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202203028

LAB-4

Question 1:

Code:

```
import java.applet.Applet;
import java.awt.BorderLayout;
import java.awt.Font;
import java.awt.Graphics;
import java.awt.Label;
import java.awt.TextField;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
public class que1 extends Applet implements
ActionListener{

    TextField field_name,field_id;
    Label l1,l2;
    String name="",id="";

    public void init(){
        field_id=new TextField();
        field_name=new TextField();
        field_name.setBounds(100, 100, 150, 20);
        field_id.setBounds(100, 130, 150, 20);
        l1=new Label("username");
        l2=new Label("userId");
        l1.setBounds(10, 100, 65, 20);
        l2.setBounds(10, 130, 50, 20);
        add(l1);
        add(l2);
    }
}
```

```

        add(field_name);
        add(field_id);

        setLayout(new BorderLayout());
        field_name.addActionListener(this);
        field_id.addActionListener(this);

        setSize(600, 400);
    }

    public void actionPerformed(ActionEvent e) {
        name=field_name.getText();
        id=field_id.getText();
        repaint();
    }

    public void paint(Graphics g){
        Font f1=new
Font("serif",Font.BOLD|Font.ITALIC,22);
        String tname="Hello, my name is "+name;
        String tid ="Id: "+id;
        g.setFont(f1);
        g.drawString(tname,300, 115);
        g.drawString(tid,300, 145);

    }
}
/* <applet code="que1.class" width="300"
height="300">
</applet> */

```

Output :



Question 2:

Code:

```
import java.applet.Applet;
import java.awt.BorderLayout;
import java.awt.Choice;
import java.awt.Color;
import java.awt.event.ItemEvent;
import java.awt.event.ItemListener;
public class que2 extends Applet implements
ItemListener{

    Choice c1;
    String selected_color;
    Color curr_color;
```

```
public void init(){

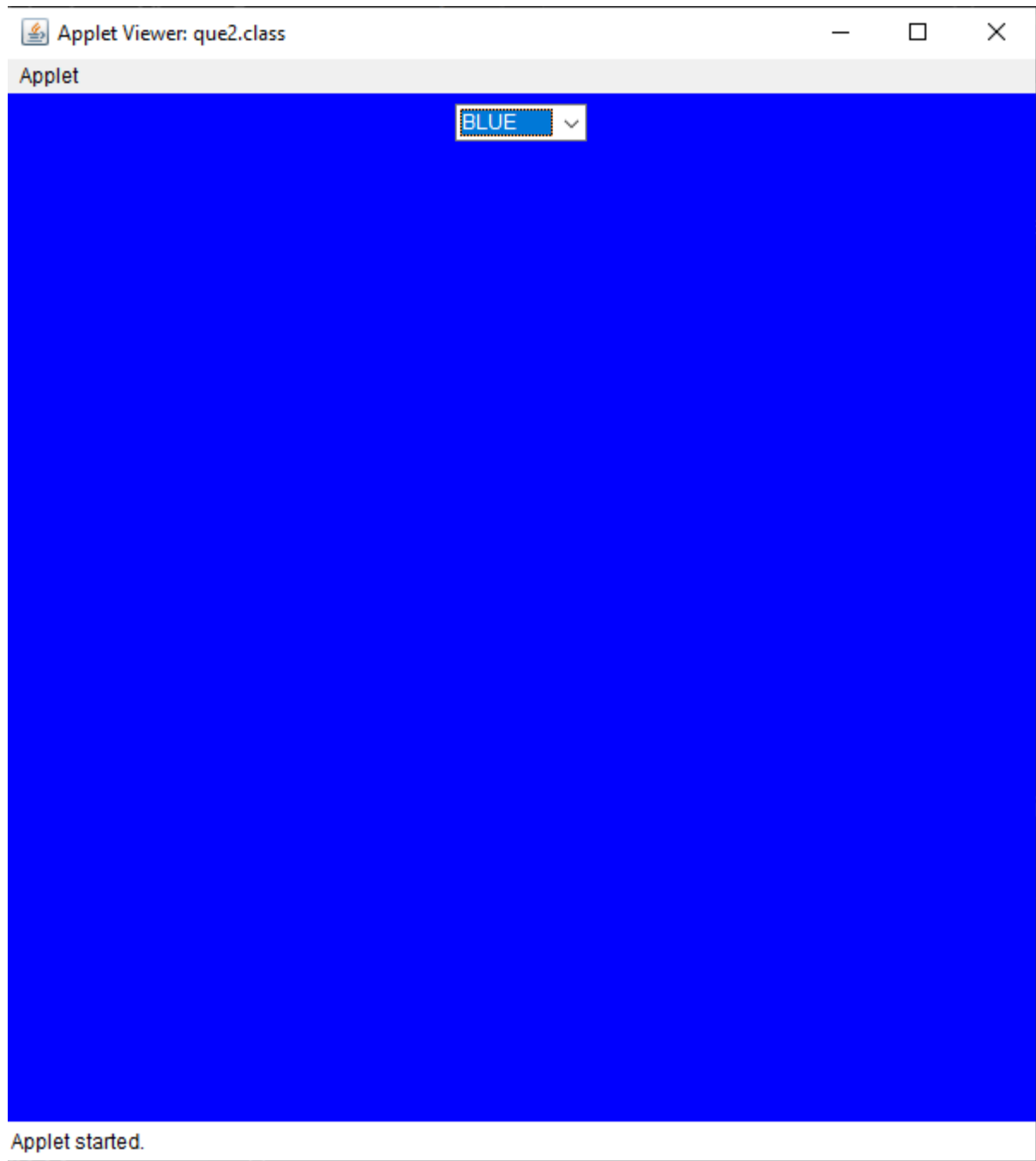
    c1 = new Choice();
    c1.add("RED");
    c1.add("BLUE");
    c1.add("GREEN");
    c1.add("YELLOW");
    c1.add("BLACK");
    c1.addItemListener(this);
    add(c1);

}

public void itemStateChanged(ItemEvent e) {
    selected_color=c1.getSelectedItem();
    switch(selected_color){
        case"RED":
            curr_color=Color.RED;
            break;
        case"BLUE":
            curr_color=Color.BLUE;
            break;
        case"BLACK":
            curr_color=Color.BLACK;
            break;
        case"YELLOW":
            curr_color=Color.YELLOW;
            break;
        case"GREEN":
            curr_color=Color.GREEN;
            break;
    }
    setBackground(curr_color);
}
```

```
}  
/* <applet code="que2.class" width="600"  
height="600">  
</applet> */
```

