Write a program that bounces a blue ball inside a JPanel. The ball should begin moving with a mousePressed event. When the ball hits the edge of the JPanel, it should bounce off the edge and continue in the opposite direction. The ball should be updated using a Runnable.

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import javax.swing.\*;

import java.awt.\*;

import java.awt.event.\*;

public class Ball extends JApplet implements Runnable, MouseListener {

private Thread blueBall;

private boolean xUp, yUp, bouncing;

private int x, y, xDx, yDy;

public void init()

{

xUp = false;

yUp = false;

xDx = 1;

yDy = 1;

addMouseListener( this );

bouncing = false;

}

public void mousePressed( MouseEvent e )

{

if ( blueBall == null ) {

x = e.getX();

y = e.getY();

blueBall = new Thread( this );

bouncing = true;

blueBall.start();

}

}

public void stop()

{

if ( blueBall != null ) {

blueBall = null;

}

}

public void paint( Graphics g )

{

if ( bouncing ) {

g.setColor( Color.blue );

g.fillOval( x, y, 10, 10 );

}

}

public void run()

{

while ( true ) {

try {

blueBall.sleep( 100 );

} catch ( Exception e ) {

System.err.println( "Exception: " + e.toString() );

}

if ( xUp == true )

x += xDx;

else

x -= xDx;

if ( yUp == true )

y += yDy;

else

y -= yDy;

if ( y <= 0 ) {

yUp = true;

yDy = ( int ) ( Math.random() \* 5 + 2 );

} else if ( y >= 190 ) {

yDy = ( int ) ( Math.random() \* 5 + 2 );

yUp = false;

}

if ( x <= 0 ) {

xUp = true;

xDx = ( int ) ( Math.random() \* 5 + 2 );

} else if ( x >= 190 ) {

xUp = false;

xDx = ( int ) ( Math.random() \* 5 + 2 );

}

repaint();

} // end of while

} // end of run method

public void mouseExited( MouseEvent e ) {}

public void mouseClicked( MouseEvent e ) {}

public void mouseReleased( MouseEvent e ) {}

public void mouseEntered( MouseEvent e ) {}

}