_01_CreandoYEscribiendoEnMarcos.java

```java
package Graficos;

import java.awt.*;
import javax.swing.*;

public class _01_CreandoYEscribiendoEnMarcos {

    public static void main(String[] args) {
        Marco ventana = new Marco();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco extends JFrame {
    public Marco() {
        Dimension pantalla = Toolkit.getDefaultToolkit().getScreenSize();
        int ancho = (int) pantalla.getWidth();
        int alto = (int) pantalla.getHeight();
        setBounds(ancho/3, alto/3, ancho/3, alto/3);
        setTitle("  Mi Ventana Java");
        ImageIcon icono = new ImageIcon("src/Graficos/images/icon.png");
        setIconImage(icono.getImage());
        Lamina laminaObj = new Lamina();
        add(laminaObj);
        setVisible(true);
    }
}

class Lamina extends JPanel {
    public void paintComponent(Graphics g) {
        super.paintComponent(g);
        g.setFont(new Font("Roboto", Font.BOLD, 20));
        g.setColor(new Color(153, 51, 255));
        g.drawString("Título del Contenido", 100, 100);
    }
}
```

```java
package Graficos;

import java.awt.Color;
import java.awt.Graphics;
import java.awt.Graphics2D;
import java.awt.geom.Ellipse2D;
import java.awt.geom.Rectangle2D;
import javax.swing.JFrame;
import javax.swing.JPanel;

public class _02_PruebaDibujo_TrabajandoConColores {

    public static void main(String[] args) {
        Marco2 ventana = new Marco2();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco2 extends JFrame {
    public Marco2 () {
        setSize(840, 840);
        setTitle("  Dibujos y Colores");
        setLocationRelativeTo(null);
        add(new Lamina2());
        setVisible(true);
    }
}

class Lamina2 extends JPanel {
    public Lamina2() {
        setBackground(new Color(179, 255, 255));
    }
    @Override
    protected void paintComponent(Graphics g) {
        super.paintComponent(g);
        g.drawRect(100, 200, 150, 100);
        g.drawString("1 - Rectángulo Vacío Graphics", 100, 180);
        g.fillRect(100, 400, 150, 100);
        g.drawString("2 - Rectángulo Relleno Graphics", 100, 380);
        Graphics2D g2D = (Graphics2D) g;
        Rectangle2D rectangulo = new Rectangle2D.Double(500, 200, 150, 100);
        g2D.draw(rectangulo);
        g2D.drawString("3 - Rectángulo Graphics2D", 500, 120);
        Ellipse2D elipse = new Ellipse2D.Double();
        elipse.setFrame(rectangulo);
        g2D.draw(elipse);
        g2D.drawString("4 - Elipse Graphics2D", 500, 140);
        g2D.drawLine(500, 200, 650, 300);
        g2D.drawString("5 - Línea Oblícua Graphics2D", 500, 370);
        double centroX = rectangulo.getCenterX();
        double centroY = rectangulo.getCenterY();
        double radio = 90;
        Ellipse2D circulo = new Ellipse2D.Double();
        circulo.setFrameFromCenter(centroX, centroY, centroX+radio, centroY+radio);
        g2D.draw(circulo);
        g2D.drawString("6 - Círculo Graphics2D", 500, 390);
        g.drawString("7 - Rectángulo Relleno Graphics", 500, 430);
        g.setColor(new Color(255, 153, 255));
        g.fillRect(500, 480, 200, 200);
        g.setColor(new Color(0, 0, 0));
        g.drawString("8 - Círculo Relleno Graphics", 500, 460);
        g.setColor(new Color(179, 255, 179));
        g.fillOval(500, 480, 200, 200);
    }
}
```

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.Font;
import java.awt.GraphicsEnvironment;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.SwingConstants;

public class _03_FuentesTipo_TrabajandoConFuentes {

    public static void main(String[] args) {

        Marco3 ventana = new Marco3();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco3 extends JFrame {
    public Marco3() {
        setSize(900, 300);
        setTitle(" Trabajando con Fuentes");
        setLocationRelativeTo(null);

        setLayout(new BorderLayout());
        add(new JLabel("             "), BorderLayout.NORTH);
        add(new JLabel("             "), BorderLayout.SOUTH);
        add(new JLabel("             "), BorderLayout.WEST);
        add(new JLabel("             "), BorderLayout.EAST);

        add(new Ventana3(), BorderLayout.CENTER);

        setVisible(true);
    }
}

class Ventana3 extends JPanel {

    String fuenteIn;
    boolean verificador = false;
    JLabel encabezadoText, fuenteText;

    public Ventana3() {

        setLayout(new BorderLayout());

        fuenteIn = JOptionPane.showInputDialog("Ingrese el nombre de la fuente a consultar").toUpperCase();

        GraphicsEnvironment e = GraphicsEnvironment.getLocalGraphicsEnvironment();
        String Fuentes[] = e.getAvailableFontFamilyNames();

        for(String fuente: Fuentes) {
            if(fuenteIn.equalsIgnoreCase(fuente)) {
                verificador = true;
                break;
            }
        }

        if(verificador) {
            add(encabezadoText = new JLabel("El tipo de Fuente:  " + fuenteIn + "  Sí se encuentra instalada en el sistema."), JLabel.CENTER);
            encabezadoText.setFont(new Font(fuenteIn, Font.BOLD, 22));
            encabezadoText.setForeground(new Color(0, 153, 51));
            encabezadoText.setHorizontalAlignment(SwingConstants.CENTER);
            setBackground(new Color(204, 255, 221));

            System.out.println("El tipo de Fuente: " + fuenteIn + " Sí se encuentra instalada en el sistema.");

        } else {
            add(encabezadoText = new JLabel("El tipo de Fuente:  " + fuenteIn + "  No está instalada en el sistema."), JLabel.CENTER);
            encabezadoText.setFont(new Font("Arial", Font.BOLD, 22));
            encabezadoText.setForeground(new Color(153, 0, 61));
            encabezadoText.setHorizontalAlignment(SwingConstants.CENTER);
            setBackground(new Color(255, 204, 224));

            System.out.println("El tipo de Fuente:  " + fuenteIn + "  No está instalada en el sistema.");
        }
    }
}
```

```java
package Graficos;

import java.awt.Graphics;
import java.awt.Image;
import java.io.File;
import javax.imageio.ImageIO;
import javax.swing.ImageIcon;
import javax.swing.JFrame;
import javax.swing.JPanel;

public class _04_PruebaImagenes {

    public static void main(String[] args) {

        Marco4 ventana = new Marco4();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco4 extends JFrame {

    public Marco4() {
        setSize(600, 500);
        setTitle(" Prueba Imágenes");
        setLocationRelativeTo(null);

        ImageIcon icono = new ImageIcon("src/Graficos/images/musicIco.png");
        setIconImage(icono.getImage());

        add(new Ventana4());

        setVisible(true);
    }
}

class Ventana4 extends JPanel {

    private Image radioImg;
    private Image musicImg;
    private int anchoImg;
    private int altoImg;

    protected void paintComponent(Graphics g) {

        super.paintComponent(g);

        // --------------------MUSIC IMG-------------------------

        File musicPath = new File("src/Graficos/images/music.png");

        try {
            musicImg = ImageIO.read(musicPath);
        } catch (Exception e) {
            System.out.println("No File!");
        }

        g.drawImage(musicImg, 0, 0, 100, 100, null);

        for (int i=0; i<600; i++) {
            for(int j=0; j<500; j++) {
                g.copyArea(0, 0, 100, 100, i*100, j*100);
            }
        }

