Name: Somnath R. Shintre Roll No:

Class: TE CSE Batch:

**Title: -** Create Stop Watch with Swing GUI and Multithreading. Provide Facility for Lap Counting.

**Program: -**

import java.awt.\*;

import java.awt.event.\*;

import javax.swing.\*;

import java.text.DecimalFormat;

import java.text.NumberFormat;

public class StopWatch extends JFrame implements ActionListener,Runnable

{

    JLabel disp,lap1,lap2,lap3;

    JButton btn,lapbtn;

        boolean stop=false;

    int i,j,k,l;

    static int count=0;

    public StopWatch()

    {

        disp=new JLabel();

        disp.setBounds(80,20,120,20);

        btn=new JButton("Start");

        btn.setBounds(250,20,80,20);

        disp.setFont(new Font("Helvetica",Font.PLAIN,20));

        disp.setBackground(Color.cyan);

        disp.setForeground(Color.red);

        Container c=getContentPane();

        c.setLayout(null);

        c.add(disp);

        c.add(btn);

        btn.addActionListener(this);

        lapbtn=new JButton("Lap");

        lapbtn.setBounds(200,80,80,20);

        c.add(lapbtn);

        lap1=new JLabel("");

        lap1.setBounds(100,120,100,30);

        c.add(lap1);

        lap2=new JLabel("");

        lap2.setBounds(100,160,100,30);

        c.add(lap2);

        lap3=new JLabel("");

        lap3.setBounds(100,200,100,30);

        c.add(lap3);

        lapbtn.addActionListener(this);

    }

    public void run()

    {

        for(i=0;;i++)

        {

            for(j=0;j<60;j++)

            {

                for(k=0;k<60;k++)

                {

                    for(l=0;l<100;l++)

                    {

                        if(stop)

                        {

                            break;

                        }

                        NumberFormat nf=new DecimalFormat("00");

                        disp.setText(nf.format(i)+":"+nf.format(j)+":"+nf.format(k)+":"+nf.format(l));

                        try {

                            Thread.sleep(10);

                        } catch(Exception e) { }

                    }

                }

            }

        }

    }

    public void actionPerformed(ActionEvent ae)

    {

        Thread t=new Thread(this);

            if(ae.getActionCommand().equals("Start"))

            {

                t.start();

                btn.setText("Stop");

            }

            if(ae.getActionCommand().equals("Stop"))  {

            stop=true;

            }

            if(ae.getActionCommand().equals("Lap"))

            {

                String label=null;

                if(count==0)  {

                    label=disp.getText();

                    lap1.setText(label);

                }

                if(count==1) {

                    label=disp.getText();

                    lap2.setText(label);

                }

                if(count==2) {

                    label=disp.getText();

                    lap3.setText(label);

                }

                count++;

            }

    }

    public static void main(String args[])

    {

        StopWatch s=new StopWatch();

        s.setSize(500,500);

        s.setVisible(true);

        s.setTitle("StopWatch");

        s.setDefaultCloseOperation(EXIT\_ON\_CLOSE);

    }

}

**Output: -**



