

2022

March

Software Construction and Development

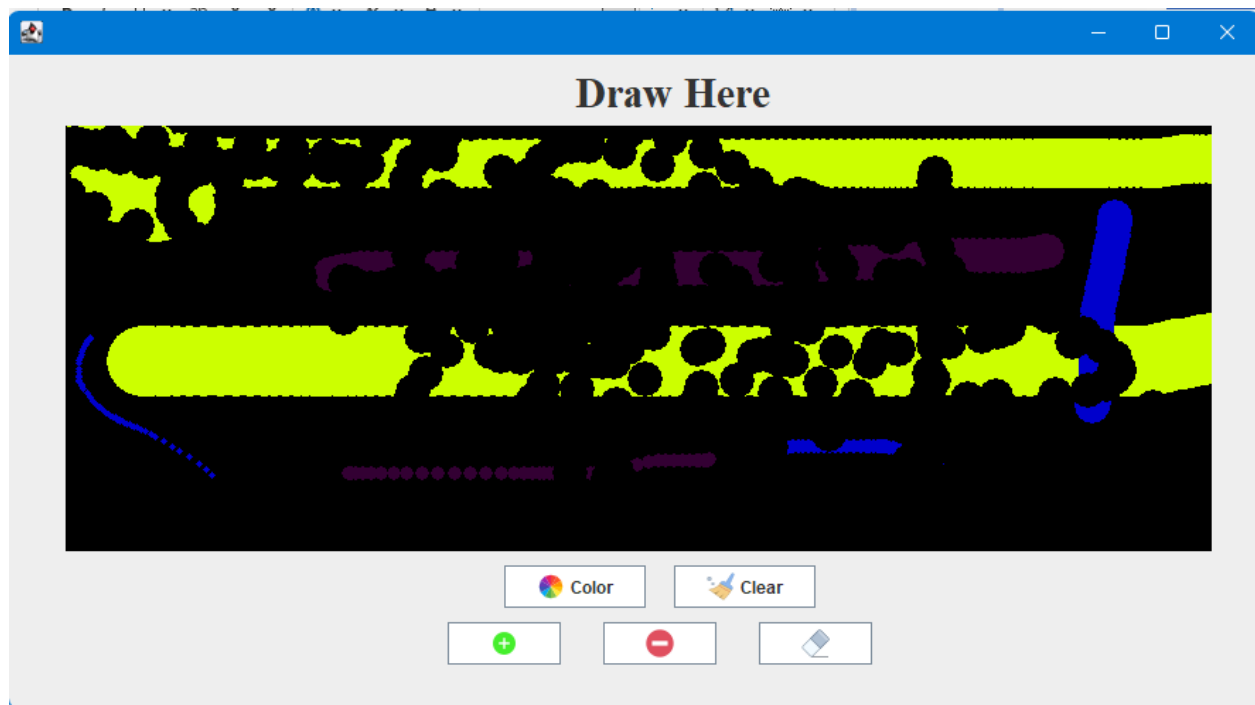
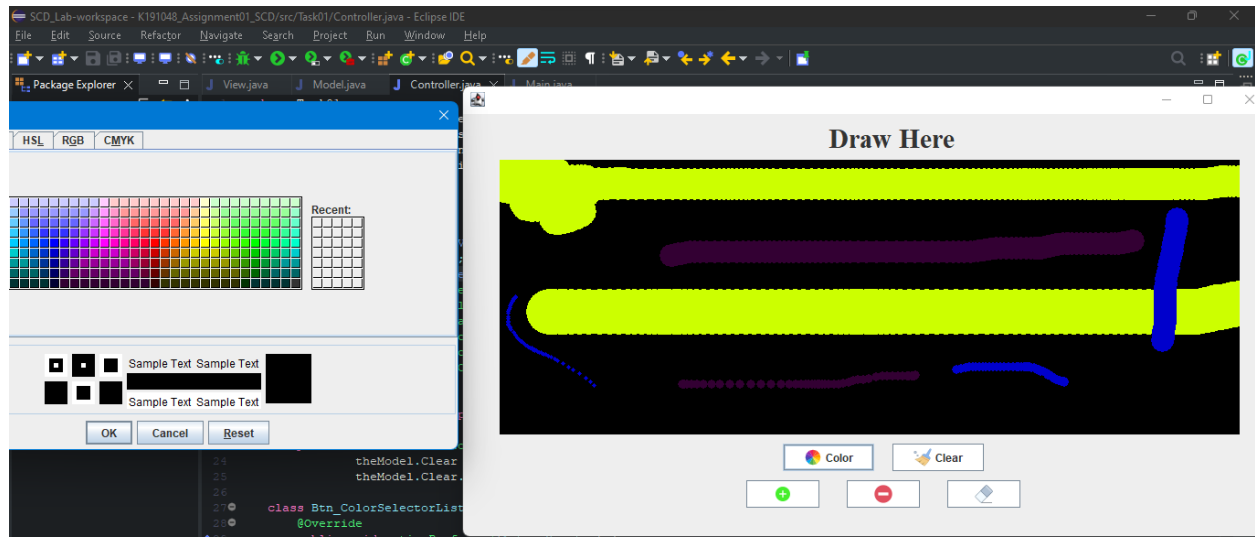
Assignment 01