        // --------------------RADIO IMG-------------------------

        File radioPath = new File("src/Graficos/images/radio.png");

        try {
            radioImg = ImageIO.read(radioPath);
        } catch (Exception e) {
            System.out.println("No File!");
        }

        anchoImg = radioImg.getWidth(null);
        altoImg = radioImg.getHeight(null);

        int x = (this.getWidth() - anchoImg/2) / 2;
        int y = (this.getHeight() - altoImg/2) / 2;

        g.drawImage(radioImg, x, y, anchoImg/2, altoImg/2, null);
    }
}
```

```java
package Graficos;

import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class _05_PruebaEventos_PruebaAcciones {

    public static void main(String[] args) {

        Marco5 ventana = new Marco5();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco5 extends JFrame {

    public Marco5() {

        setSize(600, 500);
        setTitle(" Eventos y Acciones");
        setLocationRelativeTo(null);

        add(new Ventana5());

        setVisible(true);
    }
}

class Ventana5 extends JPanel {

    public Ventana5() {

        setLayout(new GridBagLayout());
        GridBagConstraints gbc = new GridBagConstraints();
        gbc.insets = new Insets(0, 10, 0, 10);

        AccionColor accionLima = new AccionColor("Lima", new ImageIcon("src/Graficos/images/lima.png"), new Color(204, 255, 153));
        AccionColor accionOrange = new AccionColor("Orange", new ImageIcon("src/Graficos/images/orange.png"), new Color(255, 204, 102));
        AccionColor accionGrape = new AccionColor("Grape", new ImageIcon("src/Graficos/images/grape.png"), new Color(204, 204, 255));

        add(new JButton(accionLima), gbc);
        add(new JButton(accionOrange), gbc);
        add(new JButton(accionGrape), gbc);

        KeyStroke tecladoLima = KeyStroke.getKeyStroke("ctrl L");
        KeyStroke tecladoOrange = KeyStroke.getKeyStroke("ctrl O");
        KeyStroke tecladoGrape = KeyStroke.getKeyStroke("ctrl G");

        InputMap mapaEntrada = getInputMap(WHEN_IN_FOCUSED_WINDOW);

        mapaEntrada.put(tecladoLima, "eventoLima");
        mapaEntrada.put(tecladoOrange, "eventoOrange");
        mapaEntrada.put(tecladoGrape, "eventoGrape");

        ActionMap mapaAccion = getActionMap();

        mapaAccion.put("eventoLima", accionLima);
        mapaAccion.put("eventoOrange", accionOrange);
        mapaAccion.put("eventoGrape", accionGrape);
    }

    private class AccionColor extends AbstractAction {

        public AccionColor(String nombre, Icon icono, Color color_boton) {

            putValue(Action.NAME, nombre);
            putValue(Action.SMALL_ICON, icono);
            putValue(Action.SHORT_DESCRIPTION, "(Ctrl+" + nombre.charAt(0) + ") " + "Cambia el fondo a color " + nombre);
            putValue("color_de_fondo", color_boton);
        }

        public void actionPerformed(ActionEvent e) {
            Color c = (Color) getValue("color_de_fondo");
            setBackground(c);
        }
    }
}
```

```java
package Graficos;

import java.awt.Color;
import java.awt.GridBagConstraints;
import java.awt.GridBagLayout;
import java.awt.event.ActionEvent;
import javax.swing.AbstractAction;
import javax.swing.ActionMap;
import javax.swing.ImageIcon;
import javax.swing.InputMap;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JPanel;
import javax.swing.KeyStroke;

public class _05_PruebaEventos_PruebaAcciones_ByPipe {

    public static void main(String[] args) {

        MarcoAccionesPipe ventana = new MarcoAccionesPipe();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class MarcoAccionesPipe extends JFrame {

    public MarcoAccionesPipe() {

        setTitle("  Eventos y Acciones by Pipe");
        setSize(600, 400);
        setLocationRelativeTo(null);

        add(new VentanaAccionesPipe());

        setVisible(true);
    }
}

class VentanaAccionesPipe extends JPanel {

    public VentanaAccionesPipe() {

        setLayout(new GridBagLayout());
        GridBagConstraints gbc = new GridBagConstraints();
        gbc.insets.set(0, 0, 50, 10);

        Acciones accionLima = new Acciones("Lima", new ImageIcon("src/Graficos/images/lima.png"), new Color(204, 255, 153));
        Acciones accionOrange = new Acciones("Orange", new ImageIcon("src/Graficos/images/orange.png"), new Color(255, 204, 102));
        Acciones accionGrape = new Acciones("Grape", new ImageIcon("src/Graficos/images/grape.png"), new Color(204, 204, 255));

        add(new JButton(accionLima), gbc);
        add(new JButton(accionOrange), gbc);
        add(new JButton(accionGrape), gbc);

        KeyStroke tecladoLima = KeyStroke.getKeyStroke("ctrl L");
        KeyStroke tecladoOrange = KeyStroke.getKeyStroke("ctrl O");
        KeyStroke tecladoGrape = KeyStroke.getKeyStroke("ctrl G");

        InputMap mapaEntrada = getInputMap(WHEN_IN_FOCUSED_WINDOW);

        mapaEntrada.put(tecladoLima, "tecladoLima");
        mapaEntrada.put(tecladoOrange, "tecladoOrange");
        mapaEntrada.put(tecladoGrape, "tecladoGrape");

        ActionMap mapaAccion = getActionMap();

        mapaAccion.put("tecladoLima", accionLima);
        mapaAccion.put("tecladoOrange", accionOrange);
        mapaAccion.put("tecladoGrape", accionGrape);
    }

    class Acciones extends AbstractAction {

        public Acciones(String nombre, ImageIcon icon, Color color) {
            putValue(NAME, nombre);
            putValue(SMALL_ICON, icon);
            putValue("dameColor", color);
            putValue(SHORT_DESCRIPTION, "Ctr+" + nombre.charAt(0) + "  Cambia el fondo a color: " + nombre);
        }

        @Override
        public void actionPerformed(ActionEvent e) {
            Color color = (Color) getValue("dameColor");
            setBackground(color);
        }
    }
}
```

```java
package Graficos;

import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;
import java.awt.event.WindowAdapter;
import java.awt.event.WindowEvent;
import javax.swing.JFrame;

public class _06_EventosFocoVentanaTeclado {

    public static void main(String[] args) {

        Marco6 ventana1 = new Marco6();
        Marco6New ventana2 = new Marco6New();
    }
}

class Marco6 extends JFrame {

    private String nombreVentana;

    public Marco6() {

        setBounds(200, 200, 500, 300);
        setTitle(" Ventana 1º");

        nombreVentana = this.getTitle();

        addWindowFocusListener(new EventosVentana(nombreVentana));
        addWindowListener(new EventosVentana(nombreVentana));
        addWindowStateListener(new EventosVentana(nombreVentana));

        addKeyListener(new EventosTeclado());

        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco6New extends JFrame  {

    private String nombreVentana;

    public Marco6New() {

        setBounds(900, 200, 500, 300);
        setTitle(" Ventana 2º");

        nombreVentana = this.getTitle();

        addWindowFocusListener(new EventosVentana(nombreVentana));
        addWindowListener(new EventosVentana(nombreVentana));
        addWindowStateListener(new EventosVentana(nombreVentana));

        addKeyListener(new EventosTeclado());

        setVisible(true);
    }
}

class EventosVentana extends WindowAdapter {

    String nombre;

    public EventosVentana(String nombre) {
        this.nombre = nombre;
    }

    @Override
    public void windowActivated(WindowEvent e) {
        System.out.println("La Ventana se ha Activado " + nombre);
        super.windowActivated(e);
    }

    @Override
    public void windowDeactivated(WindowEvent e) {
        System.out.println("La Ventana se ha Desactivado" + nombre);
        super.windowDeactivated(e);
    }

    @Override
    public void windowOpened(WindowEvent e) {
        System.out.println("La Ventana se ha Abierto" + nombre);
        super.windowOpened(e);
    }

