



NUML

National University of Modern Languages

OOP

BS-Software Engineering 2nd-E

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Title: Lab Report

Submitted to:
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National University of Modern Languages

Object Oriented Programming

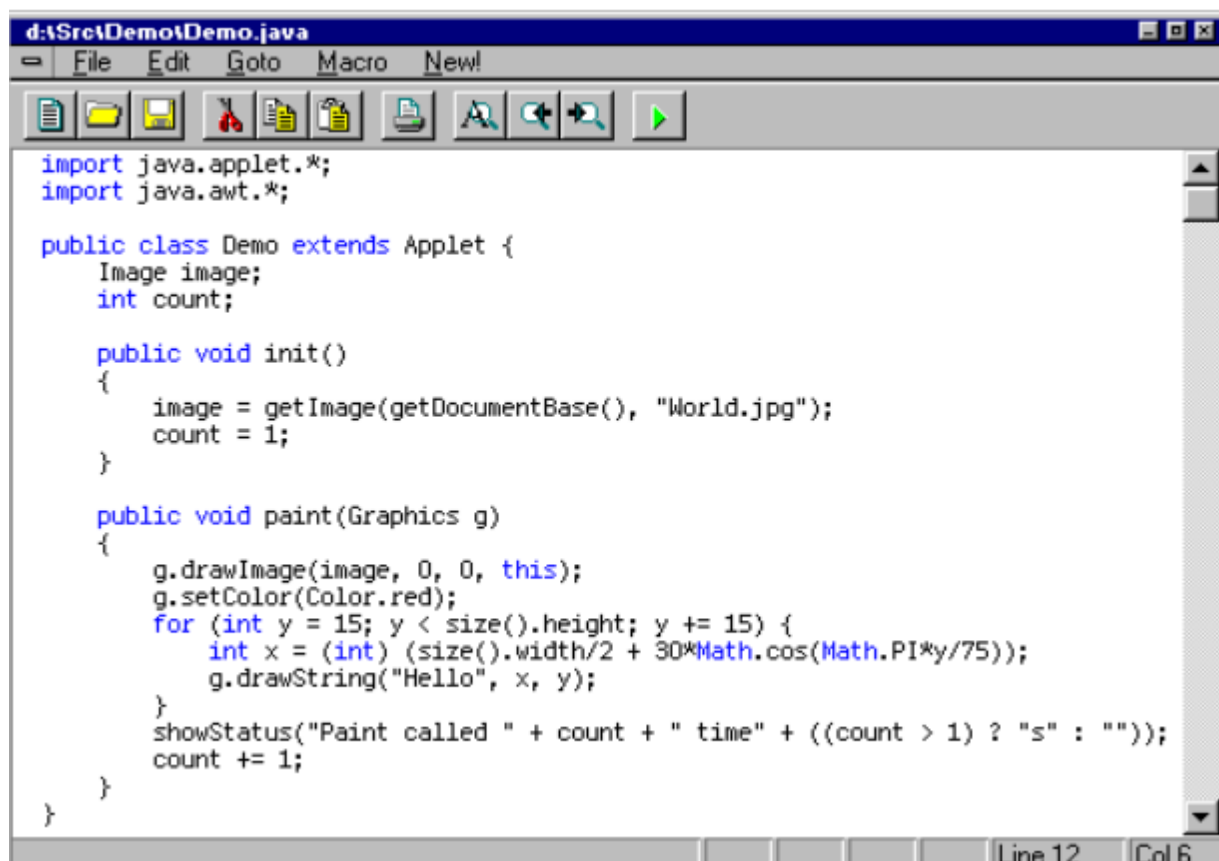
Week 1 (27-9-2021)

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What is A Program?

A **computer program** (also a software program, or just a program) is a sequence of instructions written to perform a specified task for a computer.



```
d:\Src\Demo\Demo.java
File Edit Goto Macro New!
import java.applet.*;
import java.awt.*;

public class Demo extends Applet {
    Image image;
    int count;

    public void init()
    {
        image = getImage(getDocumentBase(), "World.jpg");
        count = 1;
    }

    public void paint(Graphics g)
    {
        g.drawImage(image, 0, 0, this);
        g.setColor(Color.red);
        for (int y = 15; y < size().height; y += 15) {
            int x = (int) (size().width/2 + 30*Math.cos(Math.PI*y/75));
            g.drawString("Hello", x, y);
        }
        showStatus("Paint called " + count + " time" + ((count > 1) ? "s" : ""));
        count += 1;
    }
}
```

Line 12 Col 6

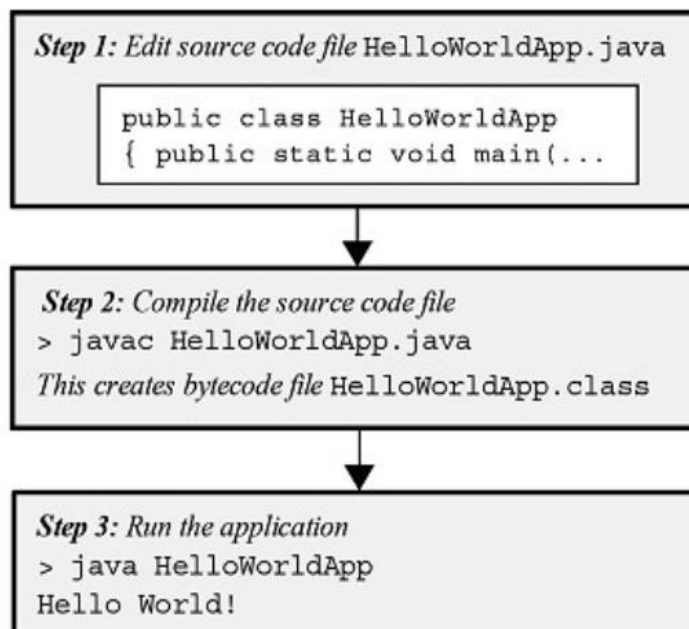
Getting Started

To begin developing Java programs, follow these steps:

Step 1: Obtain the Software Development Kit (SDK) for J2SE (Java 2 Platform, Standard Edition) or JDK

Step 2: Install the JDK

Simple Java Application



- ▶ **Step 1:** Use an **editor** to enter the following code for the HelloWorldApp program:

HelloWorldApp Application

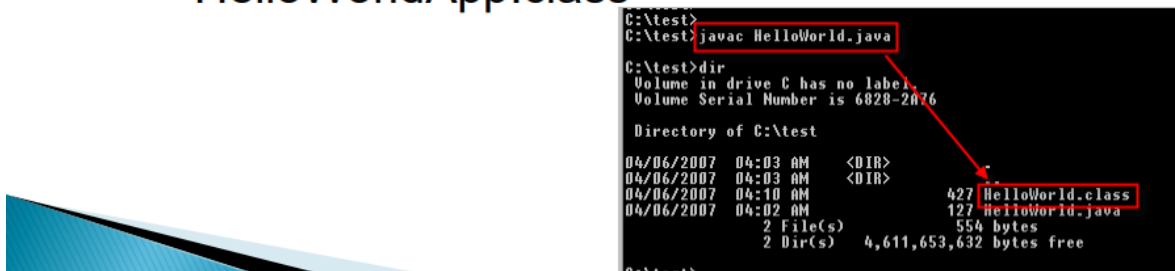
- ▶ Save this code in a file called **HelloWorldApp.java**
-

- ▶ **Step 2:** **Compile** the application with the command line:

> javac HelloWorldApp.java

- ▶ This creates the **class file** (with the bytecode output):

HelloWorldApp.class



- ▶ **Step 3:** Use the **java** command to run the program:

> java HelloWorldApp

Output
Hello World!

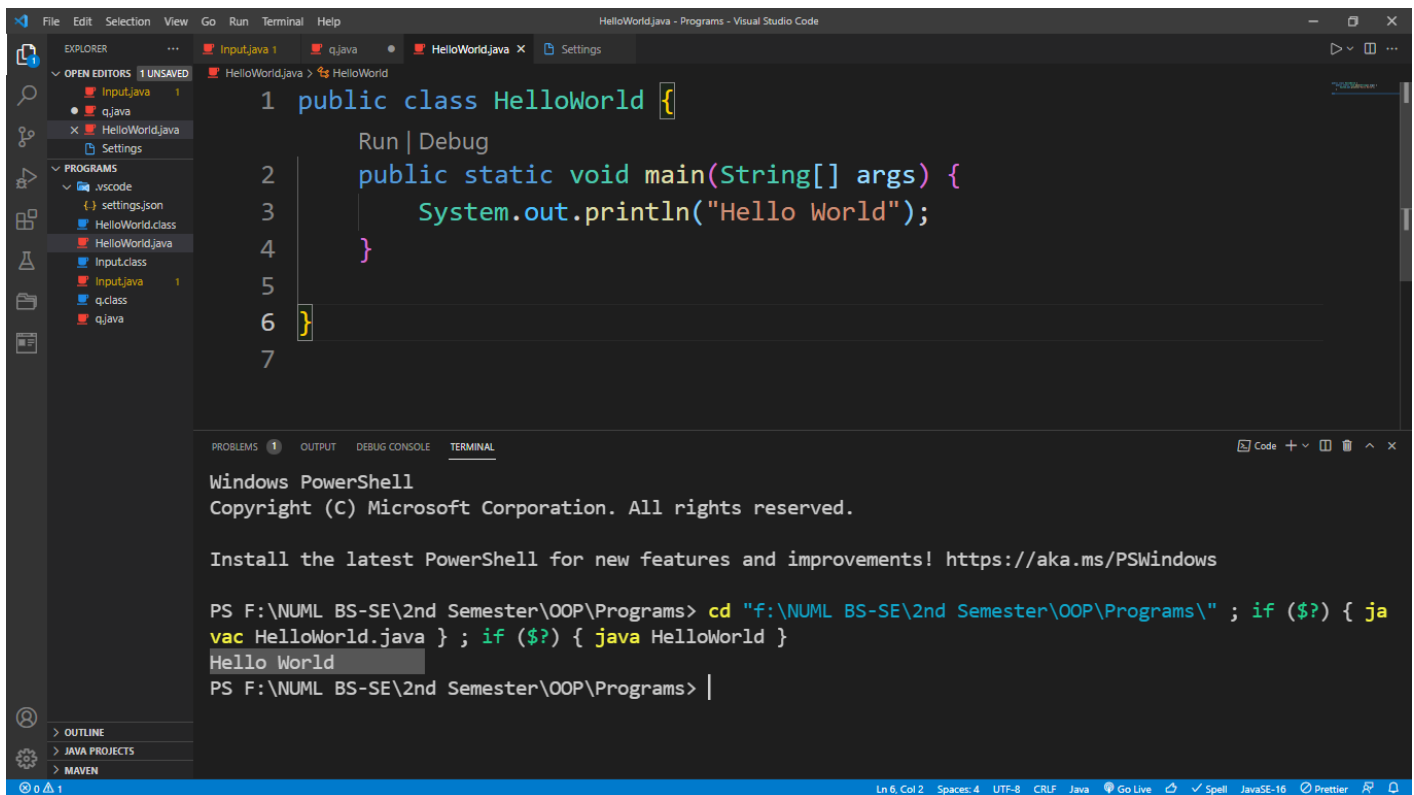


- ▶ The output is printed after the command line.

