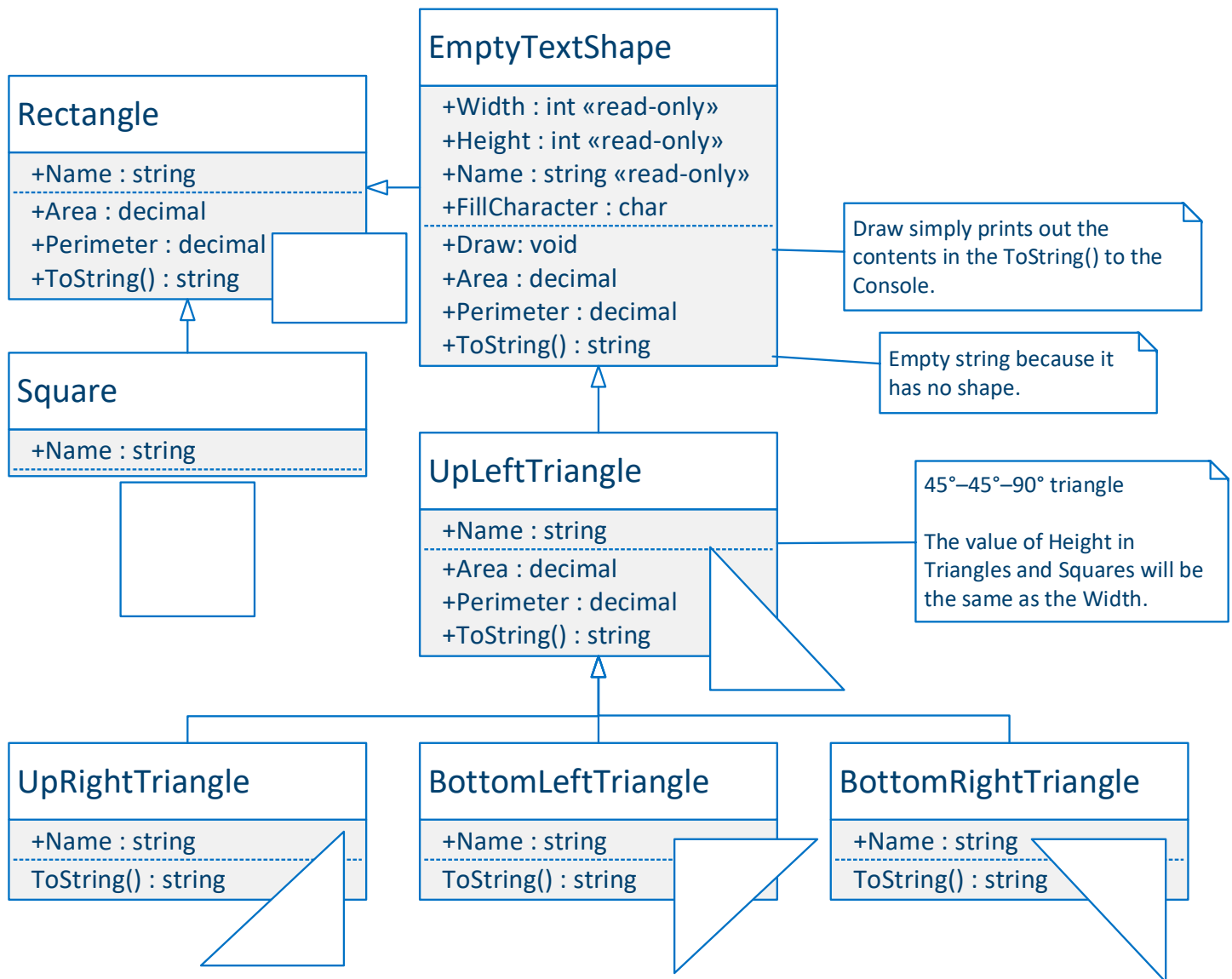


Shape Hierarchy



The class diagram is given in the figure. The ones specified by read-only cannot be changed from outside. However, they are all public members. The shapes are shown next to each class. The **Area** and the **Perimeter** will calculate the area and the perimeter of the shape. **EmptyTextShape** has both of these values to be 0 in addition to an empty string in the **ToString()** method. The **ToString()** method overrides will return the actual string of the shape, starting from the beginning and using the character in the **FillCharacter**, which can be changed anytime and has a default value of asterisk '*'. The **Draw** method will simply print them to Console app. The area and the perimeter will calculate the area. The **Name** will simply return the class name with spaces instead of camel case in all lower cases (e.g. "bottom right triangle", or "empty shape" for the base class). With OOP, make sure you've learned how to reuse your codes (logic in constructors, methods, and properties), but I'm not going to enforce it. Learn how to perform commonality analysis.

For the triangles, we will use the same width and the same for the height so that they will be 45-45-90 right triangles.