    @Override
    public void windowClosing(WindowEvent e) {
        System.out.println("La Ventana se está Cerrando" + nombre);
        super.windowClosing(e);
    }

    @Override
    public void windowClosed(WindowEvent e) {
        System.out.println("La Ventana se ha Cerrado" + nombre);
        super.windowClosed(e);
    }

    @Override
    public void windowIconified(WindowEvent e) {
        System.out.println("La Ventana se ha Minimizado" + nombre);
        super.windowIconified(e);
    }

    @Override
    public void windowDeiconified(WindowEvent e) {
        System.out.println("La Ventana se ha Maximizado" + nombre);
        super.windowDeiconified(e);
    }

    @Override
    public void windowGainedFocus(WindowEvent e) {
        System.out.println("La Ventana ha Ganado el Foco" + nombre);
        super.windowGainedFocus(e);
    }

    @Override
    public void windowLostFocus(WindowEvent e) {
        System.out.println("La Ventana ha Perdido el Foco" + nombre);
        super.windowLostFocus(e);
    }

    @Override
    public void windowStateChanged(WindowEvent e) {
        System.out.println("La Ventana ha Cambiado de Estado" + nombre);
        super.windowStateChanged(e);
    }
}


class EventosTeclado implements KeyListener {

    @Override
    public void keyTyped(KeyEvent e) {
        System.out.println("Se ha Tecleado la tecla: " + e.getKeyChar());
    }

    @Override
    public void keyPressed(KeyEvent e) {
        System.out.println("Se ha Presionado la tecla: " + e.getKeyChar());
    }

    @Override
    public void keyReleased(KeyEvent e) {
        System.out.println("Se ha Levantado la tecla: " + e.getKeyChar());
    }
}
```

```java
package Graficos;

import java.awt.event.MouseAdapter;
import java.awt.event.MouseEvent;
import java.awt.event.MouseWheelEvent;
import javax.swing.JFrame;

public class _07_EventosRaton extends JFrame {

    public static void main(String[] args) {

        JFrame ventana = new JFrame();

        ventana.setTitle(" Eventos del Ratón");
        ventana.setSize(500, 400);
        ventana.setLocationRelativeTo(null);

        ventana.addMouseListener(new AccionesRaton());
        ventana.addMouseMotionListener(new AccionesRaton());
        ventana.addMouseWheelListener(new AccionesRaton());

        ventana.setVisible(true);
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class AccionesRaton extends MouseAdapter {

    @Override
    public void mouseClicked(MouseEvent e) {
        int boton = e.getButton();
        String click = "";
        if  (boton == 1) {
            click = "Click Izquierdo";
        } else if  (boton == 2) {
            click = "Rueda del Ratón";
        } else if  (boton == 3) {
            click = "Click Derecho";
        }
        int x = e.getX();
        int y = e.getY();
        System.out.println("Se ha hecho Click con: " + click + " en la coordenada: X=" + x + " Y=" + y);
        super.mouseClicked(e);
    }

    @Override
    public void mouseDragged(MouseEvent e) {
        System.out.println("Se ha Arrastrado el ratón");
        super.mouseDragged(e);
    }

    @Override
    public void mouseEntered(MouseEvent e) {
        System.out.println("El ratón ha Entrado en la ventana");
        super.mouseEntered(e);
    }

    @Override
    public void mouseExited(MouseEvent e) {
        System.out.println("El ratón ha Salido de la ventana");
        super.mouseExited(e);
    }

    @Override
    public void mouseMoved(MouseEvent e) {
//      System.out.println("Se ha Movido el ratón");
        super.mouseMoved(e);
    }

    @Override
    public void mousePressed(MouseEvent e) {
        System.out.println("Se ha Presionado el ratón");
        super.mousePressed(e);
    }

    @Override
    public void mouseReleased(MouseEvent e) {
        System.out.println("Se ha Soltado la tecla del ratón");
        super.mouseReleased(e);
    }

    @Override
    public void mouseWheelMoved(MouseWheelEvent e) {
        System.out.println("Se ha Movido la Rueda del ratón");
        super.mouseWheelMoved(e);
    }
}
```

```java
package Graficos;
import java.awt.Color;
import java.awt.GridBagLayout;
import java.awt.GridLayout;
import java.awt.event.FocusEvent;
import java.awt.event.FocusListener;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JTextField;

public class _08_FocoEvento {

    public static JLabel aviso;

    public static void main(String[] args) {

        Color fondo = new Color(230, 204, 255);
        JTextField email;

        JFrame ventana = new JFrame();
        ventana.setTitle(" Foco Evento");
        ventana.setSize(600, 400);
        ventana.setLocationRelativeTo(null);
        ventana.setLayout(new GridBagLayout());
        ventana.getContentPane().setBackground(fondo);

        JPanel lamina = new JPanel();
        lamina.setBackground(fondo);

        CampoFoco oyenteFoco = new CampoFoco();

        lamina.setLayout(new GridLayout(10,1));

        lamina.add(new JLabel("eMail: ")).setForeground(Color.GRAY.darker());
        lamina.add(email = new JTextField(30));
        email.addFocusListener(oyenteFoco);
        lamina.add(new JLabel("                ")).setForeground(Color.GRAY.darker());
        lamina.add(aviso = new JLabel(" ")).setForeground(Color.RED.darker());
        lamina.add(new JLabel("                ")).setForeground(Color.GRAY.darker());
        lamina.add(new JLabel("Contraseña: ")).setForeground(Color.GRAY.darker());
        lamina.add(new JTextField(30));
        lamina.add(new JLabel("                ")).setForeground(Color.GRAY.darker());  // Éstos labels son sólo para aumentar espacio
        lamina.add(new JLabel("                ")).setForeground(Color.GRAY.darker());
        lamina.add(new JLabel("                ")).setForeground(Color.GRAY.darker());

        ventana.add(lamina);

        ventana.setVisible(true);
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

    static class CampoFoco implements FocusListener {

        @Override
        public void focusGained(FocusEvent e) {
            // TODO Auto-generated method stub
        }

        @Override
        public void focusLost(FocusEvent e) {
            JTextField emailObj = (JTextField) e.getSource();
            String emailTxt = emailObj.getText();
            int arroba = 0;

            boolean punto = false;

            for (int i=0; i<emailTxt.length(); i++) {
                if (emailTxt.charAt(i) == '@') {
                    arroba++;
                }
                if (emailTxt.charAt(i) == '.') {
                    punto = true;
                }
            }

            if (arroba == 1 && punto) {
                aviso.setText(" ");
                System.out.println("Email correcto");
            } else {
                aviso.setText("eMail Incorrecto, corrija e intente nuevamente");
                System.out.println("Email Incorrecto");
                arroba = 0;
            }
        }
    }
}
```

```java
package Graficos;

import java.awt.Color;
import java.awt.Font;
import java.awt.GridBagLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.util.Random;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;

public class _09_VariosOyentes {

    public static void main(String[] args) {
        Ventana9 ventana = new Ventana9();
    }
}

class Ventana9 extends JFrame {
    public Ventana9() {
        setSize(400, 300);
        setTitle(" Varios Oyentes");
        setBounds(1200, 200, 400, 300);
        add(new Lamina9());
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Lamina9 extends JPanel {
    JButton btn1, btn2;
    public Lamina9() {
        setBackground(new Color(255, 255, 153));
        setLayout(new GridBagLayout());
        add(btn1 = new JButton("Nueva Ventana"));
        add(btn2 = new JButton("Cerrar Ventanas"));
        btn1.addActionListener(new OyenteListener());
    }

    public class OyenteListener implements ActionListener {
        @Override
        public void actionPerformed(ActionEvent e) {
            VentanaEmergente marco = new VentanaEmergente(btn2);
        }
    }

    int numero = 1;

    class VentanaEmergente extends JFrame {

        public VentanaEmergente(JButton btnCerrar) {
            setTitle("Ventana " + numero);
            setBounds(40*numero, 40*numero, 250, 200);

            add(new NombreAleatorio());

            setVisible(true);
            numero++;
            btnCerrar.addActionListener(new OyenteCerrar());
        }

        class OyenteCerrar implements ActionListener {
            @Override
            public void actionPerformed(ActionEvent e) {
                dispose();
                numero = 1;
            }
        }
    }
}

class NombreAleatorio extends JPanel {

    JLabel nombre;

