Laboratorio #1

Grupo: 13

Integrantes:

- Añez Vladimirovna Leonardo Henry
- Caricari Torrejon Pedro Luis
- Mercado Oudalova Danilo Anatoli
- Mollinedo Franco Milena
- Oliva Rojas Gerson

Materia: Interacción Hombre-Computador

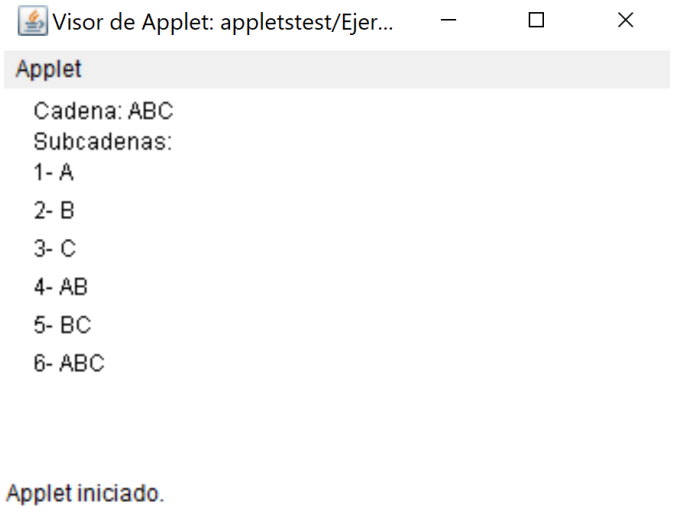
Fecha: 23 de enero de 2020

Porcentaje Completado: 100 %

Comentario(s): Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed lacinia elit tincidunt mi pharetra, eu sagittis elit rhoncus. Nullam et ipsum et justo ultrices congue sed non libero. Ut nec felis sapien. Donec finibus vulputate risus, vel laoreet turpis sollicitudin eu. Sed non elit ullamcorper, iaculis turpis rutrum, aliquet nisl. Aliquam libero sem, pellentesque id varius et, maximus ut nibh. Donec dignissim turpis urna, sed pellentesque enim mollis sed. Nam mattis sapien vel risus placerat mattis. Donec mattis egestas urna, in porttitor ante varius ac. Proin dignissim consectetur diam eu feugiat. Integer vitae magna pellentesque, molestie leo nec, dignissim nisi.

Ejercicio 1:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed lacinia elit tincidunt mi pharetra, eu sagittis elit rhoncus. Nullam et ipsum et justo ultrices congue sed non libero. Ut nec felis sapien. Donec finibus vulputate risus, vel laoreet turpis sollicitudin eu. Sed non elit ullamcorper, iaculis turpis rutrum, aliquet nisl. Aliquam libero sem, pellentesque id varius et, maximus ut nibh. Donec dignissim turpis urna, sed pellentesque enim mollis sed. Nam mattis sapien vel risus placerat mattis. Donec mattis egestas urna, in porttitor ante varius ac. Proin dignissim consectetur diam eu feugiat. Integer vitae magna pellentesque, molestie leo nec, dignissim nisi.




```
package appletstest;

import java.awt.Graphics;
import java.awt.Graphics2D;
import java.awt.geom.AffineTransform;
import java.util.Random;

public class Ejercicio1 extends java.applet.Applet {

    public void init() {
        randomSeed();
        try {
            java.awt.EventQueue.invokeAndWait(new Runnable() {
                public void run() {
                    initComponents();
                }
            });
        } catch (Exception ex) {
            ex.printStackTrace();
        }
    }

    int horizontalSize = 640;
```

