Homework 2: Christmas Tree

Name	Cost
Star	4
Ruffles	1
Balls red	1
Balls blue	2
Balls silver	3
Ribbons	2
Lights	5
L.E.D's	10

Name	Cost
Fraser Fir	12
Douglas Fir	15
Balsam Fir	5
Colorado Blue Spruce	20

Ho Ho Ho! Less than 11 weeks till Christmas! Time to get and decorate a Christmas tree!

Implement a software system that allows you to calculate the price of any tree plus any combination of decorations. The system must be easily extendable in the sense that whenever new decorations are added in the store you will have to at most add one class.

An important requirement is that a tree can only have one star. When a user wants to decorate a tree with a star with a new star you must print a warning that the tree already has a star and not add the price of a star to tree. Users must be able to continue decorating their tree if they add another star to it:

```
Tree mytree = new BlueSpruce();
mytree = new Star(mytree);
mytree = new Ruffles(mytree);
mytree = new Star(mytree);
mytree = new Ruffles(mytree);
printtree(mytree);
```

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should lead to:

Tree already has a star!
Blue spruce tree decorated with,a Star, Ruffles, Ruffles costs $26.0

Assignment 1: Draw a class diagram for your solution using whatever means necessary.

Assignment 2: Implement this Christmas Tree software system in Java using the Decorator design pattern. The driver should just demonstrate that the classes work as expected.