    Random random = new Random();
    int aleatorio1 = random.nextInt(100)+155;
    int aleatorio2 = random.nextInt(100)+155;
    int aleatorio3 = random.nextInt(100)+155;

    int vocalNro1 = random.nextInt(9);
    int vocalNro2 = random.nextInt(9);
    int vocalNro3 = random.nextInt(9);
    int vocalNro4 = random.nextInt(9);
    int vocalNro5 = random.nextInt(9);
    int vocalNro6 = random.nextInt(9);
    int consonanteNro1 = random.nextInt(27);
    int consonanteNro2 = random.nextInt(27);
    int consonanteNro3 = random.nextInt(27);
    int consonanteNro4 = random.nextInt(27);
    int consonanteNro5 = random.nextInt(27);
    int consonanteNro6 = random.nextInt(27);

    String vocales[] = {"A","E","I","O","U","AA","EE","II","OO","UU"};
    String consonantes[] = {"B","C","D","F","G","H","J","K","L","M","N","Ñ","P","Q","R","S","T","V","W","X","Y","Z","LL","BB","RR","MM","PP","SS",};

    String vocalRandom1;
    String vocalRandom2;
    String vocalRandom3;
    String vocalRandom4;
    String vocalRandom5;
    String vocalRandom6;
    String consonanteRandom1;
    String consonanteRandom2;
    String consonanteRandom3;
    String consonanteRandom4;
    String consonanteRandom5;
    String consonanteRandom6;

    public NombreAleatorio() {

        // -----------VOCALES-----------------------
        for(int i=0; i<vocales.length; i++) {
            if(i == vocalNro1) {
                vocalRandom1 = vocales[i];
            }
        }
        for(int i=0; i<vocales.length; i++) {
            if(i == vocalNro2) {
                vocalRandom2 = vocales[i];
            }
        }
        for(int i=0; i<vocales.length; i++) {
            if(i == vocalNro3) {
                vocalRandom3 = vocales[i];
            }
        }
        for(int i=0; i<vocales.length; i++) {
            if(i == vocalNro4) {
                vocalRandom4 = vocales[i];
            }
        }
        for(int i=0; i<vocales.length; i++) {
            if(i == vocalNro5) {
                vocalRandom5 = vocales[i];
            }
        }
        for(int i=0; i<vocales.length; i++) {
            if(i == vocalNro6) {
                vocalRandom6 = vocales[i];
            }
        }
        // -----------CONSONANTES-----------------------
        for(int i=0; i<consonantes.length; i++) {
            if(i == consonanteNro1) {
                consonanteRandom1 = consonantes[i];
            }
        }
        for(int i=0; i<consonantes.length; i++) {
            if(i == consonanteNro2) {
                consonanteRandom2 = consonantes[i];
            }
        }
        for(int i=0; i<consonantes.length; i++) {
            if(i == consonanteNro3) {
                consonanteRandom3 = consonantes[i];
            }
        }
        for(int i=0; i<consonantes.length; i++) {
            if(i == consonanteNro4) {
                consonanteRandom4 = consonantes[i];
            }
        }
        for(int i=0; i<consonantes.length; i++) {
            if(i == consonanteNro5) {
                consonanteRandom5 = consonantes[i];
            }
        }
        for(int i=0; i<consonantes.length; i++) {
            if(i == consonanteNro6) {
                consonanteRandom6 = consonantes[i];
            }
        }

        setBackground(new Color(aleatorio1, aleatorio2, aleatorio3));
        System.out.println("El color RGB de la ventana nueva es: " + aleatorio1 + " " + aleatorio2 + " " + aleatorio3);
        System.out.println("Letras aleatorias: " + vocalRandom1 + consonanteRandom1 + vocalRandom2 + consonanteRandom2 + vocalRandom3);

        setLayout(new GridBagLayout());

        add(nombre = new JLabel(vocalRandom1 + consonanteRandom1 + vocalRandom2 + consonanteRandom2 + vocalRandom3));
        nombre.setFont(new Font("Roboto", Font.PLAIN, 24));
    }
}
```

_10_Layouts.java

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.FlowLayout;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JPanel;

public class _10_Layouts {

    public static void main(String[] args) {

        Ventana10 ventana = new Ventana10();
    }
}

class Ventana10 extends JFrame {

    public Ventana10() {

        setSize(600, 500);
        setTitle("  Layouts");
        setLocationRelativeTo(null);

        add(new Lamina10());

        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Lamina10 extends JPanel {

    public Lamina10() {
        setLayout(new BorderLayout());
        setBackground(new Color(204, 255, 102));

        JPanel lamina1 = new JPanel();
        add(lamina1, BorderLayout.NORTH);
        lamina1.setLayout(new BorderLayout());

        lamina1.add(new JButton("Botón 1"), BorderLayout.NORTH);
        lamina1.add(new JButton("Botón 2"), BorderLayout.SOUTH);
        lamina1.add(new JButton("Botón 3"), BorderLayout.EAST);
        lamina1.add(new JButton("Botón 4"), BorderLayout.WEST);
        lamina1.add(new JButton("Botón 5"), BorderLayout.CENTER);

        JPanel lamina2 = new JPanel();
        add(lamina2, BorderLayout.SOUTH);
        lamina2.setLayout(new FlowLayout(FlowLayout.RIGHT));

        lamina2.add(new JButton("Botón 1"));
        lamina2.add(new JButton("Botón 2"));
        lamina2.add(new JButton("Botón 3"));
    }
}
```

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.Dimension;
import java.awt.Font;
import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JPanel;
import javax.swing.SwingConstants;

public class _11_Calculadora {

    public static void main(String[] args) {

        Ventana11 ventana = new Ventana11();
    }
}

class Ventana11 extends JFrame {

    public Ventana11() {
        setTitle(" Calculadora");
        setSize(300, 350);
        setLocationRelativeTo(null);

        add(new Lamina11());

        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Lamina11 extends JPanel {

    JPanel lamina1, lamina2;
    JButton display, btn1, btn2, btn3, btn4, btn5, btn6, btn7, btn8, btn9, btn0, btnSum, btnRes, btnMul, btnDiv, btnClr, btnEqu;

    public Lamina11() {
        setLayout(new BorderLayout());

        add(lamina1 = new JPanel(), BorderLayout.NORTH);
        lamina1.setLayout(new BorderLayout());
        lamina1.add(display = new JButton("0"));
        display.setHorizontalAlignment(SwingConstants.RIGHT);
        display.setFont(new Font("Arial", Font.PLAIN, 24));
        display.setPreferredSize(new Dimension(300,80));
        display.setEnabled(false);

        add(lamina2 = new JPanel(), BorderLayout.CENTER);
        lamina2.setLayout(new GridLayout(4,4));
        lamina2.add(btn1 = new JButton("1"));
        lamina2.add(btn2 = new JButton("2"));
        lamina2.add(btn3 = new JButton("3"));
        lamina2.add(btnSum = new JButton("+"));
        lamina2.add(btn4 = new JButton("4"));
        lamina2.add(btn5 = new JButton("5"));
        lamina2.add(btn6 = new JButton("6"));
        lamina2.add(btnRes = new JButton("-"));
        lamina2.add(btn7 = new JButton("7"));
        lamina2.add(btn8 = new JButton("8"));
        lamina2.add(btn9 = new JButton("9"));
        lamina2.add(btnMul = new JButton("*"));
        lamina2.add(btnClr = new JButton("clr"));
        lamina2.add(btn0 = new JButton("0"));
        lamina2.add(btnEqu = new JButton("="));
        lamina2.add(btnDiv = new JButton("/"));