Output :



Question 3:

Code:

```
import java.applet.Applet;
import java.awt.BorderLayout;
import java.awt.Button;
import java.awt.Font;
import java.awt.Graphics;
import java.awt.Label;
import java.awt.TextField;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
public class que_3 extends Applet implements ActionListener{

    TextField input1,input2,output;
    Button b1,b2,b3,b4;
    Label l1,l2,l3;

    public void init(){
        this.setLayout(null);

        input1=new TextField();
        input2=new TextField();
        output=new TextField();
        b1=new Button("+");
        b2=new Button("-");
        b3=new Button("*");
        b4=new Button("/");
        l1 = new Label("NUMBER 1");
        l2 = new Label("NUMBER 2");
        l3 = new Label("ANSWER");

        input1.setBounds(100, 100, 200, 20);
        input2.setBounds(100, 130, 200, 20);
        output.setBounds(100, 160, 200, 20);
        l1.setBounds(30, 100, 70, 20);
        l2.setBounds(30, 130, 70, 20);
        l3.setBounds(30, 160, 70, 20);
        b1.setBounds(100, 185, 50, 50);
        b2.setBounds(150, 185, 50, 50);
        b3.setBounds(200, 185, 50, 50);
        b4.setBounds(250, 185, 50, 50);
```

```

        add(input1);
        add(input2);
        add(output);
        add(l1);
        add(l2);
        add(l3);
        add(b1);
        add(b2);
        add(b3);
        add(b4);
        //setLayout(new BorderLayout());
        b1.addActionListener(this);
        b2.addActionListener(this);
        b3.addActionListener(this);
        b4.addActionListener(this);

        setSize(600, 400);
    }

    public void paint(Graphics g){

    }

    public void actionPerformed(ActionEvent e) {
        int n1=Integer.parseInt(input1.getText());
        int n2=Integer.parseInt(input2.getText());
        int n3;
        if(e.getSource()==b1){
            n3=n1+n2;
            output.setText(String.valueOf(n3));
        }else if(e.getSource()==b2){
            n3=n1-n2;
            output.setText(String.valueOf(n3));
        }else if(e.getSource()==b3){
            n3=n1*n2;
            output.setText(String.valueOf(n3));
        }else {
            if(n2==0){
                output.setText("ERROR");
            }else{
                output.setText(String.valueOf((float)n1/n2));
            }
        }
    }