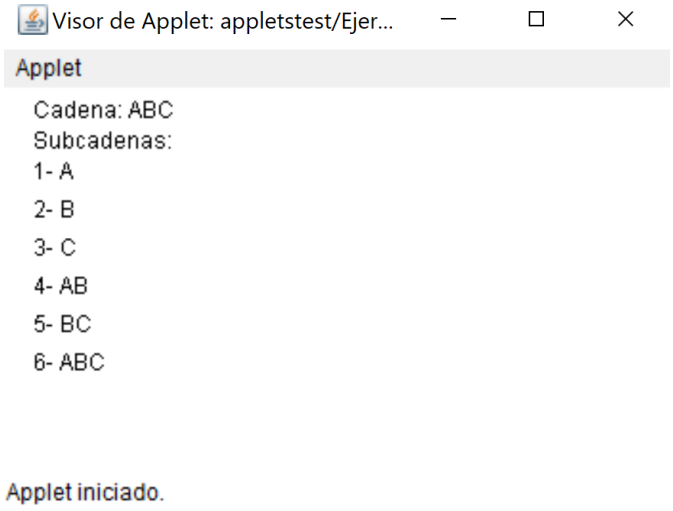
```
    int verticalSize = 640;
    int xOffset = 32, yOffset = 32;
    int minAge = 18, maxAge = 50;
    int ageRange = maxAge - minAge;
    int quantity = 10;
    int xSpace = horizontalSize / ageRange;
    int ySpace = verticalSize / quantity;
    int verticalUnit = verticalSize / quantity;



    int numberStudents = 200;

    int randomSample[] = new int[100];
    int width;

    public void randomSeed() {

        width = horizontalSize / 32;

        Random random = new Random();
        for (int i = 0; i < numberStudents; ++i) {
            int age = 18 + random.nextInt(33);
            randomSample[age]++;
        }
        /*
                for(int i=18;i<=50;++i){
                    System.out.println(randomSample[i]);
                }*/
    }

    public static void drawRotate(Graphics2D g2d, double x, double y, int angle,
        String text) {
        g2d.translate((float) x, (float) y);
        g2d.rotate(Math.toRadians(angle));
        g2d.drawString(text, 0, 0);
        g2d.rotate(-Math.toRadians(angle));
        g2d.translate(-(float) x, -(float) y);
    }


    @Override
    public void paint(Graphics g) {

        g.drawString("Generacion de una muestra aleatorio de " + numberStudents +
```

```
            " estudiantes", 16, 16);

        g.drawLine(xOffset, yOffset, xOffset, yOffset + verticalSize);
        g.drawLine(xOffset, yOffset + verticalSize, xOffset + horizontalSize,
            yOffset + verticalSize);

        for (int i = 0; i <= horizontalSize / xSpace; ++i) {
            g.drawLine(xOffset + i * xSpace, yOffset + verticalSize + 5, xOffset +
                i * xSpace, yOffset + verticalSize - 5);
        }

        for (int i = 0; i <= verticalSize / ySpace; ++i) {
            g.drawLine(xOffset - 5, yOffset + i * ySpace, xOffset + 5, yOffset + i
                * ySpace);
        }

        for (int i = 18, j = 0; i <= 50; ++i, j++) {
            g.fillOval(xOffset + j * xSpace - 4, (yOffset + verticalSize) -
                (randomSample[i] * verticalUnit) - 4, 8, 8);
            g.drawString("" + i, xOffset + j * xSpace - 8, yOffset + verticalSize
                + 20);
        }

        g.drawString("Edad", (xOffset + horizontalSize) / 2, yOffset +
            verticalSize + 40);

        Graphics2D g2 = (Graphics2D) g;
        drawRotate(g2, xOffset - 16, (yOffset + verticalSize) / 2, -90,
            "Cantidad");

    }

    /**
     * This method is called from within the init() method to initialize the
     * form. WARNING: Do NOT modify this code. The content of this method is
     * always regenerated by the Form Editor.
     */
    // <editor-fold defaultstate="collapsed" desc="Generated
       Code">//GEN-BEGIN:initComponents
    private void initComponents() {

        setLayout(new java.awt.BorderLayout());
    } // </editor-fold>//GEN-END:initComponents
```

```
    // Variables declaration - do not modify//GEN-BEGIN:variables
    // End of variables declaration//GEN-END:variables
}
```

Ejercicio 2:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed lacinia elit tincidunt mi pharetra, eu sagittis elit rhoncus. Nullam et ipsum et justo ultrices congue sed non libero. Ut nec felis sapien. Donec finibus vulputate risus, vel laoreet turpis sollicitudin eu. Sed non elit ullamcorper, iaculis turpis rutrum, aliquet nisl. Aliquam libero sem, pellentesque id varius et, maximus ut nibh. Donec dignissim turpis urna, sed pellentesque enim mollis sed. Nam mattis sapien vel risus placerat mattis. Donec mattis egestas urna, in porttitor ante varius ac. Proin dignissim consectetur diam eu feugiat. Integer vitae magna pellentesque, molestie leo nec, dignissim nisi.




```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package appletstest;

import java.awt.Graphics;
import java.awt.Graphics2D;
import java.awt.geom.AffineTransform;
import java.util.Random;

/**
 *
 * @author Asus
 */
public class Ejercicio1 extends java.applet.Applet {

    /**
     * Initializes the applet Ejercicio1
     */
    public void init() {
        randomSeed();
```

