



# Thank you for participating in our programming challenge!

Please review the requirements and respond as directed below.

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Hi and welcome to the SDS Inn. As you know, we are a small inn with a prime location in a prominent city ran by a friendly innkeeper named Allison. We also buy and sell only the finest goods.

Unfortunately, our goods are constantly degrading in quality as they approach their sell by date. We have a system in place that updates our inventory for us. It was developed by a no-nonsense guy named Bob, who has moved on to new adventures.

**Your task is to add the new feature to our system so that we can begin selling a new category of items.**

First an introduction to our system:

- All items have a *Sell-In* value which denotes the number of days we have to sell the item.
- All items have a *Quality* value which denotes how valuable the item is.
- At the end of each day our system adjusts both values for every item.

Pretty simple, right? Well this is where it gets interesting:

- Once the Sell-In date has passed, Quality degrades twice as fast.
- The Quality of an item is never negative.
- "Aged Brie" actually increases in Quality as it ages.
- The Quality of an item is never more than 50.
- "Sulfuras", being a legendary item, never has to be sold or decreases in Quality.
- "Backstage passes", like aged brie, increases in Quality as it's Sell-In value approaches; Quality increases by 2 when there are 10 days or less and by 3 when there are 5 days or less but Quality drops to 0 after the concert.

We have recently signed a supplier of conjured items. This requires an update to our system:

- "Conjured" items degrade in Quality twice as fast as normal items

Feel free to make any changes to the *UpdateQuality* method and add any new code as long as everything still works correctly. However, **do not alter the Item class or Items property** as those belong to another team that doesn't believe in shared code ownership (you can make the *UpdateQuality* method and Items property static if you like. We'll cover for you).



Just for clarification, an item can never have its Quality increase above 50, however "Sulfuras" is a legendary item and as such its Quality is 80 and it never alters.

**You may solve this problem in any language you choose, but please return all of the files you created to build and test your solution. Send your solution or a link to your solution to [sds@sds.io](mailto:sds@sds.io).**

**If you have any questions, please feel free to call or Email us and we will clarify the problem. We can be reached at (937) 886-9405 or [sds@sds.io](mailto:sds@sds.io).**

**GOOD LUCK!**

```
void UpdateQuality()
{
    for (var i = 0; i < Items.Count; i++)
    {
        if (Items[i].Name != "Aged Brie" && Items[i].Name != "Backstage Passes")
        {
            if (Items[i].Quality > 0)
            {
                if (Items[i].Name != "Sulfuras")
                {
                    Items[i].Quality = Items[i].Quality - 1;
                }
            }
        }
        else
        {
            if (Items[i].Quality < 50)
            {
                Items[i].Quality = Items[i].Quality + 1;

                if (Items[i].Name == "Backstage Passes")
                {
                    if (Items[i].SellIn < 11)
                    {
                        if (Items[i].Quality < 50)
                        {
                            Items[i].Quality = Items[i].Quality + 1;
                        }
                    }

                    if (Items[i].SellIn < 6)
                    {
                        if (Items[i].Quality < 50)
                        {
                            Items[i].Quality = Items[i].Quality + 1;
                        }
                    }
                }
            }
        }
    }
}
```

```
    }  
  }  
}  
  
if (Items[i].Name != "Sulfuras")  
{  
    Items[i].SellIn = Items[i].SellIn - 1;  
}  
  
if (Items[i].SellIn < 0)  
{  
    if (Items[i].Name != "Aged Brie")  
    {  
        if (Items[i].Name != "Backstage passes")  
        {  
            if (Items[i].Quality > 0)  
            {  
                if (Items[i].Name != "Sulfuras")  
                {  
                    Items[i].Quality = Items[i].Quality - 1;  
                }  
            }  
        }  
        else  
        {  
            Items[i].Quality = Items[i].Quality - Items[i].Quality;  
        }  
    }  
    else  
    {  
        if (Items[i].Quality < 50)  
        {  
            Items[i].Quality = Items[i].Quality + 1;  
        }  
    }  
}  
}
```

```
}
```

```
IList<Item> Items = new List<Item>
{
    new Item { Name = "+5 Dexterity Vest", SellIn = 10, Quality = 20 },
    new Item { Name = "Aged Brie", SellIn = 2, Quality = 0 },
    new Item { Name = "Elixir of the Mongoose", SellIn = 5, Quality = 7 },
    new Item { Name = "Sulfuras", SellIn = 0, Quality = 80 },
    new Item { Name = "Backstage passes", SellIn = 15, Quality = 20 },
    new Item { Name = "Conjured", SellIn = 3, Quality = 6 }
};

class Item
{
    public string Name { get; set; }
    public int SellIn { get; set; }
    public int Quality { get; set; }
}
```