First Program in Java

```
public class HelloWorld {  
    public static void main(String[] args)  
    {  
        System.out.println("Hello World");  
    }  
}
```

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The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays the project structure with files like `Input.java`, `q.java`, `HelloWorld.java`, and `Settings`. The main editor window shows the `HelloWorld.java` file with the following code:

```
1 public class HelloWorld {  
2     Run | Debug  
3     public static void main(String[] args) {  
4         System.out.println("Hello World");  
5     }  
6 }  
7
```

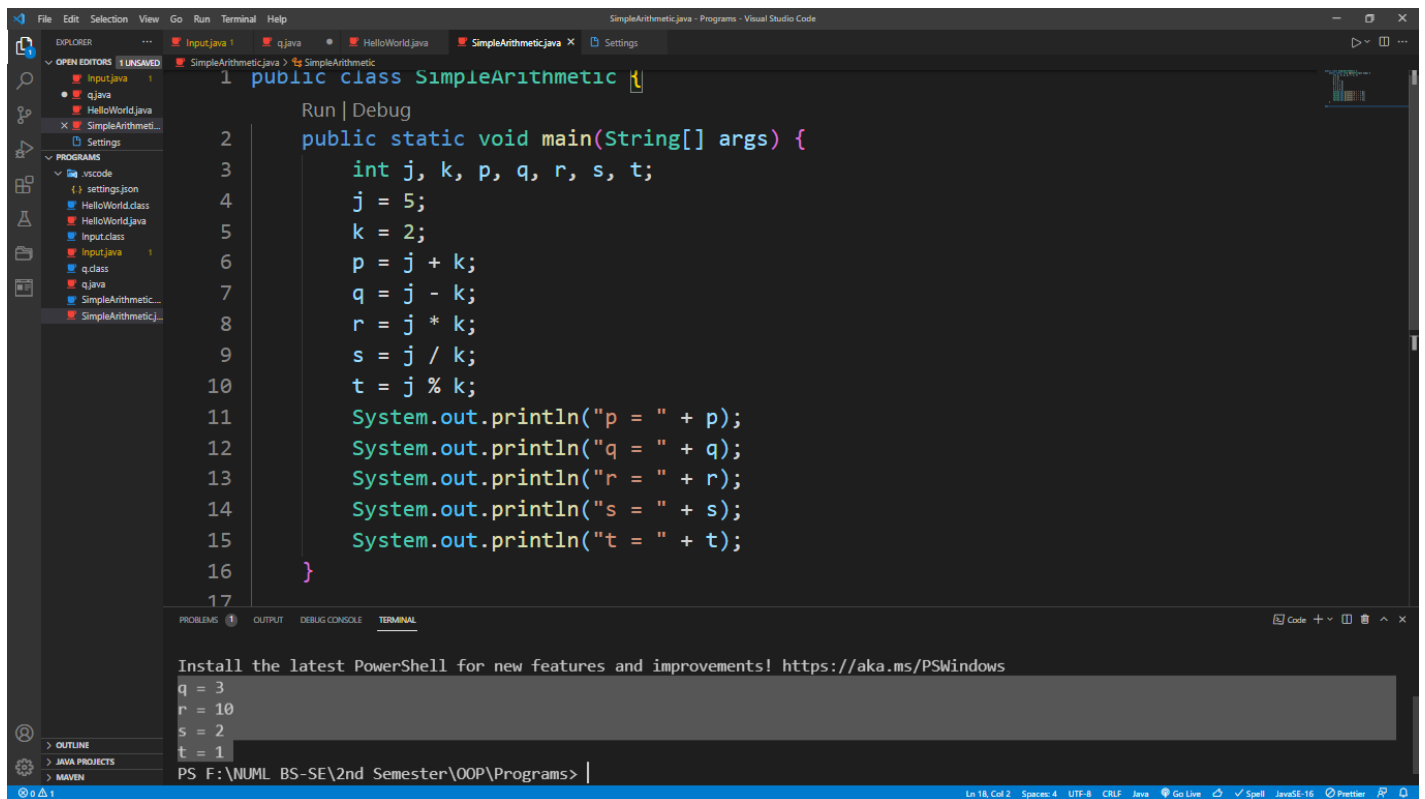
Below the editor, the TERMINAL panel shows the Windows PowerShell prompt. The user has navigated to the directory `F:\NUML BS-SE\2nd Semester\OOP\Programs\` and executed the command `javac HelloWorld.java`. The output shows `Hello World` printed to the console.

Simple Arithmetic in Java

```
public class SimpleArithmetic {  
    public static void main(String[] args) {  
        int j, k, p, q, r, s, t;  
        j = 5;  
        k = 2;  
        p = j + k;  
        q = j - k;
```

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```
    r = j * k;  
    s = j / k;  
    t = j % k;  
  
    System.out.println("p = " + p);  
    System.out.println("q = " + q);  
    System.out.println("r = " + r);  
    System.out.println("s = " + s);  
    System.out.println("t = " + t);  
}  
  
}
```

```
1 public class SimpleArithmetic {
2     public static void main(String[] args) {
3         int j, k, p, q, r, s, t;
4         j = 5;
5         k = 2;
6         p = j + k;
7         q = j - k;
8         r = j * k;
9         s = j / k;
10        t = j % k;
11        System.out.println("p = " + p);
12        System.out.println("q = " + q);
13        System.out.println("r = " + r);
14        System.out.println("s = " + s);
15        System.out.println("t = " + t);
16    }
17 }
```

Install the latest PowerShell for new features and improvements! <https://aka.ms/PSWindows>

q = 3
r = 10
s = 2
t = 1

PS F:\NUML BS-SE\2nd Semester\OOP\Programs> |

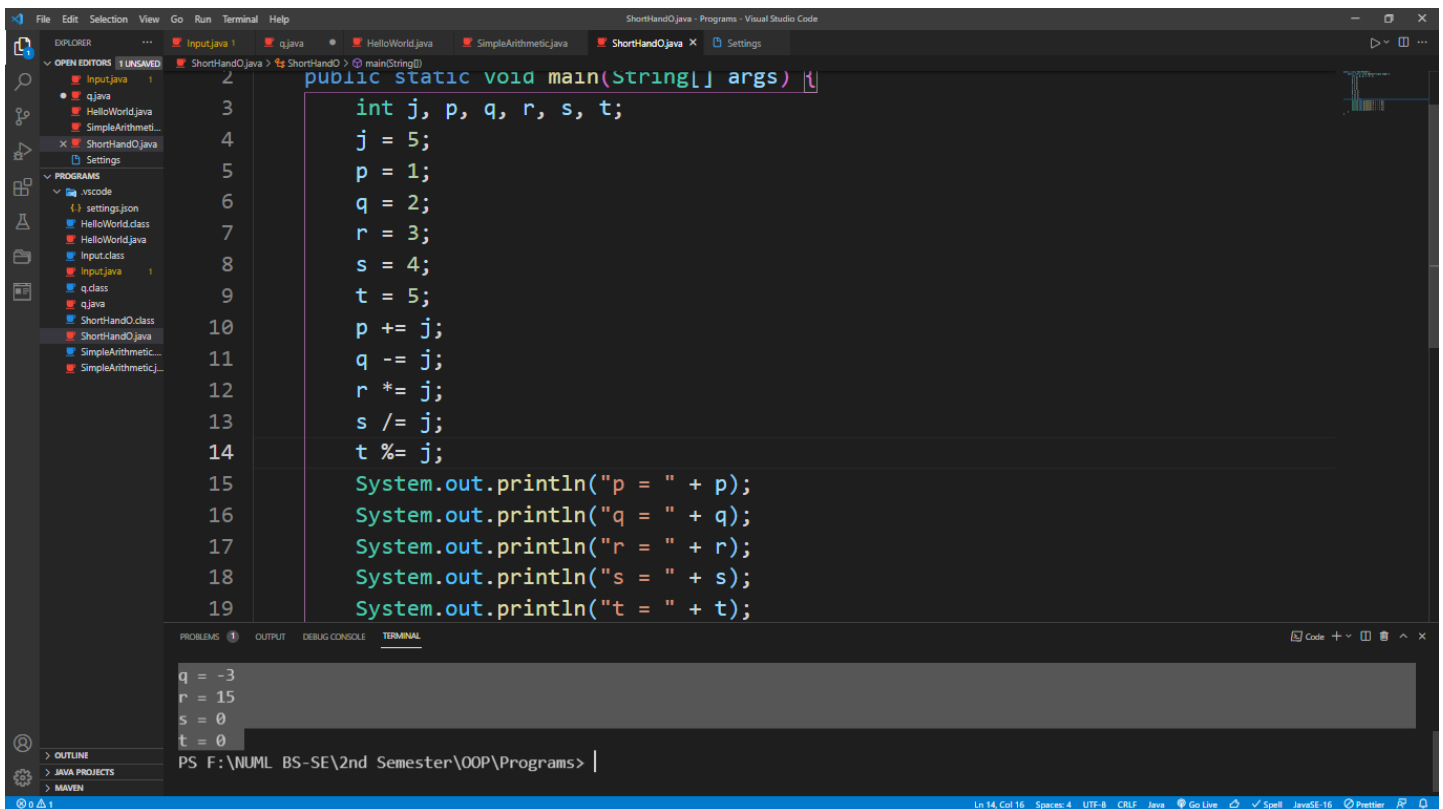
Short Hand Operator