Roll No: K191048

Name: Amman Soomro

Section: SE – A

OUTPUT



CODE

MAIN.JAVA

```
package Task01;

public class Main {

    public static void main(String[] args) {
        View theView = new View();
        Model theModel = new Model();
        Controller theController = new Controller(theView,theModel);
        theView.setVisible(true);
    }
}
```

MODEL.JAVA

```
package Task01;

import java.awt.Color;
import java.awt.Graphics;
import javax.swing.JColorChooser;

public class Model {
    private int size = 5;
    private Color Color_Selected;
    public Graphics graphic_Var;
    public Graphics Clear;

    public void IncreaseBrushSize(){
        size = size + 5;}

    public void DecreaseBrushSize(){
        if(size > 5){
            size=size-5;}}

    public int getSize(){
        return size;}

    public void SelectColor(){
        Color new_Color = JColorChooser.showDialog(null,"Select a Color",
Color.black);
        Color_Selected = new_Color;}

    public Color getColor(){
```

```

        return Color_Selected;}

    public Color getEraser(){
        return Color_Selected = Color.black;}

    public Graphics getGraphics(){
        return graphic_Var;}

}

```

VIEW.JAVA

```

package Task01;
import java.awt.event.ActionListener;
import java.awt.event.MouseMotionListener;
import javax.swing.*;
import java.awt.Canvas;
import java.awt.Color;
import java.awt.Font;
import java.awt.Graphics;

public class View extends JFrame{
    /**
     *
     */
    private static final long serialVersionUID = 1L;
    JFrame frame;
    JButton Btn_IncreaseSize,
    Btn_DecreaseSize, Btn_ColorSelector, Btn_Clear, Btn_Erase;
    Canvas canvas;
    JLabel label;
    Color Color_Selected = Color.white;
    JColorChooser ColorPanel;
    Graphics graphic_Var;

    View()
    {
        frame = new JFrame();
        frame.setBounds(200, 200, 900, 500);

        canvas = new Canvas();
        canvas.setBounds(40, 50, 810, 300);
        canvas.setBackground(Color.black);
        frame.add(canvas);

        label = new JLabel("Draw Here");
    }
}

```

```

label.setBounds(400, 5, 200, 40);
label.setFont(new Font("Serif", Font.BOLD, 30));
frame.add(label);

Btn_IncreaseSize = new JButton();
Btn_IncreaseSize.setBounds(310, 400, 80, 30);
Btn_IncreaseSize.setIcon(new ImageIcon("C:\\Users\\Amman Soomro\\SCD_Lab-
workspace\\SCD_Assignment01\\src\\Task01\\Increase.png"));
Btn_IncreaseSize.setBackground(Color.white);
frame.add(Btn_IncreaseSize);

Btn_DecreaseSize = new JButton();
Btn_DecreaseSize.setBounds(420, 400, 80, 30);
Btn_DecreaseSize.setIcon(new ImageIcon("C:\\Users\\Amman Soomro\\SCD_Lab-
workspace\\SCD_Assignment01\\src\\Task01\\Decrease.png"));
Btn_DecreaseSize.setBackground(Color.white);
frame.add(Btn_DecreaseSize);

Btn_ColorSelector = new JButton("Color");
Btn_ColorSelector.setBounds(350, 360, 100, 30);
Btn_ColorSelector.setIcon(new ImageIcon("C:\\Users\\Amman
Soomro\\SCD_Lab-workspace\\SCD_Assignment01\\src\\Task01\\Color_Wheel.png"));
Btn_ColorSelector.setBackground(Color.white);
frame.add(Btn_ColorSelector);

Btn_Clear = new JButton("Clear");
Btn_Clear.setBounds(470, 360, 100, 30);
Btn_Clear.setIcon(new ImageIcon("C:\\Users\\Amman Soomro\\SCD_Lab-
workspace\\SCD_Assignment01\\src\\Task01\\Clear.png"));
Btn_Clear.setBackground(Color.white);
frame.add(Btn_Clear);

Btn_Erase = new JButton();
Btn_Erase.setBounds(530, 400, 80, 30);
Btn_Erase.setIcon(new ImageIcon("C:\\Users\\Amman Soomro\\SCD_Lab-
workspace\\SCD_Assignment01\\src\\Task01\\Eraser.png"));
Btn_Erase.setBackground(Color.white);
frame.add(Btn_Erase);

frame.setLayout(null);
frame.setVisible(true);