```

```

    }
}

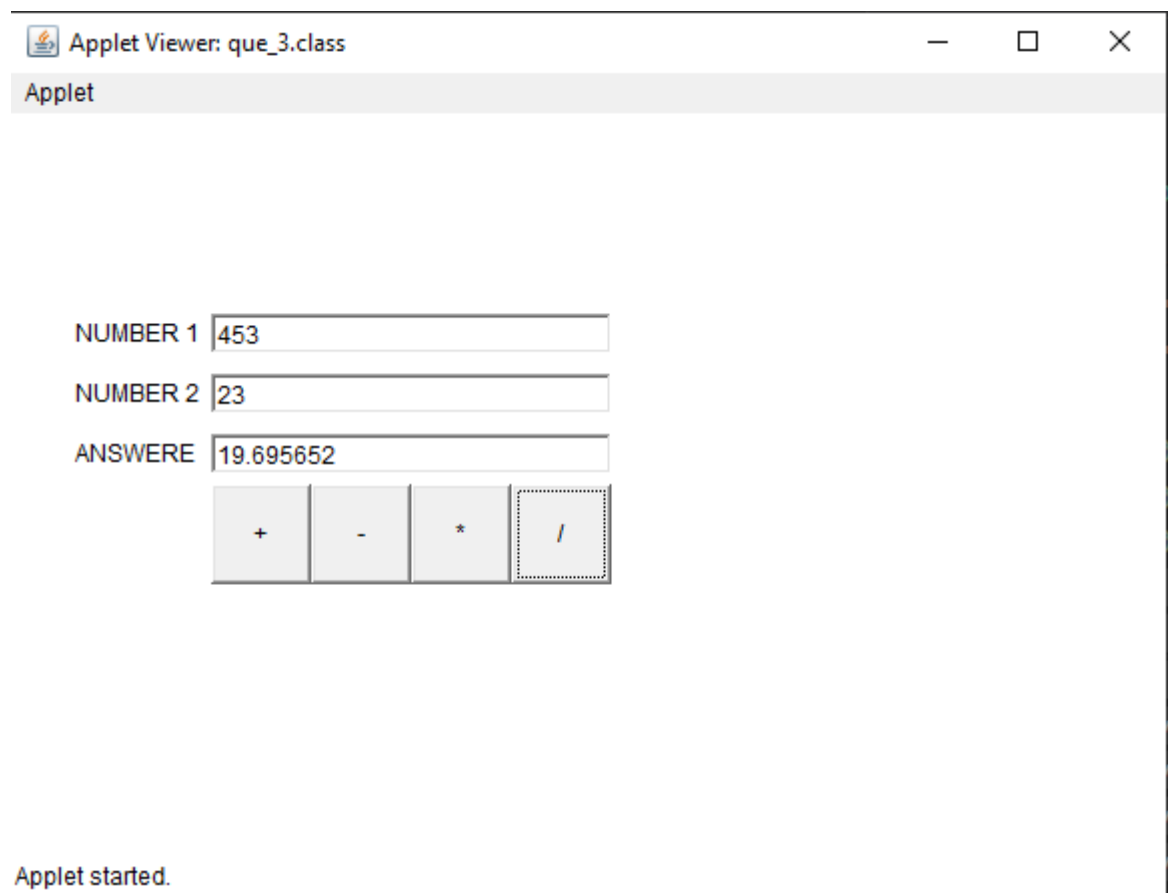
}

}

/* <applet code="que_3.class" width="300" height="300">
</applet> */

```

Output :



Question 3(different version):

Code:

```

import java.applet.Applet;
import java.awt.BorderLayout;
import java.awt.Button;
import java.awt.Font;
import java.awt.Graphics;

```



```

import java.awt.Label;
import java.awt.TextField;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
public class que3 extends Applet implements ActionListener{

    TextField field_input,ans;
    StringBuilder operation;
    float n1,n2,n3;
    Button eq,clear;

    public void init(){
        setLayout(null);

        field_input=new TextField();
        ans=new TextField();
        eq=new Button("=");
        clear=new Button("C");

        field_input.setBounds(100, 100, 200, 25);
        ans.setBounds(100, 130, 200, 25);
        eq.setBounds(100, 161, 50, 50);
        clear.setBounds(160, 161, 50, 50);

        add(eq);
        add(clear);
        add(field_input);
        add(ans);
        setLayout(new BorderLayout());
        eq.addActionListener(this);
        clear.addActionListener(this);
        field_input.addActionListener(this);

        setSize(600, 400);
    }

    public void actionPerformed(ActionEvent e) {
        if(e.getSource()==eq || e.getSource()==ans ||
e.getSource()==field_input ){
            operation=new StringBuilder(field_input.getText());
            int i_s=0,i_o=0,i_e=0,len=operation.length();
            while(i_o<len){