```
public class ShortHand0 {
    public static void main(String[] args)
    {
        int j, p, q, r, s, t;
        j = 5;
        p = 1;
        q = 2;
        r = 3;
```

OOP LAB REPORTS

```
s = 4;  
t = 5;  
p += j;  
q -= j;  
r *= j;  
s /= j;  
t %= j;  
  
System.out.println("p = " + p);  
System.out.println("q = " + q);  
System.out.println("r = " + r);  
System.out.println("s = " + s);  
System.out.println("t = " + t);  
  
}  
  
}
```

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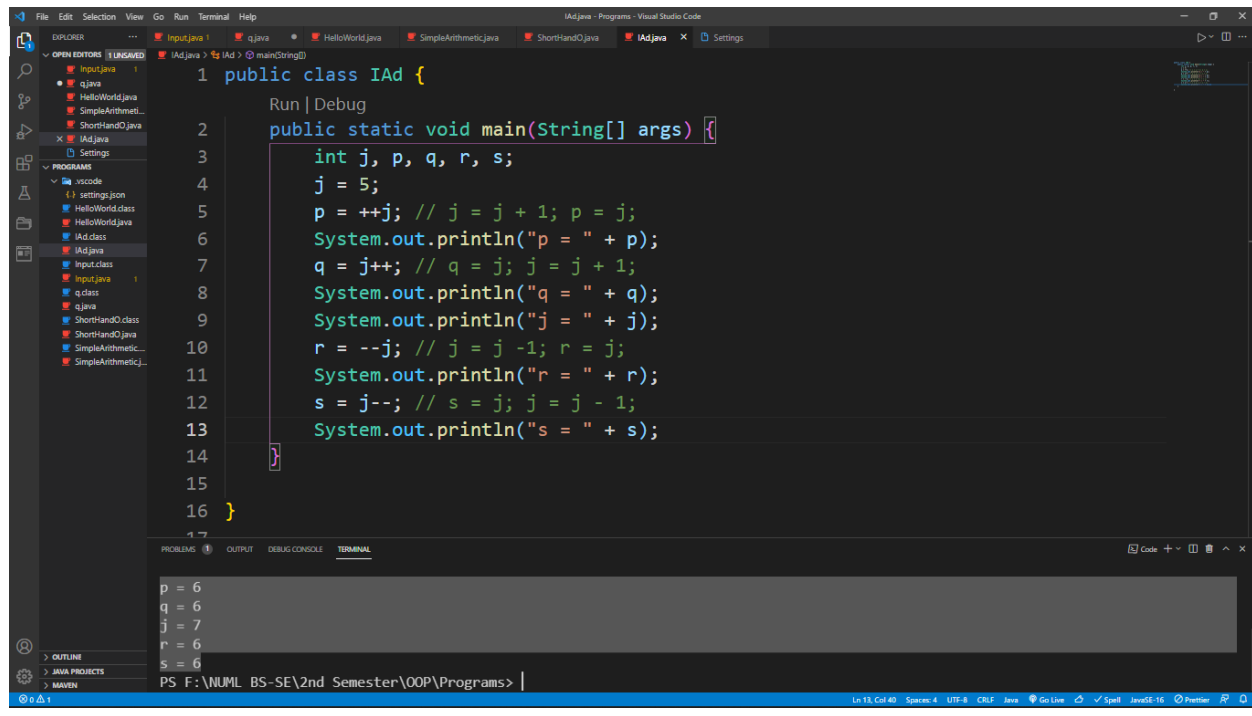
The screenshot shows a Visual Studio Code editor with a Java file named `ShortHandO.java`. The code defines a `main` method that initializes variables `j, p, q, r, s, t` and performs arithmetic operations. The terminal output shows the values of `q, r, s, t` after the operations.

```
public static void main(String[] args) {  
    int j, p, q, r, s, t;  
    j = 5;  
    p = 1;  
    q = 2;  
    r = 3;  
    s = 4;  
    t = 5;  
    p += j;  
    q -= j;  
    r *= j;  
    s /= j;  
    t %= j;  
    System.out.println("p = " + p);  
    System.out.println("q = " + q);  
    System.out.println("r = " + r);  
    System.out.println("s = " + s);  
    System.out.println("t = " + t);  
}
```

Terminal Output:

```
q = -3  
r = 15  
s = 0  
t = 0
```

Increment & Decrement



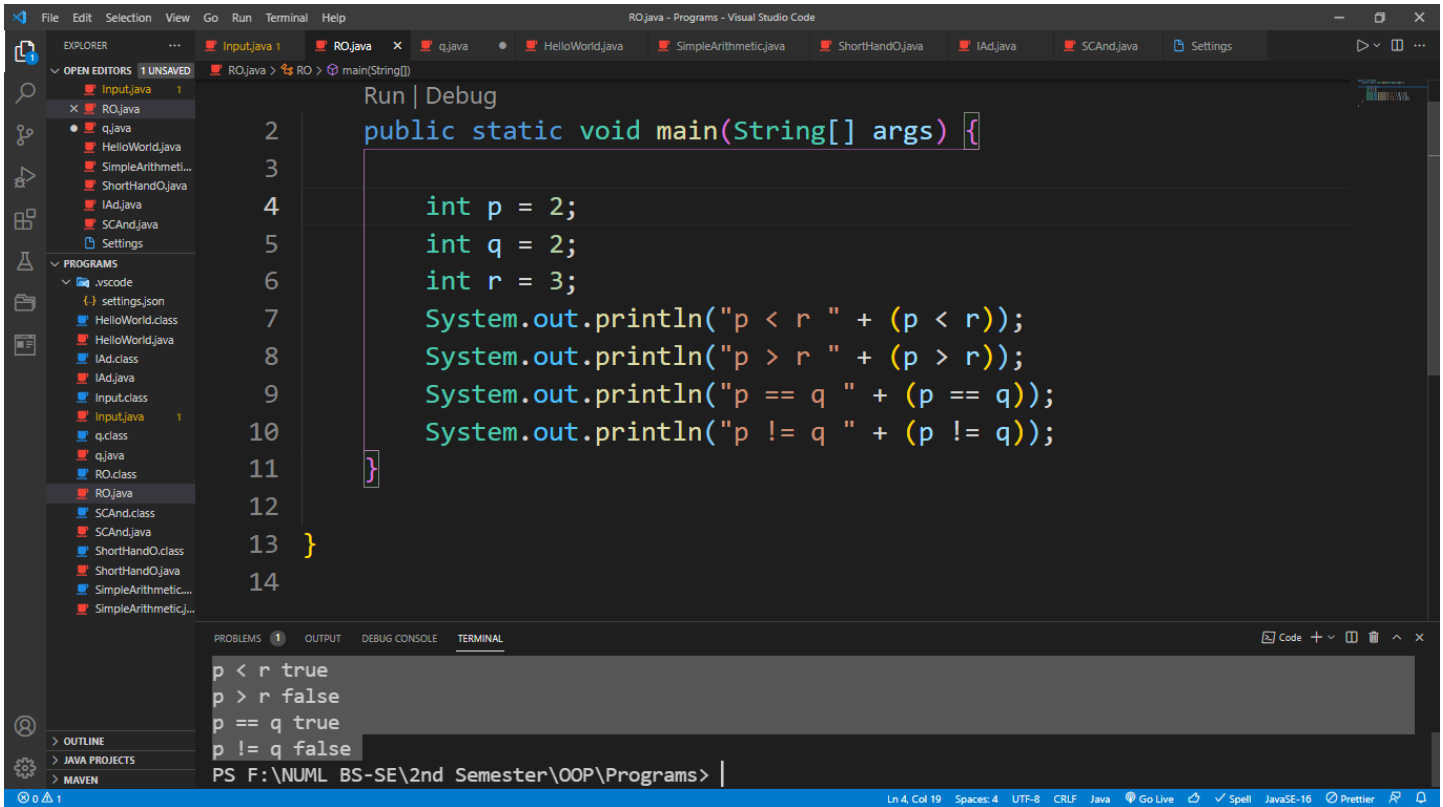
The screenshot shows a Visual Studio Code editor with a Java file named `IAD.java`. The code defines a `main` method that demonstrates increment and decrement operations on variables `p, q, j, r, s`. The terminal output shows the final values of these variables.

```
public class IAD {  
    public static void main(String[] args) {  
        int j, p, q, r, s;  
        j = 5;  
        p = ++j; // j = j + 1; p = j;  
        System.out.println("p = " + p);  
        q = j++; // q = j; j = j + 1;  
        System.out.println("q = " + q);  
        System.out.println("j = " + j);  
        r = --j; // j = j - 1; r = j;  
        System.out.println("r = " + r);  
        s = j--; // s = j; j = j - 1;  
        System.out.println("s = " + s);  
    }  
}
```

Terminal Output:

```
p = 6  
q = 6  
j = 7  
r = 6  
s = 6
```

Relational Operators



```
File Edit Selection View Go Run Terminal Help
RO.java - Programs - Visual Studio Code

EXPLORER
  OPEN EDITORS 1 UNSAVED
    Input.java 1
    RO.java x
    q.java
    HelloWorld.java
    SimpleArithmetic.java
    ShortHandO.java
    IAd.java
    SCAnd.java
    Settings
  PROGRAMS
    .vscode
    settings.json
    HelloWorld.class
    HelloWorld.java
    IAd.class
    IAd.java
    Input.class
    Input.java 1
    q.class
    q.java
    RO.class
    RO.java
    SCAnd.class
    SCAnd.java
    ShortHandO.class
    ShortHandO.java
    SimpleArithmetic.class
    SimpleArithmetic.java

Run | Debug
public static void main(String[] args) {
    int p = 2;
    int q = 2;
    int r = 3;
    System.out.println("p < r " + (p < r));
    System.out.println("p > r " + (p > r));
    System.out.println("p == q " + (p == q));
    System.out.println("p != q " + (p != q));
}