        OyenteNumeros oyenteNro = new OyenteNumeros();

        btn1.addActionListener(oyenteNro);
        btn2.addActionListener(oyenteNro);
        btn3.addActionListener(oyenteNro);
        btn4.addActionListener(oyenteNro);
        btn5.addActionListener(oyenteNro);
        btn6.addActionListener(oyenteNro);
        btn7.addActionListener(oyenteNro);
        btn8.addActionListener(oyenteNro);
        btn9.addActionListener(oyenteNro);
        btn0.addActionListener(oyenteNro);

        OyenteOperandos oyenteOperando = new OyenteOperandos();

        btnSum.addActionListener(oyenteOperando);
        btnRes.addActionListener(oyenteOperando);
        btnMul.addActionListener(oyenteOperando);
        btnDiv.addActionListener(oyenteOperando);
        btnClr.addActionListener(oyenteOperando);
        btnEqu.addActionListener(oyenteOperando);

        btn1.setBackground(new Color(230, 255, 204));
        btn2.setBackground(new Color(230, 255, 204));
        btn3.setBackground(new Color(230, 255, 204));
        btn4.setBackground(new Color(230, 255, 204));
        btn5.setBackground(new Color(230, 255, 204));
        btn6.setBackground(new Color(230, 255, 204));
        btn7.setBackground(new Color(230, 255, 204));
        btn8.setBackground(new Color(230, 255, 204));
        btn9.setBackground(new Color(230, 255, 204));
        btn0.setBackground(new Color(230, 255, 204));

        btnSum.setBackground(new Color(230, 204, 255));
        btnRes.setBackground(new Color(230, 204, 255));
        btnMul.setBackground(new Color(230, 204, 255));
        btnDiv.setBackground(new Color(230, 204, 255));
        btnClr.setBackground(new Color(230, 204, 255));
        btnEqu.setBackground(new Color(230, 204, 255));
    }

    class OyenteNumeros implements ActionListener {
        @Override
        public void actionPerformed(ActionEvent e) {

            JButton btnNro = (JButton) e.getSource();
            double nro = Double.parseDouble(btnNro.getText());

            if(display.getText() == "0") {
                display.setText("");
                display.setText(btnNro.getText());
            } else {
```

```java
            display.setText(display.getText() + btnNro.getText());
        }
    }
}

class OyenteOperandos implements ActionListener {

    double resultado = 0;
    String simbolo = "";

    @Override
    public void actionPerformed(ActionEvent e) {

        JButton operandoBtn = (JButton) e.getSource();
        String operando = operandoBtn.getText();

        if(operando.equals("+")) {
            resultado = resultado + Double.parseDouble(display.getText());
            display.setText("0");
            simbolo = "+";
        }
        if(operando.equals("-")) {
            if(resultado == 0) {
                resultado = Double.parseDouble(display.getText());
                display.setText("0");
                simbolo = "-";
            } else {
                resultado = resultado - Double.parseDouble(display.getText());
                display.setText("0");
                simbolo = "-";
            }
        }
        if(operando.equals("*")) {
            if(resultado == 0) {
                resultado = (resultado+1) * Double.parseDouble(display.getText());
                display.setText("0");
                simbolo = "*";
            } else {
                resultado = resultado * Double.parseDouble(display.getText());
                display.setText("0");
                simbolo = "*";
            }
        }
        if(operando.equals("/")) {
            if(resultado == 0) {
                resultado = Double.parseDouble(display.getText());
                display.setText("0");
                simbolo = "/";
            } else {
                resultado = resultado / Double.parseDouble(display.getText());
                display.setText("0");
                simbolo = "/";
            }
        }

        if(operando.equals("=")) {
            if(simbolo.equals("+")) {
                resultado = resultado + Double.parseDouble(display.getText());
                display.setText(String.valueOf(resultado));
                resultado = 0;
            }
            if(simbolo.equals("-")) {
                    resultado = resultado - Double.parseDouble(display.getText());
                    display.setText(String.valueOf(resultado));
                    resultado = 0;
                }
                if(simbolo.equals("*")) {
                    resultado = resultado * Double.parseDouble(display.getText());
                    display.setText(String.valueOf(resultado));
                    resultado = 0;
                }
                if(simbolo.equals("/")) {
                    resultado = resultado / Double.parseDouble(display.getText());
                    display.setText(String.valueOf(resultado));
                    resultado = 0;
                }
            }

            if(operando.equals("clr")) {
                resultado = 0;
                display.setText("0");
                simbolo = " ";
            }
        }
    }
}
```

_12_PruebaTexto.java

```java
package Graficos;

import java.awt.Color;
import java.awt.GridBagConstraints;
import java.awt.GridBagLayout;
import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JTextField;

public class _12_PruebaTexto {

    public static void main(String[] args) {

        Marco12 ventana = new Marco12();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco12 extends JFrame {

    Color fondo = new Color(51, 204, 204);

    public Marco12() {

        setSize(600, 500);
        setTitle(" Prueba Texto");
        setLocationRelativeTo(null);
        getContentPane().setBackground(fondo);

        setLayout(new GridBagLayout());
        GridBagConstraints gbc = new GridBagConstraints();
        gbc.insets.set(0, 0, 60, 0);

        add(new Ventana12(), gbc);

        setVisible(true);
    }

    class Ventana12 extends JPanel {

        JTextField campoTexto;
        JLabel aviso;
        JButton btn;

        public Ventana12() {

            setBackground(fondo);

            setLayout(new GridLayout(7,1));

            add(new JLabel("Ingrese su eMail:"));
            add(new JLabel(""));
            add(campoTexto = new JTextField(30));
            add(new JLabel(""));
            add(aviso = new JLabel(""));
            add(new JLabel(""));
            add(btn = new JButton("Enviar"));

            btn.addActionListener(new ClaseOyente());
        }

        class ClaseOyente implements ActionListener {

            @Override
            public void actionPerformed(ActionEvent e) {

                int arroba = 0;
                boolean punto = false;

                for (int i = 0; i < campoTexto.getText().length(); i++) {
                    if(campoTexto.getText().charAt(i) == '@') {
                        arroba++;
                    }
                    if(campoTexto.getText().charAt(i) == '.') {
                        punto = true;
                    }
                }
                if(arroba == 1 && punto) {
                    aviso.setForeground(new Color(102, 153, 0));
                    aviso.setText("eMail correcto, Bienvenido!");
                    arroba = 0;
                } else {
                    aviso.setForeground(new Color(255, 0, 102));
                    aviso.setText("eMail incorrecto, corrija e intente nuevamente");
                    arroba = 0;
                }
            }
        }
    }
}
```

```java
package Graficos;

import java.awt.Color;
import java.awt.GridBagLayout;
import java.awt.GridLayout;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JPasswordField;
import javax.swing.JTextField;
import javax.swing.event.DocumentEvent;
import javax.swing.event.DocumentListener;

public class _13_CampoPassword {

    public static void main(String[] args) {

        Marco13 ventana = new Marco13();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco13 extends JFrame {

    public Marco13() {

        setSize(550, 600);
        setTitle(" Campo Password");
        setLocationRelativeTo(null);

        add(new Ventana13());

        setVisible(true);
    }
}

class Ventana13 extends JPanel {

    JLabel emailTxt, passTxt, avisoMail, avisoPass;
    JTextField emailField;
    JPasswordField passField;
    JButton enviarBtn;
    JPanel lamina;
    Color fondo = new Color(204, 255, 153);

    public Ventana13() {

        setBackground(fondo);

        setLayout(new GridBagLayout());

        add(lamina = new JPanel());
        lamina.setBackground(fondo);
        lamina.setLayout(new GridLayout(10,1));

        lamina.add(emailTxt = new JLabel("Email:"));
        lamina.add(emailField = new JTextField(40));
        lamina.add(avisoMail = new JLabel(" "));
        lamina.add(new JLabel(" "));
        lamina.add(passTxt = new JLabel("Contraseña:"));
        lamina.add(passField = new JPasswordField(40));
        lamina.add(avisoPass = new JLabel(" "));
        lamina.add(new JLabel(" "));
        lamina.add(enviarBtn = new JButton("Enviar"));

        emailField.getDocument().addDocumentListener(new OyenteEmail());
        passField.getDocument().addDocumentListener(new OyentePassword());
    }