```

```

    }
    public void addBtn_ClearListener(ActionListener listenforButton)
    {
        Btn_Clear.addActionListener(listenforButton);
    }
    public void addBtn_ColorSelectorListener(ActionListener listenforButton)
    {
        Btn_ColorSelector.addActionListener(listenforButton);
    }
    public void addBtn_EraseListener(ActionListener listenforButton)
    {
        Btn_Erase.addActionListener(listenforButton);
    }
    public void addBtn_DecreaseSizeListener(ActionListener listenforButton)
    {
        Btn_DecreaseSize.addActionListener(listenforButton);
    }
    public void addBtn_IncreaseSizeListener(ActionListener listenforButton)
    {
        Btn_IncreaseSize.addActionListener(listenforButton);
    }
    public void addMotionCanvasListener(MouseMotionListener listenforCanvas)
    {
        canvas.addMouseMotionListener(listenforCanvas);
    }
    public void setSolution()
    {
    }
}

```

CONTROLLER.JAVA

```

package Task01;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.awt.event.MouseEvent;
import java.awt.event.MouseMotionListener;

public class Controller {
    private View theView;
    private Model theModel;
    public Controller(View theView, Model theModel){
        this.theView = theView;
        this.theModel = theModel;
    }
}

```

```

        this.theView.addBtn_ClearListener(new Btn_ClearListener());
        this.theView.addBtn_ColorSelectorListener(new
Btn_ColorSelectorListener());
        this.theView.addBtn_EraseListener(new Btn_EraseListener());
        this.theView.addBtn_IncreaseSizeListener(new Btn_IncreaseSizeListener());
        this.theView.addBtn_DecreaseSizeListener(new Btn_DecreaseSizeListener());
        this.theView.addMotionCanvasListener(new MotionCanvasListener());
    }

    class Btn_ClearListener implements ActionListener{
        @Override
        public void actionPerformed(ActionEvent e) {
            theModel.Clear = theView.canvas.getGraphics();
            theModel.Clear.clearRect(0, 0, theView.canvas.getWidth(),
theView.canvas.getHeight());}}

    class Btn_ColorSelectorListener implements ActionListener{
        @Override
        public void actionPerformed(ActionEvent e) {
            theModel.SelectColor();}}

    class Btn_EraseListener implements ActionListener{
        @Override
        public void actionPerformed(ActionEvent e) {
            theModel.getEraser();}}

    class Btn_IncreaseSizeListener implements ActionListener{
        @Override
        public void actionPerformed(ActionEvent e) {
            theModel.IncreaseBrushSize();}}

    class Btn_DecreaseSizeListener implements ActionListener{
        @Override
        public void actionPerformed(ActionEvent e) {
            theModel.DecreaseBrushSize();}}

    class MotionCanvasListener implements MouseMotionListener
    {
        @Override
        public void mouseDragged(MouseEvent e) {
            theModel.graphic_Var = theView.canvas.getGraphics();
            int x, y;
            theModel.graphic_Var.setColor(theModel.getColor());
            x = e.getX();
            y = e.getY();

```

```
        theModel.graphic_Var.fillOval(x, y, theModel.getSize(),  
theModel.getSize());}
```

```
    @Override  
    public void mouseMoved(MouseEvent e) {}
```

```
}
```