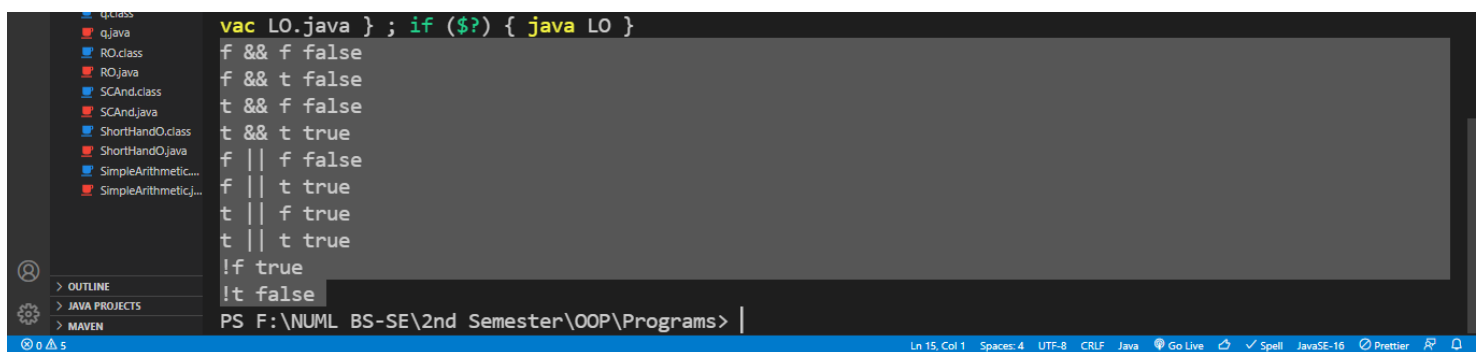
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL
p < r true
p > r false
p == q true
p != q false
PS F:\NUML BS-SE\2nd Semester\OOP\Programs>
```

Logical Operators

```
public class LO {
    public static void main(String[] args) {
        boolean t = true;
        boolean f = false;
        System.out.println("f && f " + (f && f));
    }
}
```

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```
System.out.println("f && t " + (f && t));  
System.out.println("t && f " + (t && f));  
System.out.println("t && t " + (t && t));  
System.out.println("f || f " + (f || f));  
System.out.println("f || t " + (f || t));  
System.out.println("t || f " + (t || f));  
System.out.println("t || t " + (t || t));  
System.out.println("!f " + !f);  
System.out.println("!t " + !t);  
  
}  
  
}
```



The screenshot shows an IDE with a project explorer on the left containing files like LO.class, q.java, RO.class, RO.java, SCAnd.class, SCAnd.java, ShortHandO.class, ShortHandO.java, SimpleArithmetic..., and SimpleArithmeticj... The main editor displays the following Java code:

```
vac LO.java } ; if ($?) { java LO }  
f && f false  
f && t false  
t && f false  
t && t true  
f || f false  
f || t true  
t || f true  
t || t true  
!f true  
!t false
```

The bottom status bar indicates the file path is PS F:\NUML BS-SE\2nd Semester\OOP\Programs> and shows various tool icons like Go Live, Spell, JavaSE-16, and Prettier.

Logical BIT Operators

```
public class LBOperator {  
    public static void main(String[] args)  
    {  
        int a = 10; // 00001010 = 10  
        int b = 12; // 00001100 = 12  
        int and, or, xor, na;  
        and = a & b; // 00001000 = 8  
        or = a | b; // 00001110 = 14  
        xor = a ^ b; // 00000110 = 6  
        na = ~a; // 11110101 = -11  
        System.out.println("and " + and);  
        System.out.println("or " + or);  
        System.out.println("xor " + xor);  
        System.out.println("na " + na);  
    }  
}
```

```
PS F:\NUML BS-SE\2nd Semester\OOP\Programs> cd "f:\NUML BS-SE\2nd Semester\OOP\Programs\" ; if ($?) { java
vac LBO.JAVA } ; if ($?) { java LBO }
error: Class names, 'LBO.JAVA', are only accepted if annotation processing is explicitly requested
1 error
PS F:\NUML BS-SE\2nd Semester\OOP\Programs> cd "f:\NUML BS-SE\2nd Semester\OOP\Programs\" ; if ($?) { java
vac LBOOperator.java } ; if ($?) { java LBOOperator }
and 8
or 14
xor 6
na -11
PS F:\NUML BS-SE\2nd Semester\OOP\Programs> |
```

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Object Oriented Programming

Week 2 & 3

Table of Contents

S.no.	Programs
1	Write a program to calculate the area of different shapes i.e. square, rectangle, circle by using classes

- | | |
|---|---|
| 2 | Write a program to get data of car class i.e. model, owner name, price and print these all for 2 objects. |
|---|---|

```
import java.util.Scanner;
// import java.util.Random;

class Rectangle {
    float Height;
    float Width;
    float Length;

    void Rectangle_area() {

        System.out.println("The area of Rectangle is" + (Height * Length * Width));
    }
}
```



```
class Square {  
    float Width;  
    float Length;  
  
    void Square_area() {  
  
        System.out.println("The area of Square is" + (Length  
* Width));  
  
    }  
}  
  
class Circle {  
    float pi = 3.14f;  
    float Radius;  
  
    void Circle_area() {
```

```
        System.out.println("The area of Circle is" + (pi * R
adius * Radius));

    }
}

public class Shapes {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        Rectangle big = new Rectangle();

        System.out.println(" ");

        System.out.println("Enter Width for Rectangle");

        big.Width = sc.nextFloat();

        System.out.println("Enter Length for Rectangle");

        big.Length = sc.nextFloat();

        System.out.println("Enter Height for Rectangle");

        big.Height = sc.nextFloat();
```

```
System.out.println(" ");

System.out.println("Area of Rectangle");

big.Rectangle_area();


Square small = new Square();

System.out.println("Enter Width for Square");

small.Width = sc.nextFloat();

System.out.println("Enter Length for Square");

small.Length = sc.nextFloat();

System.out.println(" ");

System.out.println("Area of Square");

small.Square_area();


Circle round = new Circle();

System.out.println("Enter Radius for Circle");

round.Radius = sc.nextFloat();

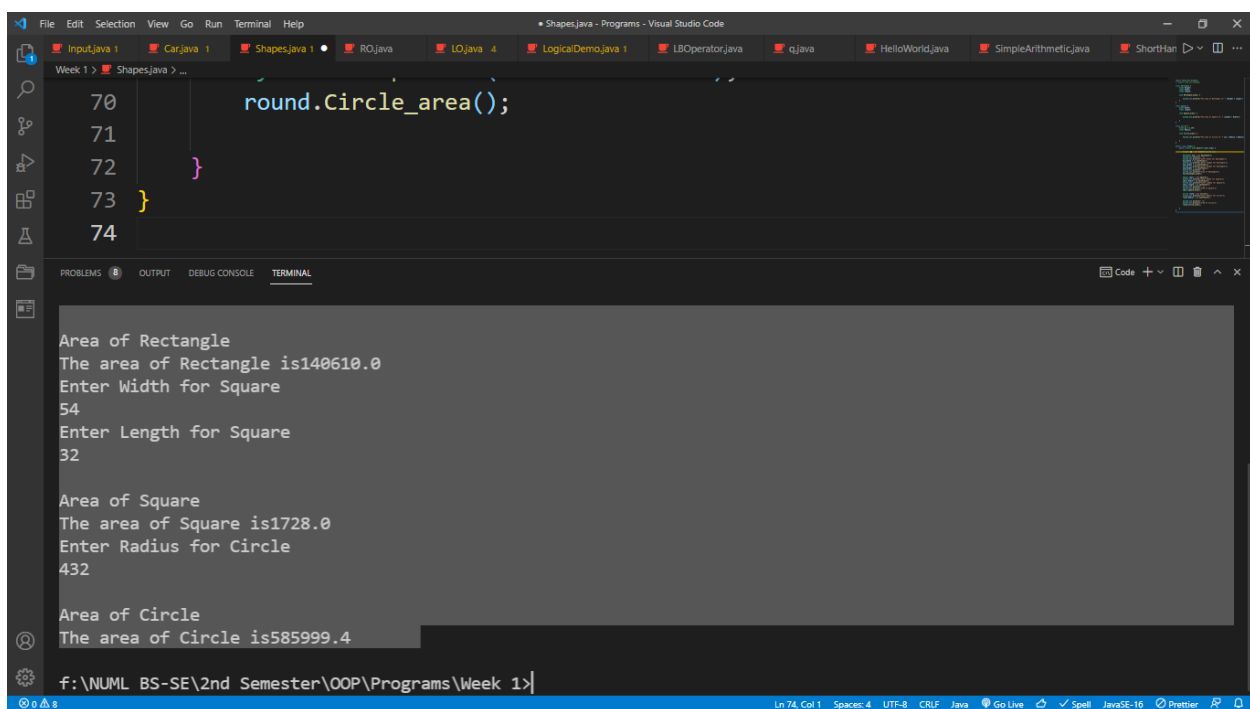

System.out.println(" ");

System.out.println("Area of Circle");
```

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```
round.Circle_area();  
  
}  
  
}
```

OUTPUT



The screenshot shows the Visual Studio Code interface with a Java file named 'Shapes.java'. The code in the editor is as follows:

```
70 round.Circle_area();  
71  
72 }  
73 }  
74
```

The output window at the bottom displays the following text:

```
Area of Rectangle  
The area of Rectangle is140610.0  
Enter Width for Square  
54  
Enter Length for Square  
32  
  
Area of Square  
The area of Square is1728.0  
Enter Radius for Circle  
432  
  
Area of Circle  
The area of Circle is585999.4
```

The status bar at the bottom indicates the file path: 'f:\NUML BS-SE\2nd Semester\OOP\Programs\Week 1\'. The bottom right corner shows the status bar with 'Ln 74, Col 1', 'Spaces: 4', 'UTF-8', 'CR/LF', 'Java', 'Go Live', 'Spell', 'JavaSE-16', 'Prettier', and a search icon.