```

```

        if(operation.charAt(i_o)=='/'){
            i_s=i_o-1;
            i_e=i_o+1;
            while( (i_s-1>=0 && operation.charAt(i_s-1)<='9' &&
operation.charAt(i_s-1)>='0') || (i_s-1>=0 && operation.charAt(i_s-
1)=='.')){
                i_s--;
            }
            while( (i_e+1<=len-1 && operation.charAt(i_e+1)<='9' &&
operation.charAt(i_e+1)>='0') || (i_e+1<=len-1 &&
operation.charAt(i_e+1)=='.')){
                i_e++;
            }
            n1=Float.parseFloat(operation.substring(i_s, i_o));
            n2=Float.parseFloat(operation.substring(i_o+1,i_e+1));
            n3=n1/n2;
            operation=operation.delete(i_s, i_e+1);
            operation=operation.insert(i_s,n3);
            i_o=i_s;

        }
        i_o++;
        len=operation.length();
    }
    i_o=0;

    while(i_o<len){

        if(operation.charAt(i_o)=='*'){
            i_s=i_o-1;
            i_e=i_o+1;
            while( (i_s-1>=0 && operation.charAt(i_s-1)<='9' &&
operation.charAt(i_s-1)>='0') || (i_s-1>=0 && operation.charAt(i_s-
1)=='.')){
                i_s--;
            }
            while( (i_e+1<=len-1 && operation.charAt(i_e+1)<='9' &&
operation.charAt(i_e+1)>='0') || (i_e+1<=len-1 &&
operation.charAt(i_e+1)=='.')){
                i_e++;
            }
            n1=Float.parseFloat(operation.substring(i_s, i_o));
            n2=Float.parseFloat(operation.substring(i_o+1,i_e+1));
            n3=n1*n2;
            operation=operation.delete(i_s, i_e+1);

```

```

        operation=operation.insert(i_s,n3);
        i_o=i_s;

    }
    i_o++;
    len=operation.length();
}
i_o=0;
while(i_o<len){

    if(operation.charAt(i_o)=='+'){
        i_s=i_o-1;
        i_e=i_o+1;
        while( (i_s-1>=0 && operation.charAt(i_s-1)<='9' &&
operation.charAt(i_s-1)>='0') || (i_s-1>=0 && (operation.charAt(i_s-1)=='.'
|| operation.charAt(i_s-1)=='-'))){
            i_s--;
            if(operation.charAt(i_s)=='-'){
                break;
            }
        }
        while( (i_e+1<=len-1 && operation.charAt(i_e+1)<='9' &&
operation.charAt(i_e+1)>='0') || (i_e+1<=len-1 &&
operation.charAt(i_e+1)=='.' )){
            i_e++;
        }
        n1=Float.parseFloat(operation.substring(i_s, i_o));
        n2=Float.parseFloat(operation.substring(i_o+1,i_e+1));
        n3=n1+n2;
        operation=operation.delete(i_s, i_e+1);
        operation=operation.insert(i_s,n3);
        i_o=i_s;

    }
    i_o++;
    len=operation.length();
}
i_o=0;
while(i_o<len){

    if(operation.charAt(i_o)=='-'){
        i_s=i_o-1;
        i_e=i_o+1;
        while( (i_s-1>=0 && operation.charAt(i_s-1)<='9' &&
operation.charAt(i_s-1)>='0') || (i_s-1>=0 && operation.charAt(i_s-
1)=='.' )){
            i_s--;

```

```

        }
        while( (i_e+1<=len-1 && operation.charAt(i_e+1)<='9' &&
operation.charAt(i_e+1)>='0') || (i_e+1<=len-1 &&
operation.charAt(i_e+1)=='.')){
            i_e++;
        }
        n1=Float.parseFloat(operation.substring(i_s, i_o));
        n2=Float.parseFloat(operation.substring(i_o+1,i_e+1));
        n3=n1-n2;
        operation=operation.delete(i_s, i_e+1);
        operation=operation.insert(i_s,n3);
        i_o=i_s;
    }
    i_o++;
    len=operation.length();
}

    ans.setText(operation.toString());
}else{
    field_input.setText("0");
    ans.setText("0");
}

}

    public void paint(Graphics g){

    }

}
/* <applet code="que3.class" width="300" height="300">
</applet> */

```

Output :

Applet Viewer: que3.class



Applet

12/43*23+43-231/31*21+123/23|

-101.71744

=

C

Applet started.