### Submission: See course shell for how and when to submit

You will practice using Properties and iterating a list.

# The MedalColor Enum

### Code the MedalColor enum below:

This enum consist of 3 constants which does not require any special treatment (such as setting any Flags attribute).

|  |
| --- |
| **MedalColor**  enum |
| **Constants** |
| Bronze  Silver  Gold |

# The Medal Class

### Code the Medal class below:

This class comprise of five properties, a constructor and a ToString() method. All the properties are public readonly.

|  |
| --- |
| **Medal**  Class |
| **Properties** |
| + «property setter absent» Name : **string**  + «property setter absent» TheEvent : **string**  + «property setter absent» Color : **MedalColor**  + «property setter absent» Year : **int**  + «property setter absent» IsRecord : **bool** |
| **Methods** |
| + «constructor» Medal(  name : **string**,  theEvent : **string**,  color : **string**,  year : **int**,  isRecord : **bool**)  + ToString() : **string** |

## Description of class members

##### Properties:

All the properties have public getter and the setter is absent making them all readonly properties

**Name** – this is a string representing the holder of this object. The getter is public and the setter is absent.

**TheEvent** – this is a string representing the event of this object. (Event is a reserved word in C#). The getter is public and the setter is absent.

**Color** – this is an enum representing the color of this object The getter is public and the setter is absent.

**Year** – this is an integer representing the year of this object. The getter is public and the setter is absent.

**IsRecord** – this is a bool indicating if this was a record setting event. The getter is public and the setter is absent.

##### Fields:

No fields are defined in this class

##### Constructor:

**public Medal(string name, string theEvent, MedalColor color, int year, bool isRecord)** – This public constructor takes five arguments: a string representing the name, a string representing the event, a string representing the type of medal, an integer representing the year and a bool indicating if a World Record or Olympic Record was set in this event. It assigns the arguments to the appropriate fields.

##### Methods:

**public override string ToString()** – This public method overrides the ToString of the object class. It does not take any argument and returns a string representation of the object. You may return a string in the format “2012 - Boxing(R) Narendra(Gold)”.

If the event is not a record event then the “(R)” should not be present in the output. The ToString() method is the best place to implement this feature.

### Test Harness

Insert the following code statements in the **Main()** method of your Program.cs file:

//create a medal object

Medal m1 = new Medal("Horace Gwynne", "Boxing", MedalColor.Gold, 2012, true);

//print the object

Console.WriteLine(m1);

//print only the name of the medal holder

Console.WriteLine(m1.Name);

//create another object

Medal m2 = new Medal("Michael Phelps", "Swimming", MedalColor.Gold, 2012, false);

//print the updated m2

Console.WriteLine(m2);

//create a list to store the medal objects

List<Medal> medals = new List<Medal>(){ m1, m2};

medals.Add(new Medal("Ryan Cochrane", "Swimming", MedalColor.Silver, 2012, false));

medals.Add(new Medal("Adam van Koeverden", "Canoeing", MedalColor.Silver, 2012, false));

medals.Add(new Medal("Rosie MacLennan", "Gymnastics", MedalColor.Gold, 2012, false));

medals.Add(new Medal("Christine Girard", "Weightlifting", MedalColor.Bronze, 2012, false));

medals.Add(new Medal("Charles Hamelin", "Short Track", MedalColor.Gold, 2014, true));

medals.Add(new Medal("Alexandre Bilodeau", "Freestyle skiing", MedalColor.Gold, 2012, true));

medals.Add(new Medal("Jennifer Jones", "Curling", MedalColor.Gold, 2014, false));

medals.Add(new Medal("Charle Cournoyer", "Short Track", MedalColor.Bronze, 2014, false));

medals.Add(new Medal("Mark McMorris", "Snowboarding", MedalColor.Bronze, 2014, false));

medals.Add(new Medal("Sidney Crosby ", "Ice Hockey", MedalColor.Gold, 2014, false));

medals.Add(new Medal("Brad Jacobs", "Curling", MedalColor.Gold, 2014, false));

medals.Add(new Medal("Ryan Fry", "Curling", MedalColor.Gold, 2014, false));

medals.Add(new Medal("Antoine Valois-Fortier", "Judo", MedalColor.Bronze, 2012, false));

medals.Add(new Medal("Brent Hayden", "Swimming", MedalColor.Bronze, 2012, false));

//prints a numbered list of 16 medals.

Console.WriteLine("\n\nAll 16 medals");

//prints a numbered list of 16 names (ONLY)

Console.WriteLine("\n\nAll 16 names");

//prints a numbered list of 9 gold medals

Console.WriteLine("\n\nAll 9 gold medals");

//prints a numbered list of 9 medals in 2012

Console.WriteLine("\n\nAll 9 medals");

//prints a numbered list of 4 gold medals in 2012

Console.WriteLine("\n\nAll 4 gold medals");

//prints a numbered list of 3 world record medals

Console.WriteLine("\n\nAll 3 records");

//saving all the medal to file Medals.txt

Console.WriteLine("\n\nSaving to file");

// [for] and [foreach] can be used in all below question (Just Chosen one)

Console.WriteLine("\n----- Q1. Prints a numbered list of all athletes 16 medals -----");

for(int i = 0; i < medals.Count; i++)

{

Console.WriteLine(medals[i]);

}

// [for] and [foreach] can be used in all below question (Just Chosen one)

Console.WriteLine("\n----- Q2. Prints a numbered list of 16 athlete's names -----");

foreach(Medal x in medals)

{

Console.WriteLine(x.Name);

}

// [for] and [foreach] can be used in all below question (Just Chosen one)

Console.WriteLine("\n----- Q3. Prints a numbered list of 9 athletes who got gold medals -----");

for(int i = 0; i < medals.Count; i++)

{

if(medals[i].Color == "Gold")

{

Console.WriteLine(medals[i]);

}

}

// [for] and [foreach] can be used in all below question (Just Chosen one)

Console.WriteLine("\n----- Q4. Prints a numbered list of 9 athletes with medals in 2012 -----");

foreach(Medal x in medals)

{

if(x.Year == 2012)

{

Console.WriteLine(x);

}

}

// [for] and [foreach] can be used in all below question (Just Chosen one)

Console.WriteLine("\n----- Q5. Prints a numbered athletes list of 3 world record medals -----");

for(int i = 0; i < medals.Count; i++)

{

if(medals[i].IsRecord == true)

{

Console.WriteLine(medals[i]);

}

}