    // -----------------------OYENTE EMAIL------------------------------------------
    class OyenteEmail implements DocumentListener {
        @Override
        public void insertUpdate(DocumentEvent e) {
            String email = emailField.getText();
            int arroba = 0;
            boolean punto = false;

            for (int i = 0; i < email.length(); i++) {
                if (email.charAt(i) == '@') {
                    arroba++;
                }
                if (email.charAt(i) == '.') {
                    punto = true;
                }
            }
            if (email.length() > 8) {
                if (arroba == 1 && punto) {
                    emailField.setBackground(Color.WHITE);
                    avisoMail.setText(" ");
                    arroba = 0;
                } else {
                    emailField.setBackground(new Color(255, 102, 153));
                    avisoMail.setForeground(new Color(255, 102, 153));
                    avisoMail.setText("eMail incorrecto, corrija!");
                }
            }
        }
        @Override
        public void removeUpdate(DocumentEvent e) {
            String email = emailField.getText();
            int arroba = 0;
            boolean punto = false;

            for (int i = 0; i < email.length(); i++) {
                if (email.charAt(i) == '@') {
                    arroba++;
                }
                if (email.charAt(i) == '.') {
                    punto = true;
                }
            }
            if (email.length() > 8) {
                if (arroba == 1 && punto) {
                    emailField.setBackground(Color.WHITE);
                    avisoMail.setText(" ");
                    arroba = 0;
                } else {
                    emailField.setBackground(new Color(255, 102, 153));
                    avisoMail.setForeground(new Color(255, 102, 153));
                    avisoMail.setText("eMail incorrecto, corrija!");
                }
            }
        }
        @Override
        public void changedUpdate(DocumentEvent e) {
            String email = emailField.getText();
            int arroba = 0;
            boolean punto = false;

            for (int i = 0; i < email.length(); i++) {
                if (email.charAt(i) == '@') {
                    arroba++;
                }
                if (email.charAt(i) == '.') {
                    punto = true;
                }
            }
            if (email.length() > 8) {
                if (arroba == 1 && punto) {
                    emailField.setBackground(Color.WHITE);
                    avisoMail.setText(" ");
                    arroba = 0;
                } else {
                    emailField.setBackground(new Color(255, 102, 153));
                    avisoMail.setForeground(new Color(255, 102, 153));
                    avisoMail.setText("eMail incorrecto, corrija!");
                }
            }
        }
    }

    // -----------------------OYENTE PASSWORDFIELD------------------------------------------
    class OyentePassword implements DocumentListener {
        @Override
        public void insertUpdate(DocumentEvent e) {
            char password[] = passField.getPassword();
            for (int i = 0; i < password.length; i++) {
                if(password.length < 6 || password.length > 12) {
                    passField.setBackground(new Color(255, 102, 153));
                    avisoPass.setForeground(new Color(255, 102, 153));
                    avisoPass.setText("La contraseña debe tener mínimo 6 y máximo 12 letras!");
                } else {
                    passField.setBackground(Color.WHITE);
                    avisoPass.setText(" ");
                }
            }
        }
        @Override
        public void removeUpdate(DocumentEvent e) {
            char password[] = passField.getPassword();
            for (int i = 0; i < password.length; i++) {
                if(password.length < 6 || password.length > 12) {
                    passField.setBackground(new Color(255, 102, 153));
                    avisoPass.setForeground(new Color(255, 102, 153));
                    avisoPass.setText("La contraseña debe tener mínimo 6 y máximo 12 letras!");
                } else {
                    passField.setBackground(Color.WHITE);
                    avisoPass.setText(" ");
                }
            }
        }
        @Override
        public void changedUpdate(DocumentEvent e) {
            char password[] = passField.getPassword();
            for (int i = 0; i < password.length; i++) {
                if(password.length < 6 || password.length > 12) {
                    passField.setBackground(new Color(255, 102, 153));
                    avisoPass.setForeground(new Color(255, 102, 153));
                    avisoPass.setText("La contraseña debe tener mínimo 6 y máximo 12 letras!");
                } else {
                    passField.setBackground(Color.WHITE);
                    avisoPass.setText(" ");
                }
            }
        }
    }
}
```

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.FlowLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JScrollPane;
import javax.swing.JTextArea;

public class _14_EjemploArea {

    public static void main(String[] args) {

        Marco14 ventana = new Marco14();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco14 extends JFrame {

    public Marco14() {

        setSize(350, 500);
        setTitle(" Ejemplo Área");
        setLocationRelativeTo(null);
        getContentPane().setBackground(new Color(153, 204, 255));

        setLayout(new BorderLayout());

        // -----------Espacios en los Bordes-----------------
        add(new JLabel("         "), BorderLayout.NORTH);
        add(new JLabel("         "), BorderLayout.SOUTH);
        add(new JLabel("         "), BorderLayout.EAST);
        add(new JLabel("         "), BorderLayout.WEST);
        // -----------Espacios en los Bordes-----------------

        add(new Ventana14(), BorderLayout.CENTER);

        setVisible(true);
    }
}

class Ventana14 extends JPanel {

    JPanel lamina;
    JTextArea areaIn, areaOut;
    JLabel textoOut;
    JButton btnEnviar;
    JScrollPane vistaScroll;

    public Ventana14() {

        setBackground(new Color(153, 204, 255));

        setLayout(new FlowLayout(FlowLayout.LEFT, 20,20));

        add(new JLabel(" "));
        add(new JLabel(" "));
        add(areaIn = new JTextArea(8,20));
        areaIn.setText(lorem);
        areaIn.setLineWrap(true);
        add(vistaScroll = new JScrollPane(areaIn));
        add(btnEnviar = new JButton("Enviar"));
        add(new JLabel(" "));
        add(new JLabel(" "));
        add(areaOut = new JTextArea(8,20));
        areaOut.setLineWrap(true);
        areaOut.setEnabled(false);
        areaOut.setDisabledTextColor(Color.DARK_GRAY);
        areaOut.setBackground(new Color(179, 204, 230));
        add(vistaScroll = new JScrollPane(areaOut));
        add(textoOut = new JLabel(" "));

        btnEnviar.addActionListener(new ClaseOyente());
    }

    class ClaseOyente implements ActionListener {

        @Override
        public void actionPerformed(ActionEvent e) {

            String entrada = areaIn.getText();
            areaOut.setText(entrada);

            textoOut.setText("Data enviada!");
        }
    }

    String lorem = "There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable. The generated Lorem Ipsum is therefore always free from repetition, injected humour, or non-characteristic words etc.";
}
```