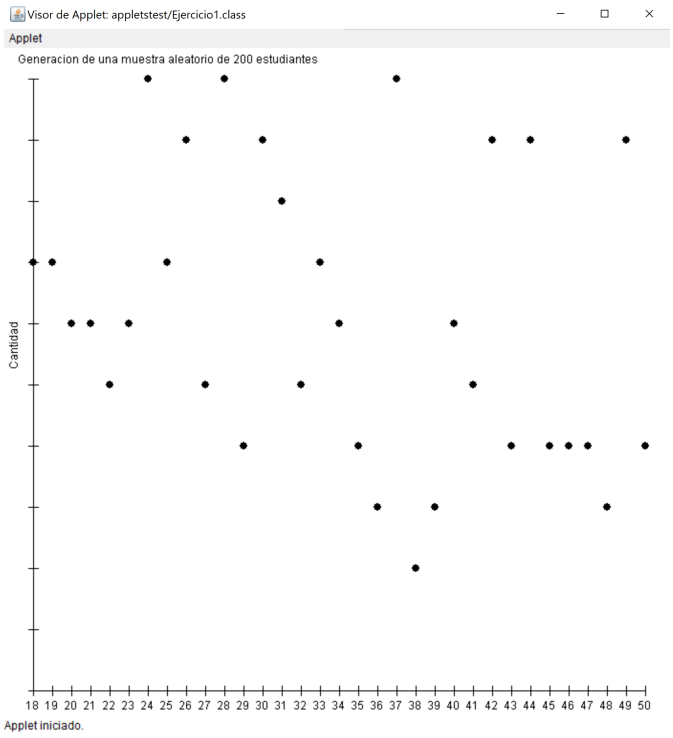
```
        try {
            java.awt.EventQueue.invokeAndWait(new Runnable() {
                public void run() {
                    initComponents();
                }
            });
        } catch (Exception ex) {
            ex.printStackTrace();
        }
    }

    int horizontalSize = 640;
    int verticalSize = 640;
    int xOffset=32,yOffset=32;
    int minAge = 18, maxAge =50;
    int ageRange = maxAge-minAge;
    int quantity = 10;
    int xSpace = horizontalSize/ageRange;
    int ySpace = verticalSize/quantity;
    int verticalUnit = verticalSize/quantity;



    int numberStudents = 200;

    int randomSample[] = new int[100];
    int width;

    public void randomSeed(){

        width = horizontalSize/32;

        Random random = new Random();
        for(int i=0;i<numberStudents;++i){
            int age = 18+random.nextInt(33);
            randomSample[age]++;
        }/*
        for(int i=18;i<=50;++i){
            System.out.println(randomSample[i]);
        }*/
    }

    public static void drawRotate(Graphics2D g2d, double x, double y, int angle,
       String text)
{
```

```
    g2d.translate((float)x,(float)y);
    g2d.rotate(Math.toRadians(angle));
    g2d.drawString(text,0,0);
    g2d.rotate(-Math.toRadians(angle));
    g2d.translate(-(float)x,-(float)y);
}


    @Override
    public void paint(Graphics g){

        g.drawString("Generacion de una muestra aleatorio de "+numberStudents + "
            estudiantes", 16, 16);

        g.drawLine(xOffset, yOffset, xOffset, yOffset+verticalSize);
        g.drawLine(xOffset, yOffset+verticalSize, xOffset+horizontalSize,
            yOffset+verticalSize);

        for(int i=0;i<=horizontalSize/xSpace;++i){
            g.drawLine(xOffset+i*xSpace, yOffset+verticalSize+5, xOffset+i*xSpace,
                yOffset+verticalSize-5);
        }

        for(int i=0;i<=verticalSize/ySpace;++i){
            g.drawLine(xOffset-5, yOffset+i*ySpace ,xOffset+5,yOffset+i*ySpace );
        }

        for(int i=18,j=0;i<=50;++i,j++){
            g.fillOval(xOffset+j*xSpace-4,
                (yOffset+verticalSize)-(randomSample[i]*verticalUnit)-4  , 8, 8);
            g.drawString(""+i, xOffset+j*xSpace-8, yOffset+verticalSize+20);
        }

        g.drawString("Edad", (xOffset+horizontalSize)/2, yOffset+verticalSize+40);

         Graphics2D g2 = (Graphics2D) g;
       drawRotate(g2, xOffset-16, (yOffset+verticalSize)/2, -90, "Cantidad");

    }

    /**
     * This method is called from within the init() method to initialize the
     * form. WARNING: Do NOT modify this code. The content of this method is
     * always regenerated by the Form Editor.
     */
```

```
    // <editor-fold defaultstate="collapsed" desc="Generated
       Code">//GEN-BEGIN:initComponents
    private void initComponents() {

        setLayout(new java.awt.BorderLayout());
    }// </editor-fold>//GEN-END:initComponents


    // Variables declaration - do not modify//GEN-BEGIN:variables
    // End of variables declaration//GEN-END:variables
}
```

