# Thermometer Problem

Design and implement (in C#) a thermometer class or classes that reads the temperature of some external source.

The thermometer needs to be able to provide temperature in both Fahrenheit and Celsius.  It must be possible for callers of the class(es) to define arbitrary thresholds such as **freezing** and **boiling** at which the thermometer class will inform the appropriate callers that a specific threshold has been reached.  Note that callers of the class may not want to be repeatedly informed that a given threshold has been reached if the temperature is fluctuating around the threshold point.  For example, consider the following temperature readings from the external source:

*1.5 C*

*1.0 C*

*0.5 C*

**0.0 C**

*-0.5 C*

**0.0 C**

*-0.5 C*

**0.0 C**

*0.5 C*

**0.0 C**

Some callers may only want to be informed that the temperature has reached 0° C once because they consider fluctuations of +/- 0.5° C insignificant.

It may also be important for some callers to be informed that a threshold has been reached only if the threshold was reached from a certain direction.  For example, some callers may only care about a freezing point threshold if the previous temperature was above freezing (i.e. they only care about the threshold if it occurred while the temperature was dropping).