_15_PruebaArea.java

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JPanel;
import javax.swing.JScrollPane;
import javax.swing.JTextArea;

public class _15_PruebaArea {

    public static void main(String[] args) {

        Marco15 ventana = new Marco15();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco15 extends JFrame {

    public Marco15() {

        setSize(400, 300);
        setTitle(" Prueba Área");
        setLocationRelativeTo(null);

        add(new Ventana15());

        setVisible(true);
    }
}

class Ventana15 extends JPanel {

    JTextArea areaTxt;
    JScrollPane vistaScroll;
    JPanel lamina;
    JButton btn1, btn2;
    String lorem = "Al contrario del pensamiento popular, el texto de Lorem Ipsum no es simplemente texto aleatorio. | Al contrario del pensamiento popular, el texto de Lorem Ipsum no es simplemente texto aleatorio. | Al contrario del pensamiento popular, el texto de Lorem Ipsum no es simplemente texto aleatorio. | Al contrario del pensamiento popular, el texto de Lorem Ipsum no es simplemente texto aleatorio. | ";

    public Ventana15() {

        setLayout(new BorderLayout());

        add(areaTxt = new JTextArea(), BorderLayout.CENTER);
        areaTxt.setBackground(new Color(204, 255, 255));
        areaTxt.setForeground(new Color(153, 0, 115));
        add(vistaScroll = new JScrollPane(areaTxt));

        add(lamina = new JPanel(), BorderLayout.SOUTH);
        lamina.setBackground(new Color(204, 204, 255));

        lamina.add(btn1 = new JButton("Agregar texto"));
        lamina.add(btn2 = new JButton("Insertar salto de línea"));

        btn1.setBackground(new Color(204, 204, 255));
        btn2.setBackground(new Color(204, 204, 255));

        btn1.addActionListener(new ClaseOyente());
        btn2.addActionListener(new ClaseOyente());
    }

    class ClaseOyente implements ActionListener {

        @Override
        public void actionPerformed(ActionEvent e) {

            if (e.getSource() == btn1) {
                areaTxt.append(lorem);
            }
            if (e.getSource() == btn2) {
                if (areaTxt.getLineWrap() == false) {
                    areaTxt.setLineWrap(true);
                    btn2.setText("Quitar salto de línea");
                    btn2.setBackground(new Color(255, 153, 204));
                } else {
                    areaTxt.setLineWrap(false);
                    btn2.setText("Insertar salto de línea");
                    btn2.setBackground(new Color(153, 255, 204));
                }
            }
        }
    }
}
```

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.Font;
import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JCheckBox;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.SwingConstants;

public class _16_PruebaChecks {

    public static void main(String[] args) {

        Marco16 ventana = new Marco16();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco16 extends JFrame {

    JLabel east;
    Color fondo = new Color(179, 255, 179);

    public Marco16() {

        setSize(900, 400);
        setTitle(" Prueba Checks");
        setLocationRelativeTo(null);

        setLayout(new BorderLayout());

        // -----------Espacios en los Bordes-----------------
        add(new JLabel("         "), BorderLayout.NORTH);
        add(new JLabel("         "), BorderLayout.SOUTH);
        add(east = new JLabel("   ........................      "), BorderLayout.EAST);
        east.setForeground(new Color(0, 0, 0, 0));
        add(new JLabel("         "), BorderLayout.WEST);
        // -----------Espacios en los Bordes-----------------

        add(new Ventana16(fondo), BorderLayout.CENTER);

        getContentPane().setBackground(fondo);

        setVisible(true);
    }
}

class Ventana16 extends JPanel {

    JLabel texto1, texto2;
    JCheckBox check1, check2;
    JPanel lamina1, lamina2;

    public Ventana16(Color fondo) {

        setLayout(new BorderLayout());

        add(lamina1 = new JPanel(), BorderLayout.CENTER);
        lamina1.setLayout(new GridLayout(7,1));
        lamina1.setBackground(fondo);

        lamina1.add(new JLabel("    "));
        lamina1.add(new JLabel("    "));
        lamina1.add(new JLabel("    "));
        lamina1.add(texto1 = new JLabel("\"Es capaz el que piensa que es capaz.\""));
        texto1.setFont(new Font("Verdana", Font.PLAIN, 34));
        texto1.setHorizontalAlignment(SwingConstants.RIGHT);
        lamina1.add(new JLabel("    "));
        lamina1.add(texto2 = new JLabel("Buda"));
        texto2.setFont(new Font("Verdana", Font.PLAIN, 24));
        texto2.setHorizontalAlignment(SwingConstants.RIGHT);

        add(lamina2 = new JPanel(), BorderLayout.SOUTH);
        lamina2.setBackground(fondo);

        lamina2.add(check1 = new JCheckBox("Negrita", false));
        check1.setFont(new Font("Verdana", Font.PLAIN, 18));
        check1.setBackground(fondo);
        lamina2.add(check2 = new JCheckBox("Cursiva", false));
        check2.setFont(new Font("Verdana", Font.PLAIN, 18));
        check2.setBackground(fondo);

        check1.addActionListener(new ClaseOyente());
        check2.addActionListener(new ClaseOyente());
    }

    class ClaseOyente implements ActionListener {

        @Override
        public void actionPerformed(ActionEvent e) {

            int constante = 0;

            if (check1.isSelected() && !check2.isSelected()) {
                constante = 1;
            } else if (!check1.isSelected() && check2.isSelected()) {
                constante = 2;
            } else if (check1.isSelected() && check2.isSelected()) {
                constante = 3;
            } else {
                constante = 0;
            }

            texto1.setFont(new Font("Verdana", constante, 34));
        }
    }
}
```

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.Dimension;
import java.awt.Font;
import java.awt.GraphicsEnvironment;
import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.ButtonGroup;
import javax.swing.JComboBox;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JRadioButton;
import javax.swing.JSlider;
import javax.swing.JSpinner;
import javax.swing.SpinnerListModel;
import javax.swing.SpinnerNumberModel;
import javax.swing.event.ChangeEvent;
import javax.swing.event.ChangeListener;

public class _17_SintaxisRadio_EjemploRadio_PruebaCombo_MarcoSlider_MarcoSpinner {

    public static void main(String[] args) {

        Marco17 ventana = new Marco17();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco17 extends JFrame {

    Color fondo1 = new Color(179, 255, 224);

    public Marco17() {

        setSize(1000, 900);
        setTitle(" Ejercicio 3.17");
        setLocationRelativeTo(null);
        getContentPane().setBackground(fondo1);

        setLayout(new BorderLayout());

        // -----------Espacios en los Bordes-----------------
        add(new JLabel("         "), BorderLayout.NORTH);
        add(new JLabel("         "), BorderLayout.SOUTH);
        add(new JLabel("         "), BorderLayout.EAST);
        add(new JLabel("         "), BorderLayout.WEST);
        // -----------Espacios en los Bordes-----------------

        add(new Ventana17(fondo1), BorderLayout.CENTER);

        setVisible(true);
    }
}

class Ventana17 extends JPanel {

    JPanel lamina1, lamina2, laminaGrid, laminaGroup1, laminaGroup2, laminaSeparator, laminaSpinners;
    JLabel texto1, texto2;
    JRadioButton radioPequeño, radioMediano, radioGrande, radioMuyGrande, radioNegrita, radioCursiva, radioNormal;
    JComboBox comboFuentes;
    JSlider slider;
    JSpinner spinnerFuente, spinnerTamanio;
    String fuentes[] = GraphicsEnvironment.getLocalGraphicsEnvironment().getAvailableFontFamilyNames();
    String fuenteTipo = "Arial";
    int fuenteFormat = 0;
    int fuenteSize = 30;

    public Ventana17(Color fondo1) {

        setBackground(fondo1);
        add(laminaGrid = new JPanel());
        laminaGrid.setLayout(new GridLayout(2,1));

        // -------------LÁMINA 1------------------------------------------
        laminaGrid.add(lamina1 = new JPanel());
        lamina1.setPreferredSize(new Dimension(800,200));
        lamina1.setLayout(new GridLayout(2,1));
        lamina1.setBackground(fondo1);

