```
/**
 * A Pencil has a (positive) length and color.  A pencil can change its color.
 * It can also decrease its length as a result of being sharpened.
 *
 * @mathmodel c : Colors, where c is the color of the pencil <br />
 *            s : int, where s is the length of the pencil
 * @initially Pencil(Colors color, int length) <br />
 *     ensures c = color and
 *             length > 0 ==> s = length
 * @constraint s > 0
 */
public interface Pencil {

        /**
         * Returns a human-readable representation of the pencil.
         * Both the color and the length are included.
         *
         * @return String describing c and s
         */
        public String toString();

        /**
         * Sets the pencil color.
         *
         * @param newColor is any valid color
         * @alters c
         * @ensures c = newColor
         */
        public void setColor(Colors newColor);

        /**
         * Sharpens the pencil by grinding it down.  Sharpening can never
         * increase the length of the pencil.  The requested length is
         * removed, if possible.
         *
         * @param remove amount by which pencil will be shortened
         * @requires remove >= 0
         * @alters s
         * @ensures remove < #s ==> s + remove = #s and <br />
         *          s <= #s
         */
        public void sharpen(int remove);
}
```