Ejercicio 3:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed lacinia elit tincidunt mi pharetra, eu sagittis elit rhoncus. Nullam et ipsum et justo ultrices congue sed non libero. Ut nec felis sapien. Donec finibus vulputate risus, vel laoreet turpis sollicitudin eu. Sed non elit ullamcorper, iaculis turpis rutrum, aliquet nisl. Aliquam libero sem, pellentesque id varius et, maximus ut nibh. Donec dignissim turpis urna, sed pellentesque enim mollis sed. Nam mattis sapien vel risus placerat mattis. Donec mattis egestas urna, in porttitor ante varius ac. Proin dignissim consectetur diam eu feugiat. Integer vitae magna pellentesque, molestie leo nec, dignissim nisi.




```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package appletstest;

import java.awt.Graphics;
import java.awt.Graphics2D;
import java.awt.geom.AffineTransform;
import java.util.Random;

/**
 *
 * @author Asus
 */
public class Ejercicio1 extends java.applet.Applet {
```

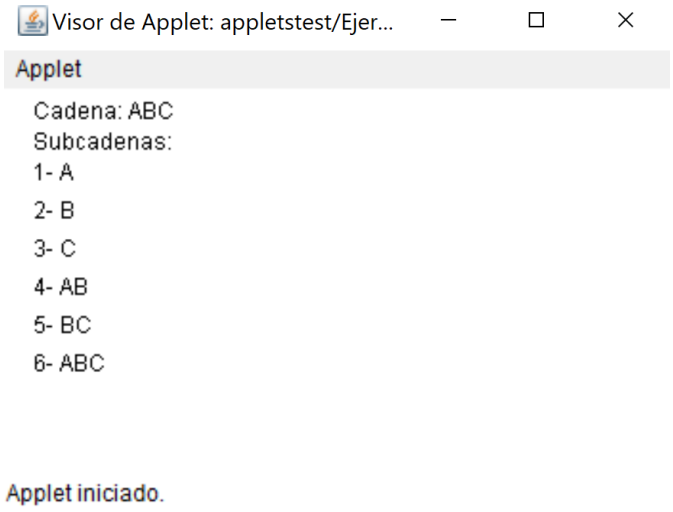
```
    /**
     * Initializes the applet Ejercicio1
     */
    public void init() {
        randomSeed();
        try {
            java.awt.EventQueue.invokeAndWait(new Runnable() {
                public void run() {
                    initComponents();
                }
            });
        } catch (Exception ex) {
            ex.printStackTrace();
        }
    }

    int horizontalSize = 640;
    int verticalSize = 640;
    int xOffset=32,yOffset=32;
    int minAge = 18, maxAge =50;
    int ageRange = maxAge-minAge;
    int quantity = 10;
    int xSpace = horizontalSize/ageRange;
    int ySpace = verticalSize/quantity;
    int verticalUnit = verticalSize/quantity;



    int numberStudents = 200;

    int randomSample[] = new int[100];
    int width;

    public void randomSeed(){

        width = horizontalSize/32;

        Random random = new Random();
        for(int i=0;i<numberStudents;++i){
            int age = 18+random.nextInt(33);
            randomSample[age]++;
        }/*
        for(int i=18;i<=50;++i){
            System.out.println(randomSample[i]);
```

```
        }*/
    }

    public static void drawRotate(Graphics2D g2d, double x, double y, int angle,
        String text)
{
    g2d.translate((float)x,(float)y);
    g2d.rotate(Math.toRadians(angle));
    g2d.drawString(text,0,0);
    g2d.rotate(-Math.toRadians(angle));
    g2d.translate(-(float)x,-(float)y);
}


    @Override
    public void paint(Graphics g){

        g.drawString("Generacion de una muestra aleatorio de "+numberStudents + "
            estudiantes", 16, 16);

        g.drawLine(xOffset, yOffset, xOffset, yOffset+verticalSize);
        g.drawLine(xOffset, yOffset+verticalSize, xOffset+horizontalSize,
            yOffset+verticalSize);

        for(int i=0;i<=horizontalSize/xSpace;++i){
            g.drawLine(xOffset+i*xSpace, yOffset+verticalSize+5, xOffset+i*xSpace,
                yOffset+verticalSize-5);
        }

        for(int i=0;i<=verticalSize/ySpace;++i){
            g.drawLine(xOffset-5, yOffset+i*ySpace ,xOffset+5,yOffset+i*ySpace );
        }

        for(int i=18,j=0;i<=50;++i,j++){
            g.fillOval(xOffset+j*xSpace-4,
                (yOffset+verticalSize)-(randomSample[i]*verticalUnit)-4  , 8, 8);
            g.drawString(""+i, xOffset+j*xSpace-8, yOffset+verticalSize+20);
        }

        g.drawString("Edad", (xOffset+horizontalSize)/2, yOffset+verticalSize+40);

         Graphics2D g2 = (Graphics2D) g;
       drawRotate(g2, xOffset-16, (yOffset+verticalSize)/2, -90, "Cantidad");

    }
```

```
    /**
     * This method is called from within the init() method to initialize the
     * form. WARNING: Do NOT modify this code. The content of this method is
     * always regenerated by the Form Editor.
     */
    // <editor-fold defaultstate="collapsed" desc="Generated
       Code">//GEN-BEGIN:initComponents
    private void initComponents() {

        setLayout(new java.awt.BorderLayout());
    }// </editor-fold>//GEN-END:initComponents


    // Variables declaration - do not modify//GEN-BEGIN:variables
    // End of variables declaration//GEN-END:variables
}
```

