```java
public class awtTest1 extends Applet
implements TextListener,ActionListener,ItemListener,AdjustmentListener

{
        Label lbl;
        Button btn1,btn2;
        TextField txt1,txt2;
        TextArea ta;
        Checkbox chk1, chk2, chk3, chk4;
        CheckboxGroup cg;    //남자 여자를 한개 묶을 용도
        Choice ch;
        List list;
        Scrollbar sc;
        public void init() {
                this.setLayout(null);
                lbl=new Label("이름");
                lbl.setBounds(10, 10, 50, 20);
                this.add(lbl);
                btn1=new Button("저장");
                btn2=new Button("취소");
                btn1.setBounds(70, 100, 50, 20);
                this.add(btn1);

                btn2.setBounds(130, 100, 50, 20);
                this.add(btn2);

                txt1=new TextField(10);
                txt1.setBounds(70, 10, 100,20);
                this.add(txt1);

                chk1=new Checkbox("C++");
                chk2=new Checkbox("JAVA");
                chk1.setBounds(10, 50, 50,20);
                this.add(chk1);

                chk2.setBounds(70, 50, 50, 20);
                this.add(chk2);

                cg=new CheckboxGroup();
                chk3=new Checkbox("남자",cg,true);
                chk4=new Checkbox("여자",cg,false);

                chk3.setBounds(130, 50, 50,20);
                chk4.setBounds(190, 50, 50,20);

                this.add(chk3);
                this.add(chk4);

                ch=new Choice();
                ch.addItem("청소부");
                ch.addItem("의사");
                ch.addItem("학생");
                ch.setBounds(10, 75, 60, 20);
                this.add(ch);

                list=new List();
                list.add("잠자기");
                list.add("독서");
                list.add("게임");
                list.setBounds(130, 75, 60, 20);
                this.add(list);

                sc=new Scrollbar(Scrollbar.VERTICAL, 50, 0, 1,101);
```

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                sc.setBounds(300, 75, 20, 200);
                this.add(sc);

                ta=new TextArea(50,100);
                ta.setBounds(10, 120, 200, 100);
                this.add(ta);

                //txt1.addTextListener(this);
                txt1.addActionListener(this);   //리스너와 이벤트란 말은 동일함
                chk1.addItemListener(this);
                chk2.addItemListener(this);
                chk3.addItemListener(this);
                chk4.addItemListener(this);
                ch.addItemListener(this);
                list.addItemListener(this);
                sc.addAdjustmentListener(this);
                btn1.addActionListener(this);
                btn2.addActionListener(this);

        }

        @Override
        public void actionPerformed(ActionEvent e) { //엔터, 버튼클릭
                if(e.getSource()==txt1) {
                        ta.append(txt1.getText()+"\n");
                }
                if(e.getSource()==btn1) {
                        ta.append(txt1.getText()+"\n");
                }
                else if(e.getSource()==btn2) {
                        txt1.setText("");
                }
        }

        @Override
        public void itemStateChanged(ItemEvent e) {
                if(e.getSource()==chk1 && chk1.getState()==true) {
                        ta.append(chk1.getLabel()+"\n");

                } else if(e.getSource()==chk2 && chk2.getState()==true) {
                        ta.append(chk2.getLabel()+"\n");
                }
                if(e.getSource()==chk3) {
                        ta.append("남자\n");
                } else if(e.getSource()==chk4) {
                        ta.append("여자\n");
                }

                if(e.getSource()==ch) {
                        ta.append(ch.getSelectedItem()+"\n");
                }

                if(e.getSource()==list) {
                        ta.append(list.getSelectedItem()+"\n");
                }
        }

        @Override
        public void textValueChanged(TextEvent e) {
                if(e.getSource()==txt1) {
                        ta.append(txt1.getText()+"\n");
                }

        }
```
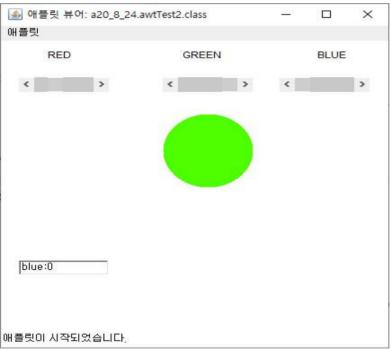
```
        @Override
        public void adjustmentValueChanged(AdjustmentEvent arg0) {
                // TODO Auto-generated method stub
                if(arg0.getSource()==sc) {
                        ta.append(sc.getValue()+"\n");
                }
        }

}
```

실습) 스크롤바 연습(색상)

```
public class awtTest2 extends Applet
            implements AdjustmentListener{

        Label lblr, lblg, lblb;
        Scrollbar scr, scg, scb;
        TextField tf;
        int ir, ig, ib;


        public void init() {
                this.setLayout(null);
                ir=ig=ib=0;
                lblr=new Label("RED");
                lblg=new Label("GREEN");
                lblb=new Label("BLUE");
                lblr.setBounds(50, 10, 50, 20);
                lblg.setBounds(200, 10, 50, 20);
                lblb.setBounds(350, 10, 50, 20);

                this.add(lblr);
                this.add(lblg);
                this.add(lblb);

                scr=new Scrollbar(Scrollbar.HORIZONTAL, 0, 0, 0, 256);
                scg=new Scrollbar(Scrollbar.HORIZONTAL, 0, 0, 0, 256);
                scb=new Scrollbar(Scrollbar.HORIZONTAL, 0, 0, 0, 256);
                scr.setBounds(20, 50, 100, 20);
                scg.setBounds(180, 50, 100, 20);
                scb.setBounds(310, 50, 100, 20);

                this.add(scr);
                this.add(scg);
                this.add(scb);

                tf=new TextField(10);
                tf.setBounds(20, 300, 100, 20);
                this.add(tf);

                scr.addAdjustmentListener(this);
                scg.addAdjustmentListener(this);
                scb.addAdjustmentListener(this);


        }
        public void start() {

        }

        public void paint(Graphics g) {
```

```java
                g.setColor(new Color(ir,ig,ib));   //검정
                g.fillOval(180, 100, 100, 100);
        }
        @Override
        public void adjustmentValueChanged(AdjustmentEvent e) {
                if(e.getSource()==scr) {
                        tf.setText("red:"+scr.getValue());
                        ir=scr.getValue();

                } else if(e.getSource()==scg) {
                        tf.setText("green:"+scg.getValue());
                        ig=scg.getValue();

                } else if(e.getSource()==scb) {
                        tf.setText("blue:"+scb.getValue());
                        ib=scb.getValue();
                }
                repaint();

        }

}
```

```java
public void paint(Graphics g) {
    g.setColor(new Color(ir,ig,ib));  //검정
    g.fillOval(180, 100, 100, 100);
}
@Override
public void adjustmentValueChanged(AdjustmentEvent e) {
    if(e.getSource()==scr) {
        tf.setText("red:"+scr.getValue());
        ir=scr.getValue();

    } else if(e.getSource()==scg) {
        tf.setText("green:"+scg.getValue());
        ig=scg.getValue();

    } else if(e.getSource()==scb) {
        tf.setText("blue:"+scb.getValue());
        ib=scb.getValue();
    }
    repaint();

}
```