```
// joi/5/shapes/Line.java
//
//
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/**
 * A Line has a length and a paintChar used to paint
 * itself on a Screen.
 *
 * Subclasses of this abstract class specify the direction
 * of the Line.
 *
 * @version 5
 */

public abstract class Line
{
    protected int  length;      // length in (character) pixels.
    protected char paintChar;   // character used for painting.

    /**
     * Construct a Line.
     *
     * @param length length in (character) pixels.
     * @param paintChar character used for painting this Line.
     */

    protected Line( int length, char paintChar )
    {
        this.length    = length;
        this.paintChar = paintChar;
    }

    /**
     * Get the length of this line.
     *
     * @return the length in (character) pixels.
     */

    public int getLength()
    {
        return length;
    }

    /**
     * Set the length of this line.
     *
     * @param length the new length in (character) pixels.
     */

    public void setLength( int length )
    {
        this.length = length;
    }

    /**
```



```
     * Get the paintChar of this Line.
     *
     * @return the paintChar.
     */

    public char getPaintChar()
    {
        return paintChar;
    }

    /**
     * Set the paintChar of this Line.
     *
     * @param paintChar the new paintChar.
     */

    public void setPaintChar( char paintChar )
    {
        this.paintChar = paintChar;
    }

    /**
     * Paint this Line on Screen s at position (x,y).
     *
     * @param s the Screen on which this Line is to be painted.
     * @param x the x position for the line.
     * @param y the y position for the line.
     */

    public abstract void paintOn( Screen s, int x, int y );

    /**
     * Paint this Line on Screen s at position (0,0).
     *
     * @param s the Screen on which this Line is to be painted.
     */

    public void paintOn( Screen s )
    {
        paintOn( s, 0, 0 );
    }
}
```