Ejercicio 4:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed lacinia elit tincidunt mi pharetra, eu sagittis elit rhoncus. Nullam et ipsum et justo ultrices congue sed non libero. Ut nec felis sapien. Donec finibus vulputate risus, vel laoreet turpis sollicitudin eu. Sed non elit ullamcorper, iaculis turpis rutrum, aliquet nisl. Aliquam libero sem, pellentesque id varius et, maximus ut nibh. Donec dignissim turpis urna, sed pellentesque enim mollis sed. Nam mattis sapien vel risus placerat mattis. Donec mattis egestas urna, in porttitor ante varius ac. Proin dignissim consectetur diam eu feugiat. Integer vitae magna pellentesque, molestie leo nec, dignissim nisi.




```
package appletstest;
t
import java.awt.Graphics;
t
import java.util.ArrayList;
c public s class Ejercicio2 s extends java.applet.Applet {
    g String s = "ABC";
    c public c static ArrayList < String > permutaciones = new
    ArrayList < String > ();
    c public g String swap(g String a, int i, int j) {
        char temp;
        char[] charArray = a.toCharArray();
        temp = charArray[i];
        charArray[i] = charArray[j];
        charArray[j] = temp;
        n
        return String.valueOf(charArray);
    }
    c static void subString(char str[], int n) {
        // Pick starting point
        r
        for (int len = 1; len <= n; len++) {
            // Pick ending point
```

```
            r
            for (int i = 0; i <= n - len; i++) {
                // Print characters from current
                // starting point to current ending
                // point.
                int j = i + len - 1;
                g String x = "";
                r
                for (int k = i; k <= j; k++) {
                    x += str[k];
                    System.out.print(str[k]);
                }
                permutaciones.add(x);
                //System.out.println();
            }
        }
    }
    c public void init() {
        char str[] = w new char[s.length()];
        for (int i = 0; i < s.length(); ++i) {
            str[i] = s.charAt(i);
        }
        subString(str, s.length());
        y
        try {
            java.awt.EventQueue.invokeAndWait(w new Runnable() {
                c public void run() {
                    initComponents();
                }
            });
        }
        h
        catch (n Exception ex) {
            ex.printStackTrace();
        }
    }
    @Override
    c public void paint(Graphics g) {
        g.drawString("Cadena: " + s, 16, 16);
        g.drawString("Subcadenas:", 16, 32);
        for (int i = 0; i < permutaciones.size(); ++i) {
            g.drawString("" + (i + 1) + "- " + permutaciones.get(i), 16, 48 + i *
                20);
        }
    }
```

```
    e private void initComponents() {
        setLayout(w new java.awt.BorderLayout());
    }
}
```