&** Team**::operator+=(**const Player**&** Ply**){**

**this->**Roster**.**push\_back**(**Ply**);**

**return** **\*this;**

**}**

const Team**&** Team**::** **operator-=(**const Player**&** Ply**){**

**for(**auto i **=** Roster**.**begin**();** i **!=** Roster**.**end**();** **++**i**){**

**if(\***i **==** Ply**){**

**this->**Roster**.**erase**(**i**);**

**}**

**}**

cout**<<**"Size of Vector after removal:"**<<**Roster**.**size**()<<**endl**;**

**return** **\*this;**

**}**

const Team**&** Team**::** **operator=(**const Team**&** tobj**){**

**if(this** **!=** **&**tobj**){**

Roster **=** tobj**.**Roster**;**

**}**

**return** **\*this;**

**}**

Team**::** clearPlayers**(){**

Roster**.**clear**();**

**return** 0**;**

**}**

Team**::** to\_string**()** const**{**

vector**<**Player**>::**const\_iterator iter**;**

**for(**iter **=** Roster**.**begin**();** iter **!=** Roster**.**end**();** iter**++){**

cout**<<**"\t"**<<(\***iter**).**to\_string**()<<**endl**;**

**}**

**return** 0**;**

**}**

bool Team**::** **operator<(**const Team**&** tobj**)** const**{**

int total2 **=** tobj**.**total**();**

int total1 **=** **this->**total**();**

**if(**total1 **<** total2**){**

**return** **true;**

**}**

**else{**

**return** **false;**

**}**

**}**

bool Team**::** **operator>(**const Team**&** tobj**)** const**{**

int total2 **=** tobj**.**total**();**

int total1 **=** **this->**total**();**

**if(**total1 **>** total2**){**

**return** **true;**

**}**

**else{**

**return** **false;**

**}**

**}**

bool Team**::** **operator==(**const Team**&** tobj**)** const**{**

bool out**;**

int size1 **=** **this->**Roster**.**size**();**

int size2 **=** tobj**.**Roster**.**size**();**

**if(**size1 **==** size2**){**

**for(**int i**=**0**;** i**<** size1**;** **++**i**){**

**if(this->**Roster**[**i**]==** tobj**.**Roster**[**i**]){**

//if the player are the same then do nothing;

out **=** **true;**

**}**

**else{**

**return** **false;**

**}**

**}**

**return** out**;**

**}**

**else{**

**return** **false;**

**}**

**}**

bool Team**::** **operator<=(**const Team**&** tobj**)** const**{**

string name1 **=** **this->**get\_name**();**

string name2 **=** tobj**.**get\_name**();**

int total1 **=** **this->**total**();**

int total2 **=** tobj**.**total**();**

**if(** **(** **(**total1 **<** total2**)** **||** **(**total1**==**total2**)** **)** **&&** **(**name1**.**compare**(**name2**)==**0**)** **){**

**return** **true;**

**}**

**else** **if((**total1 **<** total2**)** **||** **(**total1**==**total2**)** **){**

**return** **true;**

**}**

**else{**

**return** **false;**

**}**

**}**

bool Team**::** **operator>=(**const Team**&** tobj**)** const**{**

string name1 **=** **this->**get\_name**();**

string name2 **=** tobj**.**get\_name**();**

int total1 **=** **this->**total**();**

int total2 **=** tobj**.**total**();**

**if(** **(** **(**total1 **>** total2**)** **||** **(**total1**==**total2**)** **)** **&&** **(**name1**.**compare**(**name2**)==**0**)** **){**

**return** **true;**

**}**

**else** **if((**total1 **>** total2**)** **||** **(**total1**==**total2**)** **){**

**return** **true;**

**}**

**else{**

**return** **false;**

**}**

**}**

Console Result:

Pl stats:Bob||Health:80 Power:20 Speed:40 Intel:10

P2 stats:Cat||Health:10 Power:10 Speed:10 Intel:0

Pc+ stats:Bob+Cat||Health:90 Power:30 Speed:50 Intel:10

Pc- statsBob-Cat||Health:70 Power:10 Speed:30 Intel:10

P3 statsRich||Health:20 Power:10 Speed:50 Intel:100

Making P3 equal to player Pc\_sub

P3 statsBob-Cat||Health:70 Power:10 Speed:30 Intel:10

checking if P3 is equal to Pc\_sub 1-true and 0-false

1

checing if P1 and P2 are equal 1-true 0-false

0

compare if P1>P2 1=true 0-false

1

compare if P1<P2 1=true 0-false

0

comparing if P3<=Pc\_sub 1-true 0-false

1

this would the same for P3>=Pc\_sub since they are the same players essentially

1

\*\*\*In parameter constructor\*\*\*

Bob||Health:80 Power:20 Speed:40 Intel:10

Cat||Health:10 Power:10 Speed:10 Intel:0

Bob-Cat||Health:70 Power:10 Speed:30 Intel:10

Adding a Player

Bob||Health:80 Power:20 Speed:40 Intel:10

Cat||Health:10 Power:10 Speed:10 Intel:0

Bob-Cat||Health:70 Power:10 Speed:30 Intel:10

Steve||Health:0 Power:1 Speed:0 Intel:1

subtracting a Player

Size of Vector after removal:3

Size of Vector after removal:2

Team 1 are:

Bob-Cat||Health:70 Power:10 Speed:30 Intel:10

Steve||Health:0 Power:1 Speed:0 Intel:1

122

Team 2 are:

\*\*\*In parameter constructor\*\*\*

Bob||Health:80 Power:20 Speed:40 Intel:10

Cat||Health:10 Power:10 Speed:10 Intel:0

180

Team2<Team1 1-true 0-false

0

Team2>Team1 1-true 0-false

1

is T2==T1 1-true 0-false

0

clearing Team2

Team2 = Team1 is

Bob-Cat||Health:70 Power:10 Speed:30 Intel:10

Steve||Health:0 Power:1 Speed:0 Intel:1

is T2==T1? 1-true 0-false

1

comparing teams

\*\*\*In parameter constructor\*\*\*

\*\*\*In parameter constructor\*\*\*

Team 3 size||

Jorge||Health:1 Power:1 Speed:1 Intel:1

Carl||Health:100 Power:100 Speed:100 Intel:100

Carl||Health:1 Power:1 Speed:1 Intel:1

Pancho||Health:10 Power:23 Speed:10 Intel:0

Crazy\_Carl||Health:100 Power:100 Speed:100 Intel:100

Team 4 size||

Jorge||Health:1 Power:1 Speed:1 Intel:1

Carl||Health:100 Power:100 Speed:100 Intel:100

Carl||Health:1 Power:1 Speed:1 Intel:1

Pancho||Health:10 Power:23 Speed:10 Intel:0

Crazy\_Carl||Health:100 Power:100 Speed:100 Intel:100

when T3 >= T4 the answer is 1-true 0-false: 1

when T3 <= T4 the answer is 1-true 0-false: 1

taking out carl(1,1,1,1) and replacing carl(2,2,2,2)

Size of Vector after removal:4

Jorge||Health:1 Power:1 Speed:1 Intel:1

Carl||Health:100 Power:100 Speed:100 Intel:100

Pancho||Health:10 Power:23 Speed:10 Intel:0

Crazy\_Carl||Health:100 Power:100 Speed:100 Intel:100

Carl||Health:2 Power:2 Speed:2 Intel:2

when T3 <= T4 the answer is 1-true 0-false: 1

when T3 >= T4 the answer is 1-true 0-false: 0

Process returned 0 (0x0) execution time : 0.089 s

Press any key to continue.