        // -------------TEXTO PRINCIPAL-----------------------------------------
        lamina1.add(texto1 = new JLabel("\"Todo es un pensamiento.\""));
        texto1.setFont(new Font(fuenteTipo, fuenteFormat, fuenteSize));
        texto1.setHorizontalAlignment(JLabel.CENTER);
        lamina1.add(texto2 = new JLabel("Buda               "));
        texto2.setFont(new Font("Arial", Font.PLAIN, 22));
        texto2.setHorizontalAlignment(JLabel.RIGHT);

        // -------------LÁMINA 2------------------------------------------
        laminaGrid.add(lamina2 = new JPanel());
        lamina2.setLayout(new GridLayout(9,1));

        // -------------GRUPO 1 RADIOS------------------------------------------
        lamina2.add(laminaGroup1 = new JPanel());
        laminaGroup1.add(radioPequeño = new JRadioButton("Pequeña", false));
        laminaGroup1.add(radioMediano = new JRadioButton("Mediana", true));
        laminaGroup1.add(radioGrande = new JRadioButton("Grande", false));
        laminaGroup1.add(radioMuyGrande = new JRadioButton("Muy Grande", false));

        ButtonGroup grupo1 = new ButtonGroup();
        grupo1.add(radioPequeño);
        grupo1.add(radioMediano);
        grupo1.add(radioGrande);
        grupo1.add(radioMuyGrande);

        lamina2.add(laminaSeparator = new JPanel());
        laminaSeparator.add(new JLabel("                 "));
        laminaSeparator.add(new JLabel("                 "));

        // -------------GRUPO 2 RADIOS------------------------------------------
        lamina2.add(laminaGroup2 = new JPanel());
        laminaGroup2.add(radioNegrita = new JRadioButton("Negrita", false));
        laminaGroup2.add(radioCursiva = new JRadioButton("Cursiva", false));
        laminaGroup2.add(radioNormal = new JRadioButton("Normal", true));

        ButtonGroup grupo2 = new ButtonGroup();
        grupo2.add(radioNegrita);
        grupo2.add(radioCursiva);
```

```java
        grupo2.add(radioNormal);

        lamina2.add(laminaSeparator = new JPanel());
        laminaSeparator.add(new JLabel("                "));

        // -------------SPINNERS------------------------------------------
        lamina2.add(laminaSpinners = new JPanel());
        laminaSpinners.add(spinnerFuente = new JSpinner(new SpinnerListModel(fuentes)));
        spinnerFuente.setPreferredSize(new Dimension(150,30));

        laminaSpinners.add(spinnerTamanio = new JSpinner(new SpinnerNumberModel(30, 10, 60, 2)));
        spinnerTamanio.setPreferredSize(new Dimension(50,30));

        lamina2.add(laminaSeparator = new JPanel());
        laminaSeparator.add(new JLabel("                "));

        // -------------SLIDER------------------------------------------
        lamina2.add(slider = new JSlider(10, 60, 30));
        slider.setMajorTickSpacing(5);
        slider.setMinorTickSpacing(1);
        slider.setPaintLabels(true);
        slider.setPaintTicks(true);

        lamina2.add(laminaSeparator = new JPanel());
        laminaSeparator.add(new JLabel("                "));

        // -------------COMBOBOX------------------------------------------
        lamina2.add(comboFuentes = new JComboBox());
        for (int i = 0; i < fuentes.length; i++) {
            comboFuentes.addItem(fuentes[i]);
        }

        // -------------OYENTES------------------------------------------
        ActionOyente oyenteAction = new ActionOyente();

        radioPequeño.addActionListener(oyenteAction);
        radioMediano.addActionListener(oyenteAction);
        radioGrande.addActionListener(oyenteAction);
        radioMuyGrande.addActionListener(oyenteAction);
        radioNegrita.addActionListener(oyenteAction);
        radioCursiva.addActionListener(oyenteAction);
        radioNormal.addActionListener(oyenteAction);
        comboFuentes.addActionListener(oyenteAction);

        ChangeOyente oyenteChange = new ChangeOyente();

        slider.addChangeListener(oyenteChange);
        spinnerFuente.addChangeListener(oyenteChange);
        spinnerTamanio.addChangeListener(oyenteChange);
    }

    // -------------OYENTES ACTION------------------------------------------
    class ActionOyente implements ActionListener {

        public ActionOyente() {

        }
        @Override
        public void actionPerformed(ActionEvent e) {

            if (e.getSource() == comboFuentes) fuenteTipo =
(String)comboFuentes.getSelectedItem();

            if (radioNegrita.isSelected()) fuenteFormat = 1;
            if (radioCursiva.isSelected()) fuenteFormat = 2;
            if (radioNormal.isSelected()) fuenteFormat = 0;

            if (radioPequeño.isSelected()) fuenteSize = 20;
            if (radioMediano.isSelected()) fuenteSize = 30;
            if (radioGrande.isSelected()) fuenteSize = 40;
            if (radioMuyGrande.isSelected()) fuenteSize = 50;

            texto1.setFont(new Font(fuenteTipo, fuenteFormat, fuenteSize));
        }
    }

    // -------------OYENTES CHANGE-------------------------------------------
    class ChangeOyente implements ChangeListener {

        @Override
        public void stateChanged(ChangeEvent e) {

            if (e.getSource() == slider) fuenteSize = (int) slider.getValue();
            if (e.getSource() == spinnerTamanio) fuenteSize = (int)
spinnerTamanio.getValue();
            if (e.getSource() == spinnerFuente) fuenteTipo = (String)
spinnerFuente.getValue();

            texto1.setFont(new Font(fuenteTipo, fuenteFormat, fuenteSize));
        }
    }
}
```

```java
package Graficos;

import java.awt.BorderLayout;
import java.awt.Color;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JMenu;
import javax.swing.JMenuBar;
import javax.swing.JMenuItem;
import javax.swing.JPanel;
import javax.swing.JSeparator;

public class _18_MarcoMenu {

    public static void main(String[] args) {

        Marco18 ventana = new Marco18();
        ventana.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}

class Marco18 extends JFrame {

    Color fondo = new Color(230, 204, 255);

    public Marco18() {

        setSize(600, 500);
        setTitle(" Marco Menú");
        setLocationRelativeTo(null);
        getContentPane().setBackground(fondo);

        setLayout(new BorderLayout());

        // -----------Espacios en los Bordes-----------------
        add(new JLabel("         "), BorderLayout.NORTH);
        add(new JLabel("         "), BorderLayout.SOUTH);
        add(new JLabel("         "), BorderLayout.EAST);
        add(new JLabel("         "), BorderLayout.WEST);
        // -----------Espacios en los Bordes-----------------

        add(new Ventana18(fondo), BorderLayout.CENTER);

        setVisible(true);
    }
}

class Ventana18 extends JPanel {

    JMenuBar barra;
    JMenu menu1, menu2, menu3, menu4, menu5;
    JMenuItem item1, item2, item3, item4, item5, item6, item7, item8, item9, item10;
    JSeparator separador;

    public Ventana18(Color fondo) {

        setBackground(fondo);

        add(barra = new JMenuBar());

        barra.add(menu1 = new JMenu("Inicio"));
        barra.add(menu2 = new JMenu("Servicios"));
        barra.add(menu3 = new JMenu("Galería"));
        barra.add(menu4 = new JMenu("Contacto"));

            menu1.add(item1 = new JMenuItem("Ofertas"));
            menu1.add(item2 = new JMenuItem("Productos"));
            menu1.addSeparator();
            menu1.add(menu5 = new JMenu("Novedades"));
                menu5.add(item10 = new JMenuItem("Año 2020"));

            menu2.add(item4 = new JMenuItem("Básicos"));
            menu2.add(item5 = new JMenuItem("Exclusivos"));
            menu2.add(item6 = new JMenuItem("Outlet"));

            menu3.add(item7 = new JMenuItem("Clientes"));
            menu3.add(item8 = new JMenuItem("Eventos"));

            menu4.add(item9 = new JMenuItem("Reservas"));
    }
}
```