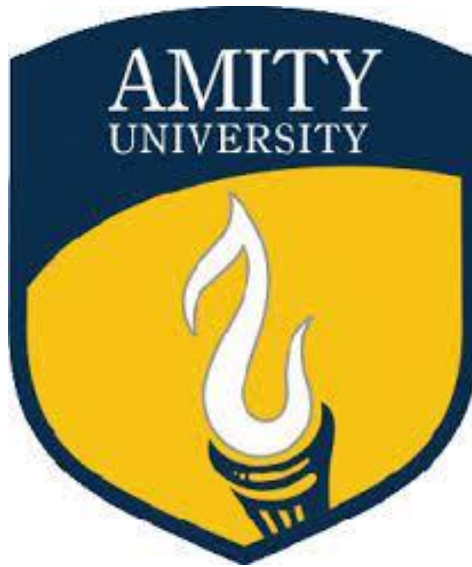# Introduction to Java Programming
(IT201)

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<u>Aim-</u> Write a java program to create a paint like application with some selected features.

<u>Software Used-</u> JDK, Sublime Text.

<u>Theory-</u>
The Java Development Kit (JDK) is one of three core technology packages used in Java programming, along with the JVM (Java Virtual Machine) and the JRE (Java Runtime Environment). It's important to differentiate between these three technologies, as well as understanding how they're connected:
- The JVM is the Java platform component that executes programs.
- The JRE is the on-disk part of Java that creates the JVM.
- The JDK allows developers to create Java programs that can be executed and run by the JVM and JRE. Developers new to Java often confuse the Java

Development Kit and the Java Runtime Environment. The distinction is that the JDK is a package of tools for *developing* Java-based software, whereas the JRE is a package of tools for *running* Java code.

The JRE can be used as a standalone component to simply run Java programs, but it's also part of the JDK. The JDK requires a JRE because running Java programs is part of developing them.

Program

```java
import javax.swing.JFrame;
import javax.swing.JButton;
import javax.swing.JPanel;
import java.awt.event.MouseMotionListener;
import java.awt.event.MouseEvent;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;
import java.awt.Container;
import java.awt.BorderLayout;
import java.awt.Graphics;
import java.awt.Color;
import java.awt.GridLayout;
public class MyPaint1 extends JFrame implements
MouseMotionListener,ActionListener
{
private int x =0,y=0,a,b;
private Color col=Color.WHITE;
private int sha;
public MyPaint1()
{
setTitle("MyPaint1");
setSize(1200,1200);
setBackground(col);
setDefaultCloseOperation(EXIT_ON_CLOSE);
//LAYOUT
JPanel p= new JPanel();
p.setLayout(new GridLayout(4,1));
JButton red= new JButton("red");
red.setForeground(Color.RED);
JButton black= new JButton("black");
black.setForeground(Color.BLACK);
JButton yellow= new JButton("yellow");
yellow.setForeground(Color.YELLOW);
JButton blue= new JButton("blue");
blue.setForeground(Color.BLUE);
JButton green= new JButton("green");
green.setForeground(Color.GREEN);
JButton pink= new JButton("pink");
pink.setForeground(Color.PINK);
JButton eraser= new JButton("eraser");
pink.setForeground(Color.BLACK);
JButton oval= new JButton("oval");
oval.setForeground(Color.BLACK);
JButton rectangle= new JButton("rectangle");
rectangle.setForeground(Color.BLACK);
```

```java
JButton line= new JButton("line");
line.setForeground(Color.BLACK);
JButton draw= new JButton("draw");
draw.setForeground(Color.BLACK);
p.add(red);
p.add(black);
p.add(yellow);
p.add(blue);
p.add(green);
p.add(pink);
p.add(eraser);
p.add(oval);
p.add(rectangle);
p.add(line);
p.add(draw);
red.addActionListener(this);
black.addActionListener(this);
yellow.addActionListener(this);
blue.addActionListener(this);
green.addActionListener(this);
pink.addActionListener(this);
eraser.addActionListener(this);
oval.addActionListener(this);
rectangle.addActionListener(this);
line.addActionListener(this);
draw.addActionListener(this);
Container c = this.getContentPane();
c.setLayout(new BorderLayout());
c.add(p, BorderLayout.EAST);
//MOUSE
c.addMouseMotionListener(this);
setVisible(true);
}
public void actionPerformed(ActionEvent e){
String act = e.getActionCommand();
if(act.equals("red"))
col= Color.RED;
else if(act.equals("black"))
col= Color.BLACK;
else if(act.equals("yellow"))
col= Color.YELLOW;
else if(act.equals("blue"))
col= Color.BLUE;
else if(act.equals("green"))
col= Color.GREEN;
else if(act.equals("pink"))
col= Color.PINK;
else if(act.equals("eraser"))
```

```java
col= Color.WHITE;
else
col=Color.BLACK;
String act2 = e.getActionCommand();
if (act2.equals("oval"))
sha=1;
else if (act2.equals("rectangle"))
sha=2;
else if (act2.equals("line"))
sha=3;
else if (act2.equals("draw"))
sha=4;
}
public void mouseMoved(MouseEvent e) {
}
public void mouseDragged(MouseEvent e)
{
x=e.getX();
y=e.getY();
repaint();
}
public void paint(Graphics g)
{
g.setColor(col);
if (sha==1)
g.drawOval(x, y, 50, 50);
else if (sha==2)
g.drawRect(x, y, 50, 50);
else if (sha==3)
g.drawLine(x, y, 100, 200);
else if (sha==4)
g.fillOval(x , y , 8 , 8);
g.setColor(col);
}
public static void main(String[] args)
{
MyPaint1 p =new MyPaint1();
}
}
```