

# Fighting Arena

## Preparation

Download the skeleton provided in Judge. **Do not** change the **StartUp** class or its **namespace**.

## Problem description

Your task is to create an arena which stores gladiators by creating the classes described below.

First, write a C# class **Weapon** with the following properties:

- **Size: int**
- **Solidity: int**
- **Sharpness: int**

The class **constructor** should receive **size, solidity and sharpness**.

Next, write a C# class **Stat** with the following properties:

- **Strength: int**
- **Flexibility: int**
- **Agility: int**
- **Skills: int**
- **Intelligence: int**

The class **constructor** should receive **strength, flexibility, agility, skills and intelligence**.

Next, write a C# class **Gladiator** with the following properties and methods:

- **Name: string**
- **Stat: Stat**
- **Weapon: Weapon**
- **GetTotalPower(): int** - return the sum of the stat properties plus the sum of the weapon properties.
- **GetWeaponPower(): int** - return the sum of the weapon properties.
- **GetStatPower(): int** - return the sum of the stat properties.

The class **constructor** should receive **name, stat and weapon** and **override ToString()** in the following format:

"[Gladiator name] - [Gladiator total power]"

" Weapon Power: [Gladiator weapon power]"

" Stat Power: [Gladiator stat power]"

Write a C# class **Arena** that has **gladiators** (a collection which stores the class **Gladiator**).

```
public class Arena
{
    // TODO: implement this class
}
```

The class **constructor** should initialize the **gladiators** with a new instance of the collection. Implement the following features:

- Field **gladiators** – **collection** that holds added gladiators
- **Property Name** - string
- Method **Add(Gladiator gladiator)** – adds an gladiator to the arena.
- Method **Remove(string name)** – removes an gladiator by given name.
- Method **GetGladiatorWithHighestStatPower()** – returns the Gladiator which has the highest stat.
- Method **GetGladiatorWithHighestWeaponPower()** – returns the Gladiator which poses the weapon with the highest power.
- Method **GetGladiatorWithHighestTotalPower()** – returns the Gladiator which has the highest total power.
- Getter **Count** – returns the number of stored heroes.
- Override **ToString()** – by the format below.  
"[Arena name] - [count of gladiators] gladiators are participating."

## Constraints

- The names of the gladiators will be always unique.
- The weapons and the stat properties of the gladiators will always be with positive values.
- The weapon power, stat power and total power of the gladiators will always be different.
- You will always have a gladiator with the highest stat, weapon and total power.

## Examples

This is an example how the **Arena** class is **intended to be used**.

### Sample code usage

```
//Creates arena
Arena arena = new Arena("Armeec");

//Creates stats
Stat firstGladiatorStat = new Stat(20, 25, 35, 14, 48);
Stat secondGladiatorStat = new Stat(40, 40, 40, 40, 40);
Stat thirdGladiatorStat = new Stat(20, 25, 35, 14, 48);

//Creates weapons
Weapon firstGladiatorWeapon = new Weapon(5, 28, 100);
Weapon secondGladiatorWeapon = new Weapon(5, 28, 100);
Weapon thirdGladiatorWeapon = new Weapon(50, 50, 50);

//Creates gladiators
Gladiator firstGladiator = new Gladiator("Stoyan", firstGladiatorStat, firstGladiatorWeapon);
Gladiator secondGladiator = new Gladiator("Pesho", secondGladiatorStat, secondGladiatorWeapon);
Gladiator thirdGladiator = new Gladiator("Gosho", thirdGladiatorStat, thirdGladiatorWeapon);

//Adds gladiators to arena
arena.Add(firstGladiator);
arena.Add(secondGladiator);
arena.Add(thirdGladiator);

//Prints gladiators count at the arena
Console.WriteLine(arena.Count);

//Gets strongest gladiator and print him
Gladiator strongestGladiator = arena.GetGladiatorWithHighestTotalPower();
Console.WriteLine(strongestGladiator);
```

```
//Gets gladiator with the strongest weapon and print him
Gladiator bestWeaponGladiator = arena.GetGladitorWithHighestWeaponPower();
Console.WriteLine(bestWeaponGladiator);

//Gets gladiator with the strongest stat and print him
Gladiator bestStatGladiator = arena.GetGladitorWithHighestStatPower();
Console.WriteLine(bestStatGladiator);

//Removes gladiator
arena.Remove("Gosho");

//Prints gladiators count at the arena
Console.WriteLine(arena.Count);

//Prints the arena
Console.WriteLine(arena);
```

## Submission

Zip all the files in the project folder except **bin** and **obj** folders