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import java.awt.* ;
import java.awt.event.* ;

public class GradeHistogramApplet extends java.applet.Applet
    implements ActionListener {
    int A, B, C, D, F, maxValue, Au, Bu, Cu, Du, Fu ;
    TextField tfield ;

    public void init() {
        A = 0 ;
        B = 0 ;
        C = 0 ;
        D = 0 ;
        F = 0 ;
        this.setLayout(null) ;
        tfield = new TextField() ;
        tfield.addActionListener(this) ;
        Label label = new Label("Enter grades(A, B, C, D, F): ") ;
        label.setBackground(Color.yellow) ;
        this.add(label) ;
        label.setBounds(30, 20, 150, 20) ;
        this.add(tfield) ;
        tfield.setBounds(30, 50, 40, 28) ;
    }

    public void actionPerformed(ActionEvent act) {
        String s = tfield.getText() ;
        if (s.equals("A") || s.equals("a")) A++ ;
        else if (s.equals("B") || s.equals("b")) B++ ;
        else if (s.equals("C") || s.equals("c")) C++ ;
        else if (s.equals("D") || s.equals("d")) D++ ;
        else if (s.equals("F") || s.equals("f")) F++ ;
        maxValue = A;
        if (B > maxValue) maxValue = B;
        if (C > maxValue) maxValue = C;
        if (D > maxValue) maxValue = D;
        if (F > maxValue) maxValue = F;
        Au = (160/maxValue*A);
        Bu = (160/maxValue*B);
        Cu = (160/maxValue*C);
        Du = (160/maxValue*D);
        Fu = (160/maxValue*F);

        repaint() ;
        tfield.setText("") ;
    }

    public void paint(Graphics g) {
        setBackground(Color.white);
        g.drawString("A " + String.valueOf(A), 50, 100) ;
        g.drawString("B " + String.valueOf(B), 50, 120) ;
        g.drawString("C " + String.valueOf(C), 50, 140) ;
        g.drawString("D " + String.valueOf(D), 50, 160) ;
        g.drawString("F " + String.valueOf(F), 50, 180) ;

        g.setColor(Color.yellow);
        g.fillRect(200, (300-(Au)), 30, (Au), true);
        g.setColor(Color.green);
        g.fillRect(240, (300-(Bu)), 30, (Bu), true);
        g.setColor(Color.blue);
        g.fillRect(280, (300-(Cu)), 30, (Cu), true);
        g.setColor(Color.magenta);
        g.fillRect(320, (300-(Du)), 30, (Du), true);
        g.setColor(Color.red);
        g.fillRect(360, (300-(Fu)), 30, (Fu), true);
        g.setColor(Color.black);
        g.drawLine(180, 300, 410, 300);
        g.drawString("A      B      C      D      F", 213, 330);
        g.setFont(new Font("serif", Font.BOLD+Font.ITALIC, 24)) ;
    }
}

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} }
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