```
import java.util.Scanner;  
  
class Car {
```

```
int model;
String car_name;
int price;
String owner;

void detail() {

    System.out.println("Model: " + model);
    System.out.println("Car_name: " + car_name)
;
    System.out.println("Price: " + price);
    System.out.println("Owner: " + owner);
}

public static void main(String [] args) {
    Scanner sc = new Scanner(System.in);
    Car one = new Car();
    System.out.println("Enter Data for Car One"
);
```

```
System.out.println("Enter MODEL");
one.model = sc.nextInt();
System.out.println("Enter Car name");
one.car_name = sc.next();
System.out.println("Enter PRICE");
one.price = sc.nextInt();
System.out.println("Enter Owner");
one.owner = sc.next();

Car two = new Car();
System.out.println("Enter Data for Car Two"
);
System.out.println("Enter MODEL");
two.model = sc.nextInt();
System.out.println("Enter Car name");
two.car_name = sc.next();
System.out.println("Enter PRICE");
two.price = sc.nextInt();
System.out.println("Enter Owner");
```

```
two.owner = sc.next();

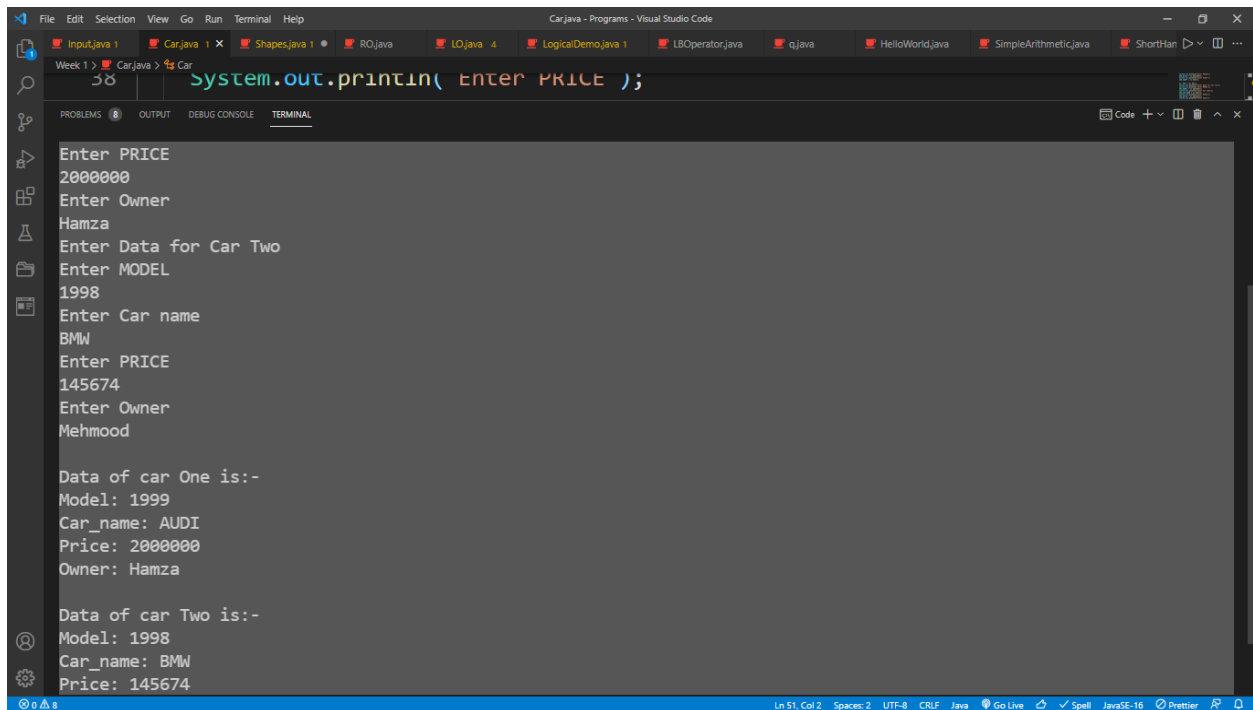
System.out.println(" ");
System.out.println("Data of car One is:-");
one.detail();
System.out.println(" ");
System.out.println("Data of car Two is:-");
two.detail();

}

}
```

OUTPUT

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```
File Edit Selection View Go Run Terminal Help
Car.java - Programs - Visual Studio Code
Input.java 1 x Car.java 1 x Shapes.java 1 x RO.java LO.java 4 LogicalDemo.java 1 LBOperator.java q.java HelloWorld.java SimpleArithmetic.java ShortHan
Week 1 > Car.java > Car
38 system.out.println( Enter PRICE );
PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL
Enter PRICE
2000000
Enter Owner
Hamza
Enter Data for Car Two
Enter MODEL
1998
Enter Car name
BMW
Enter PRICE
145674
Enter Owner
Mehmood

Data of car One is:-
Model: 1999
Car_name: AUDI
Price: 2000000
Owner: Hamza

Data of car Two is:-
Model: 1998
Car_name: BMW
Price: 145674
Ln 51, Col 2 Spaces: 2 UTF-8 CRUF Java Go Live Spell JavaSE-16 Prettier
```

PROGRAM 3

Source Code:

```
package javaapplication28lab.pkg4task2;

class box{

    double height;

    double width;

    double depth;

    double voloume(){

        return width*height*depth;

    }

    void setdeimension(double h,double w,double d){

        width=w;depth=d;height=h;

    }

}
```


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```
}  
}  
  
public class JavaApplication28lab4task2 {  
    public static void main(String[] args) {  
        box mybox=new box();  
        box mybox1=new box();  
        double voloume;  
        mybox.setdeimension(10, 20, 30);  
        mybox1.setdeimension(2, 3, 4);  
        voloume=mybox.voloume();  
        System.out.println("Voloume of first box is"+voloume);  
        voloume=mybox1.voloume();  
        System.out.println("Voloume of second box is"+voloume);  
    }  
}
```

Input:

```
package javaapplication28lab.prgtask2;  
class box{  
    double height;  
    double width;  
    double depth;  
    double voloume() {  
        return width*height*depth;  
    }  
    void setdeimension(double h,double w,double d){  
        width=w;depth=d;height=h;  
    }  
}  
  
public class JavaApplication28lab4task2 {  
    public static void main(String[] args) {  
        box mybox=new box();  
        box mybox1=new box();  
        double voloume;  
        mybox.setdeimension(10, 20, 30);  
        mybox1.setdeimension(2, 3, 4);  
        voloume=mybox.voloume();  
        System.out.println("Voloume of first box is"+voloume);  
        voloume=mybox1.voloume();  
        System.out.println("Voloume of second box is"+voloume);  
    }  
}
```

Output:

```
run:
Volume of first box is6000.0
Volume of second box is24.0
BUILD SUCCESSFUL (total time: 0 seconds)
```

PROGRAM 4

Source code:

```
package javaapplication29.lab.work;

class Test{

int a;

public int b;

private int c;

void Setc(int i){

    c=i;

}

int getc(){

return c;

}

}

public class JavaApplication29LabWork {

    public static void main(String[] args) {

Test obj=new Test();

obj.a=20;

obj.b=30;

obj.Setc(40);

System.out.println(obj.a+" "+obj.b+" "+obj.getc());

}
```

}

}

Input:

```
private int c;
void Setc(int i){
    c=i;
}
int getc(){
    return c;
}

}

public class JavaApplication29LabWork {
    public static void main(String[] args) {
        Test obj=new Test();
        obj.a=20;
        obj.b=30;
        obj.Setc(40);
        System.out.println(obj.a+" "+obj.b+" "+obj.getc());
    }
}
```

Output:

```
20 30 40
BUILD SUCCESSFUL (total time: 0 seconds)
```

PROGRAM 5

```
package javaapplication36.lab.pkg5.task;
```

```
class Distance{
```

```
    float feet;
```

```
    float inches;
```

```
    Distance(){
```

```
    }
```

```
    Distance(float f,float i){
```

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```
        this.feet=feet;
        this.inches=inches;
    }
    public float getfeet(){
return feet;
    }
    public void setfeet(){
        this.feet=feet;
    }
    public float setinches(){
        return inches;
    }
}
public class JavaApplication36Lab5Task {
    public static void main(String[] args) {
        Distance Setter=new Distance();
        Distance getter=new Distance(10,20);
        Distance method=new Distance();
        Setter.getfeet();
        getter.setfeet();
        method.setinches();
    }
}
```

Input:

OOP LAB REPORTS

```
package javaapplication36.lab.pkg5.task;
class Distance{
    float feet;
    float inches;
    Distance() {
    }
    Distance(float f,float i){
        this.feet=feet;
        this.inches=inches;
    }
    public float getfeet(){
        return feet;
    }
    public void setfeet(){
        this.feet=feet;
    }
    public float setinches(){
        return inches;
    }
}
public class JavaApplication36Lab5Task {
    public static void main(String[] args) {
        Distance Setter=new Distance();
        Distance getter=new Distance(10,20);
        Distance method=new Distance();
        Setter.getfeet();
        getter.setfeet();
        method.setinches();
    }
}
```

Output:

```
Enter the feet :
12
Enter the inches :
45
feet : 0
Inches : 0.0
BUILD SUCCESSFUL (total time: 7 seconds)
```

PROGRAM 6

Source code:

```
package javaapplication38.pkgclass.task;
class StaticExample{
    static int staticCounter=0;
    int counter=0;
    StaticExample(){
        staticCounter++;
    }
}
```

OOP LAB REPORTS

```
        counter++;  
    }  
}  
  
public class JavaApplication38ClassTask {  
    public static void main(String[] args) {  
        StaticExample se1=new StaticExample();  
        StaticExample se2=new StaticExample();  
        System.out.println("Value of static counter for set1:"+se1.staticCounter);  
        System.out.println("value of StaticCounter for Se2:"+se2.staticCounter);  
        System.out.println("value of counter for se1:"+se1.counter);  
        System.out.println("Value of counter for se2:"+se2.counter);  
        StaticExample.staticCounter=100;  
        System.out.println("value of StaticCounter for se1:"+se1.staticCounter);  
        System.out.println("value of staticCounter for se2:"+se2.staticCounter);  
    }  
}
```

Input:

OOP LAB REPORTS

```
package lab.task.java.getter.seeter;  
class StaticExample{  
    static int staticCounter=0;  
    int counter=0;  
    StaticExample(){  
        staticCounter++;  
        counter++;  
    }  
}  
  
public class JavaApplication38ClassTask {  
    public static void main(String[] args) {  
        StaticExample se1=new StaticExample();  
        StaticExample se2=new StaticExample();  
        System.out.println("Value of static counter for set1:"+se1.staticCounter);  
        System.out.println("value of StaticCounter for Se2:"+se2.staticCounter);  
        System.out.println("value of counter for se1:"+se1.counter);  
        System.out.println("Value of counter for se2:"+se2.counter);  
        StaticExample.staticCounter=100;  
        System.out.println("value of StaticCounter for se1:"+se1.staticCounter);  
        System.out.println("value of staticCounter for se2:"+se2.staticCounter);  
    }  
}
```

Output:

```
Value of static counter for set1:2  
value of StaticCounter for Se2:2  
value of counter for se1:1  
Value of counter for se2:1  
value of StaticCounter for se1:100  
value of staticCounter for se2:100  
BUILD SUCCESSFUL (total time: 0 seconds)
```

Program 10:

```
package lab.task.java.getter.seeter;  
  
class Adress{  
    String street;  
    String house;  
    String city;  
    int code;
```

OOP LAB REPORTS

//now using geetter and setter

```
void setstreet(String st){
```

```
    street=st;
```

```
}
```

```
void sethouse(String h){
```

```
    house=h;
```

```
}
```

```
void setcity(String c){
```

```
    city=c;
```

```
}
```

```
void setcode(int co){
```

```
    code=co;
```

```
}
```

```
String getstreet(){
```

```
    return street;
```

```
}
```

```
String gethouse(){
```

```
    return house;
```

```
}
```

```
String getcity(){
```

```
return city;
```

```
}
```

```
int getcode(){
```

```
    return code;
```

```
}
```


OOP LAB REPORTS

```
}  
  
//Now making the next derived class  
  
class person extends Address{  
    //now method to show address  
    void Address(){  
        System.out.println("street:"+getstreet());  
        System.out.println("house:"+gethouse());  
        System.out.println("city:"+getcity());  
        System.out.println("code:"+getcode());  
    }  
}
```

```
public class LabTaskJavaGetterSetter {  
    public static void main(String[] args) {  
        //now make a object  
        person p=new person();  
        p.setstreet("Street #45");  
        p.sethouse("Jatt jouse");  
        p.setcity("Islambad");  
        p.setcode(3456);  
        p.Address();  
    }  
}
```

Input:

OOP LAB REPORTS

```
package lab.task.java.getter.seeter;
class Adress{
    String street;
    String house;
    String city;
    int code;
    //now using geetter and setter
    void setstreet(String st){
        street=st;
    }
    void sethouse(String h){
        house=h;
    }
    void setcity(String c){
        city=c;
    }
    void setcode(int co){
        code=co;
    }
    String getstreet(){
        return street;
    }
    String gethouse(){
        return house;
    }
    String getcity(){
        return city;
    }
    int getcode(){
        return code;
    }
}
```

```
//Now making the next drievied class
class person extends Adress{
    //now method to show address
    void Adress(){
        System.out.println("street:"+getstreet());
        System.out.println("house:"+gethouse());
        System.out.println("city:"+getcity());
        System.out.println("code:"+getcode());
    }
}

public class LabTaskJavaGetterSeeter {
    public static void main(String[] args) {
        //now make a object
        person p=new person();
        p.setstreet("Street #45");
        p.sethouse("Jatt jouse");
        p.setcity("Islambad");
        p.setcode(3456);
        p.Adress();
    }
}
```

Output:

```
run:
street:Street #45
house:Jatt jouse
city:Islambad
code:3456
BUILD SUCCESSFUL (total time: 0 seconds)
```

PROGRAM 7

```
package leture.pkg4.by.mam.practice;

class Box{

    double width,height,depth;

    Box(Box ob){                //Passing object ot constructor

        width=ob.width;
        height=ob.height;
        depth=ob.depth;
    }

    Box(double w,double h,double d){

        width=w;
        height=h;
        depth=d;
    }

    double voloume(){

        return width*height*depth;
    }

}

public class Leture4ByMamPractice {
```

OOP LAB REPORTS

```
public static void main(String[] args) {  
    Box mybox1=new Box(10,20,30);  
    Box mybox2=new Box(2,3,3);  
    double voloume;  
    voloume=mybox1.voloume();  
    System.out.println("voloume of the first is"+voloume);  
    voloume=mybox2.voloume();  
    System.out.println("Voloume of Second objeext 2 is"+voloume);  
}  
}
```

Input:

```
class Box{  
    double width,height,depth;  
    Box(Box ob) { //Passing object ot constructor  
        width=ob.width;  
        height=ob.height;  
        depth=ob.depth;  
    }  
    Box(double w,double h,double d) {  
        width=w;  
        height=h;  
        depth=d;  
    }  
    double voloume() {  
        return width*height*depth;  
    }  
}  
public class Leture4ByMamPractice {  
    public static void main(String[] args) {  
        Box mybox1=new Box(10,20,30);  
        Box mybox2=new Box(2,3,3);  
        double voloume;  
  
        voloume=mybox1.voloume();  
        System.out.println("voloume of the first is"+voloume);  
        voloume=mybox2.voloume();  
        System.out.println("Voloume of Second objeext 2 is"+voloume);  
    }  
}
```

Output:

```
voloume of the first is6000.0  
Voloume of Second objeext 2 is18.0  
BUILD SUCCESSFUL (total time: 0 seconds)  
|
```

Program 12:

```
package javaapplication76.lab.pkgclass.work;
```

```
import javax.swing.*;
import java.awt.*;

public class JavaApplication76LabClassWork {
    public static void main(String[] args) {
        JFrame f=new JFrame("this is my first gui program");
        JButton b=new JButton("login");
        f.add(b);
        f.setSize(500, 500);
        f.setLayout((new FlowLayout()));
        f.setVisible(true);
        f.getContentPane().setBackground(Color.yellow);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }

}
```

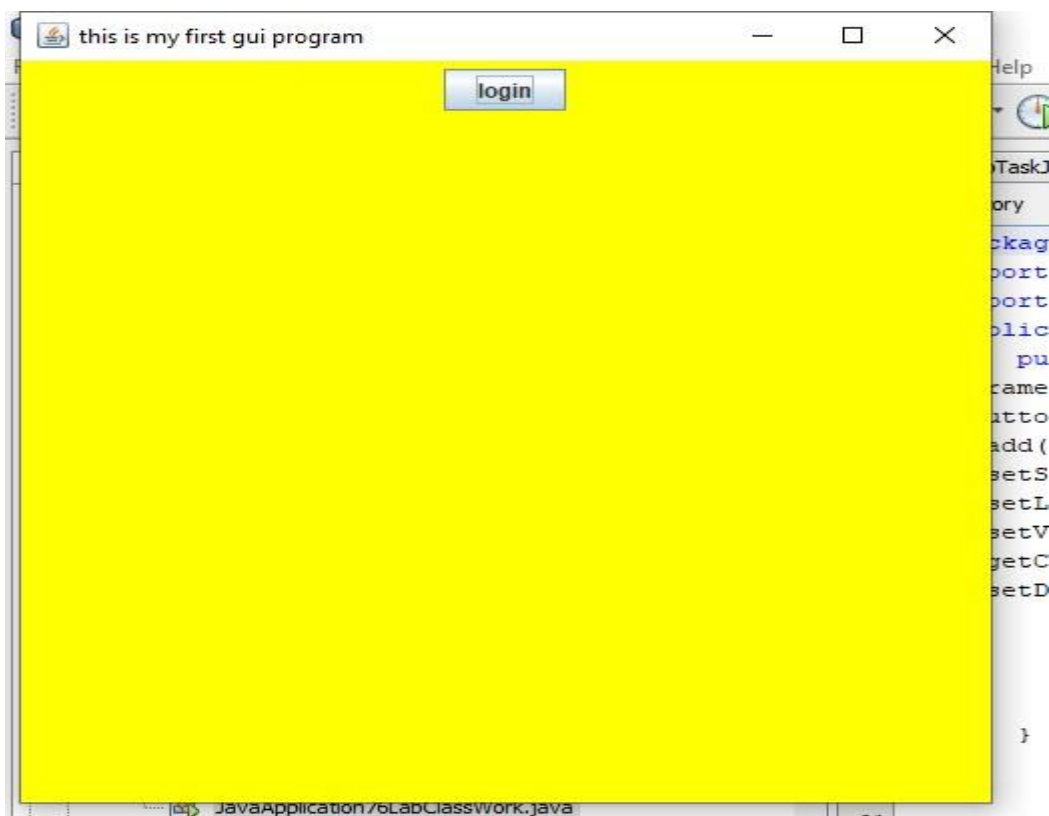
Input:

OOP LAB REPORTS

```
package javaapplication76.lab.pkgclass.work;
import javax.swing.*;
import java.awt.*;
public class JavaApplication76LabClassWork {
    public static void main(String[] args) {
        JFrame f=new JFrame("this is my first gui program");
        JButton b=new JButton("login");
        f.add(b);
        f.setSize(500, 500);
        f.setLayout((new FlowLayout()));
        f.setVisible(true);
        f.getContentPane().setBackground(Color.yellow);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }
}
```

Output:



Program 13:

OOP LAB REPORTS

```
package javaapplication77lab.pkgclass.mon.part.pkg2;

import javax.swing.*;

import java.awt.*;

public class JavaApplication77LabClassMOnPart2 {

    public static void main(String[] args) {

        JFrame f=new JFrame("Gui program");

        JLabel L1=new JLabel("user name");

        JTextField f1=new JTextField(20);

        JLabel l2=new JLabel("Password");

        JTextField f2=new JTextField(20);

        JButton b=new JButton("login");

        f.add(L1);

        f.add(f1);

        f.add(l2);

        f.add(f2);

        f.add(b);

        f.setSize(500, 500);

        f.setLayout((new FlowLayout()));

        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        f.setVisible(true);

        f.getContentPane().setBackground(Color.GREEN);

    }

}
```

Input:

OOP LAB REPORTS

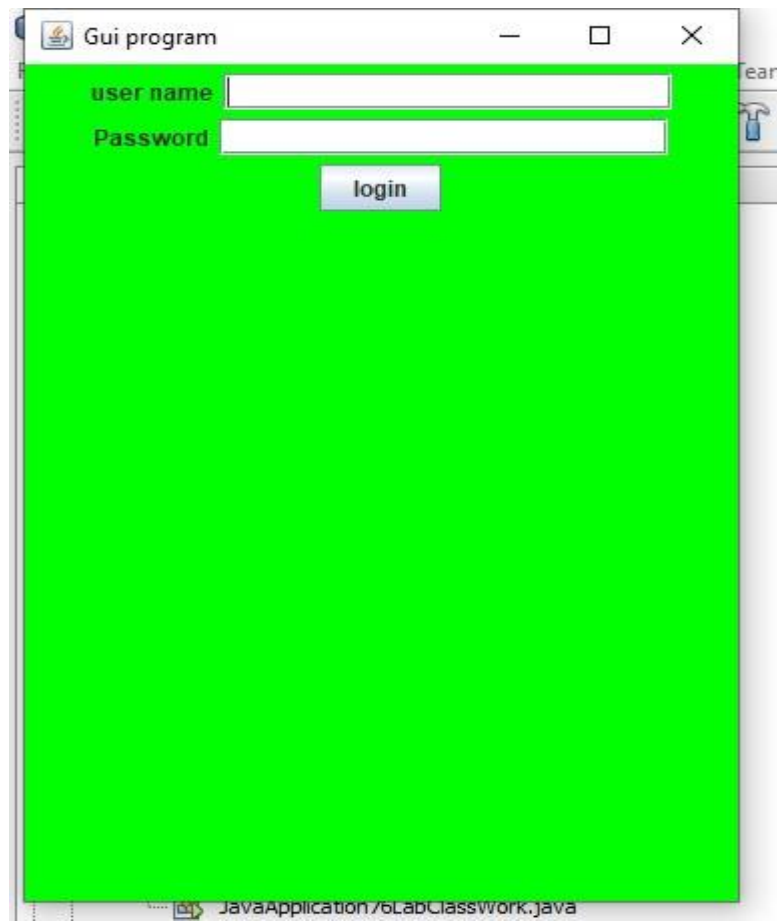
```
package javaApplication77LabClassMonPart2;
import javax.swing.*;
import java.awt.*;

public class JavaApplication77LabClassMonPart2 {
    public static void main(String[] args) {
        JFrame f=new JFrame("Gui program");
        JLabel l1=new JLabel("user name");
        JTextField f1=new JTextField(20);
        JLabel l2=new JLabel("Password");
        JTextField f2=new JTextField(20);
        JButton b=new JButton("login");

        f.add(l1);
        f.add(f1);
        f.add(l2);
        f.add(f2);
        f.add(b);
        f.setSize(500, 500);
        f.setLayout(new FlowLayout());
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        f.setVisible(true);
        f.getContentPane().setBackground(Color.GREEN);
    }
}
```

Output:

OOP LAB REPORTS



PROGRAM 8

Source code:

```
package layout.labclass;

import javax.swing.*;
import java.awt.*;

class B extends JFrame{

    B(){

        JButton b1=new JButton("North");

        JButton b2=new JButton("south");

        JButton b3=new JButton("East");
```

OOP LAB REPORTS

```
        JButton b4=new JButton("west");
        JButton b5=new JButton("cenetr");
        add(b1, BorderLayout.NORTH);
        add(b2, BorderLayout.SOUTH);
        add(b3, BorderLayout.EAST);
        add(b4, BorderLayout.WEST);
        add(b5, BorderLayout.CENTER);

        setSize(500,300);
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }
}

public class LayoutLabclass {

    public static void main(String[] args) {
        B b1=new B();
    }

}
```

Input:

OOP LAB REPORTS

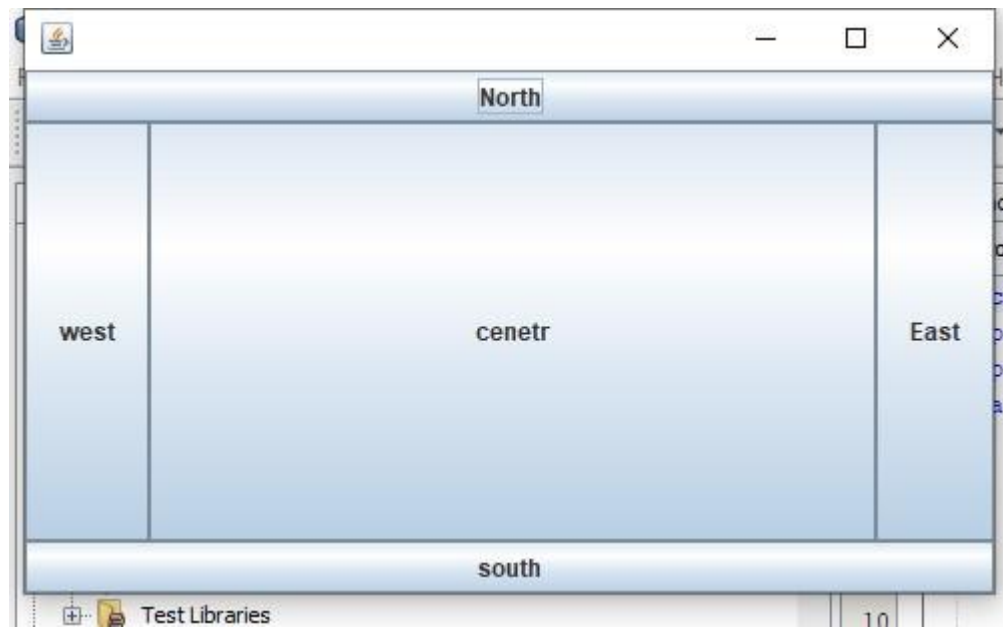
```
package layout.labclass;
import javax.swing.*;
import java.awt.*;
class B extends JFrame{
    B(){
        JButton b1=new JButton("North");
        JButton b2=new JButton("south");
        JButton b3=new JButton("East");
        JButton b4=new JButton("west");
        JButton b5=new JButton("cenetr");
        add(b1, BorderLayout.NORTH);
        add(b2, BorderLayout.SOUTH);
        add(b3, BorderLayout.EAST);
        add(b4, BorderLayout.WEST);
        add(b5, BorderLayout.CENTER);

        setSize(500,300);
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
public class LayoutLabclass {

    public static void main(String[] args) {
        B b1=new B();
    }

}
```

Output:



PROGRAM 9

Source code:

```
package grid.layout.lab.pkgclass;

import javax.swing.*;
import java.awt.*;

public class GridLayoutLABClass {
    public static void main(String[] args) {
        JFrame f=new JFrame();
        JButton b1=new JButton("1");
        JButton b2=new JButton("2");
        JButton b3=new JButton("3");
        JButton b4=new JButton("4");
        JButton b5=new JButton("5");
        JButton b6=new JButton("6");
```

OOP LAB REPORTS

```
    JButton b7=new JButton("7");
    JButton b8=new JButton("8");
    JButton b9=new JButton("9");
    f.add(b1);
    f.add(b2);
    f.add(b3);
    f.add(b4);
    f.add(b5);
    f.add(b6);
    f.add(b7);
    f.add(b8);
    f.add(b9);

    f.setLayout(new GridLayout());
f.setSize(1000,500);
    f.setVisible(true);
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

}

}
```

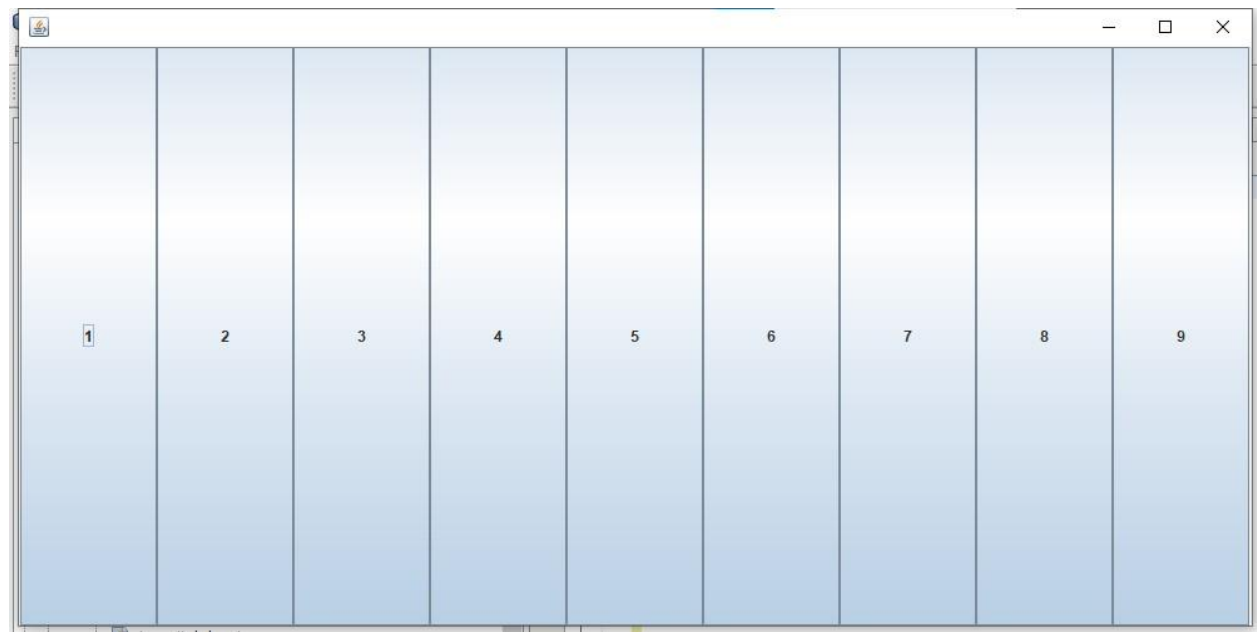
Input:

OOP LAB REPORTS

```
package grid.layout.lab.pkgclass;
import javax.swing.*;
import java.awt.*;
public class GridLayoutLABClass {
    public static void main(String[] args) {
        JFrame f=new JFrame();
        JButton b1=new JButton("1");
        JButton b2=new JButton("2");
        JButton b3=new JButton("3");
        JButton b4=new JButton("4");
        JButton b5=new JButton("5");
        JButton b6=new JButton("6");
        JButton b7=new JButton("7");
        JButton b8=new JButton("8");
        JButton b9=new JButton("9");
        f.add(b1);
        f.add(b2);
        f.add(b3);
        f.add(b4);
        f.add(b5);
        f.add(b6);
        f.add(b7);
        f.add(b8);
        f.add(b9);
        f.setLayout(new GridLayout());
        f.setSize(1000,500);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output:

OOP LAB REPORTS



PROGRAM 10

Source code:

```
package boxlayout.lab.pkgclass;

import javax.swing.*.*;
import java.awt.*.*;

public class BoxlayoutLabClass {
    public static void main(String[] args) {
        JFrame f=new JFrame();
        JButton b1=new JButton("1");
        JButton b2=new JButton("2");
        JButton b3=new JButton("3");
```

OOP LAB REPORTS

```
JPanel p=new JPanel();  
LayoutManager a=new BoxLayout(p,BoxLayout.PAGE_AXIS);  
p.add(b1);  
p.add(b2);  
p.add(b3);  
  
f.getContentPane().add(p);  
f.setSize(500,500);  
    f.setVisible(true);  
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
  
    }  
  
}
```

Input:

OOP LAB REPORTS

```
package boxlayout.lab.pkgclass;
import javax.swing.*;
import java.awt.*;

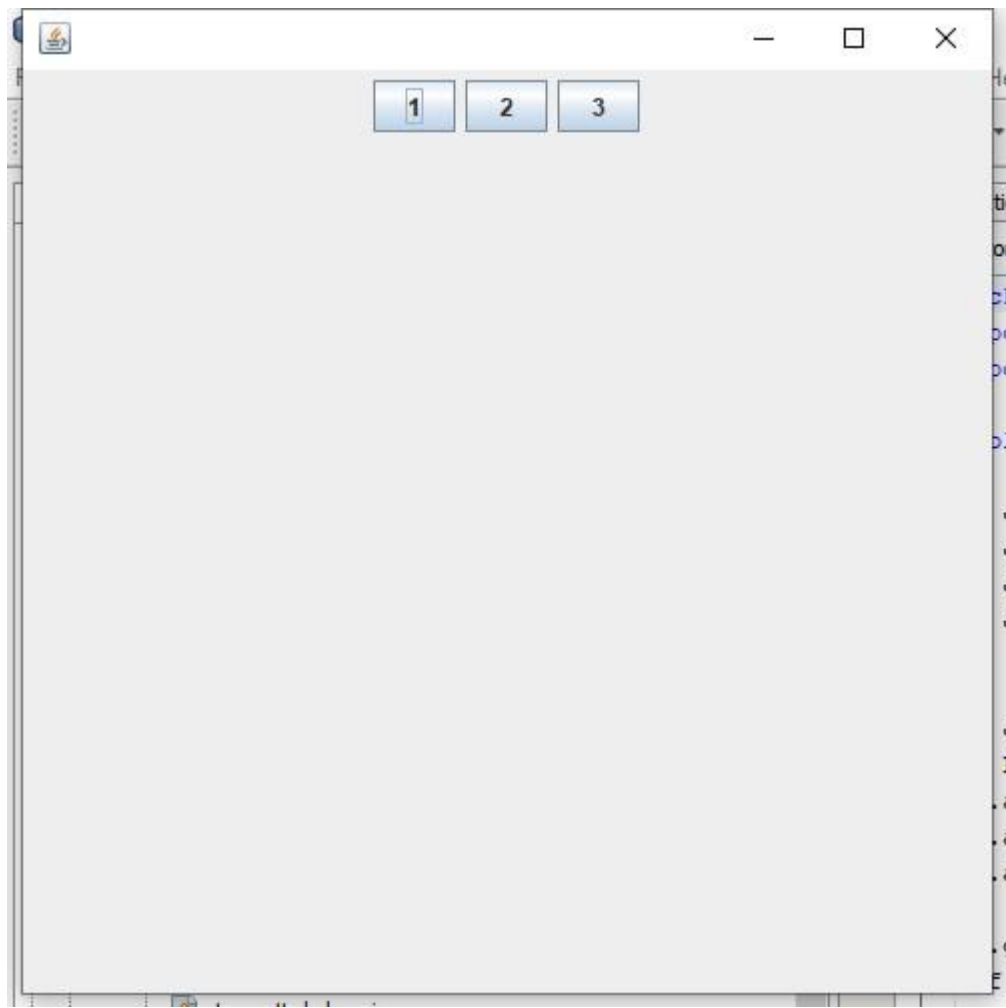
public class BoxlayoutLabClass {
    public static void main(String[] args) {
        JFrame f=new JFrame();
        JButton b1=new JButton("1");
        JButton b2=new JButton("2");
        JButton b3=new JButton("3");

        JPanel p=new JPanel();
        LayoutManager a=new BorderLayout(p,BoxLayout.PAGE_AXIS);
        p.add(b1);
        p.add(b2);
        p.add(b3);

        f.getContentPane().add(p);
        f.setSize(500,500);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output:

OOP LAB REPORTS



PROGRAM 11

Source code;

```
package componets.layout.pkg2;
import javax.swing.*.*;
import java.awt.*.*;
public class ComponetsLayout2 {
    public static void main(String[] args) {
        JFrame f=new JFrame("componetes using gui");
```

OOP LAB REPORTS

```
JLabel l1=new JLabel("First Program");  
f.add(l1);  
  
JLabel l2=new JLabel("this is my foirst Gui Gang");  
f.add(l2);  
  
l1.setBounds(10, 10, 100, 30);  
l2.setBounds(10, 30, 100, 100);  
  
f.setSize(500,500);  
f.setVisible(true);  
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
  
    }  
  
}
```

Input:

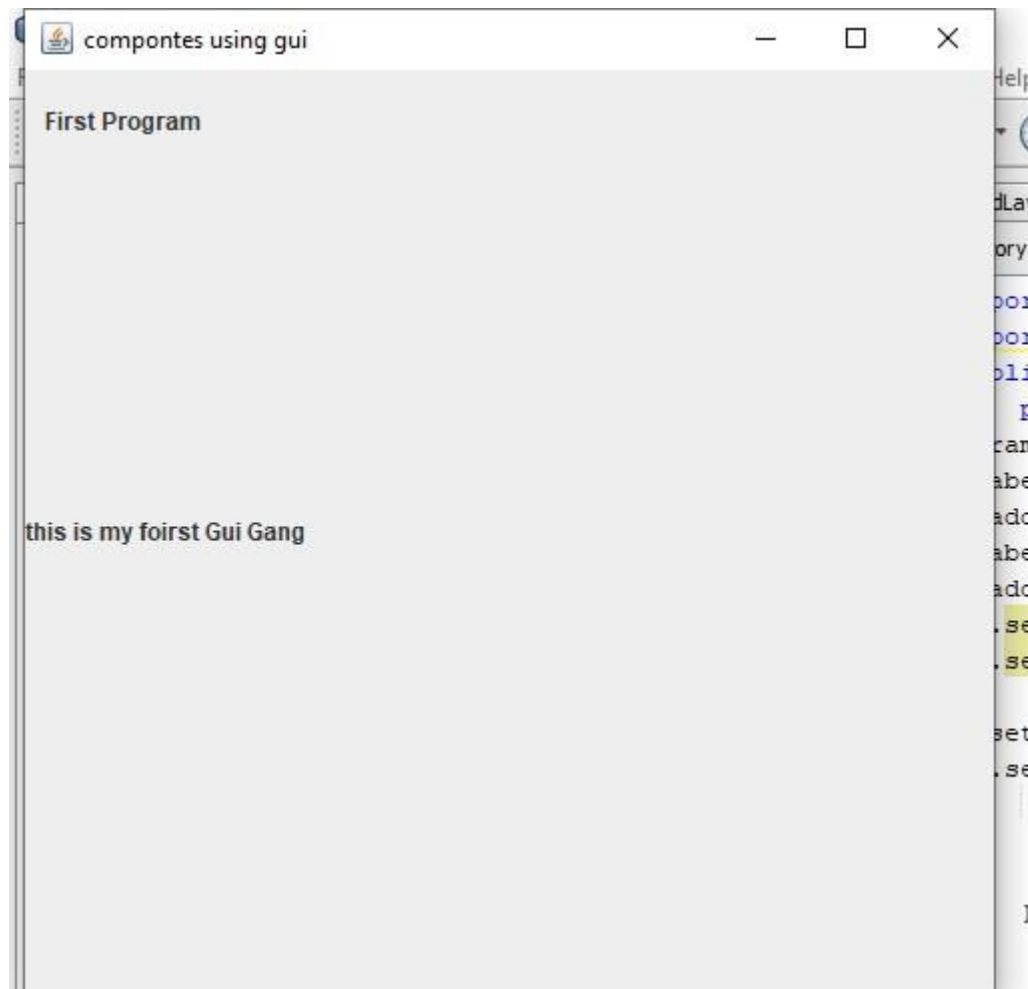
OOP LAB REPORTS

```
import javax.swing.*;
import java.awt.*;
public class ComponetsLayout2 {
    public static void main(String[] args) {
        JFrame f=new JFrame("compontes using gui");
        JLabel l1=new JLabel("First Program");
        f.add(l1);
        JLabel l2=new JLabel("this is my foirst Gui Gang");
        f.add(l2);
        l1.setBounds(10, 10, 100, 30);
        l2.setBounds(10, 30, 100, 100);

        f.setSize(500,500);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }
}
```

Output:



PROGRAM 12

Source code:

```
package componets.layout3;

import javax.swing.*;
import java.awt.*;

public class ComponetsLayout3 {
    public static void main(String[] args) {
        JFrame f=new JFrame("componetes using gui");
        JLabel l1=new JLabel("First Program");
```

OOP LAB REPORTS

```
l1.setBounds(10, 10, 100, 30);  
f.add(l1);  
  
JLabel l2=new JLabel("this is my foirst Gui Gang");  
l2.setBounds(10, 30, 100, 100);  
f.add(l2);  
  
JTextField t1=new JTextField("welcome GUI");  
t1.setBounds(120, 50, 200, 500);  
f.add(t1);  
  
JTextArea ta=new JTextArea("sswing ba DSani");  
ta.setBounds(130, 50, 200, 500);  
f.add(ta);  
  
f.setSize(500,500);  
f.setVisible(true);  
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
  
    }  
  
}
```

Input:

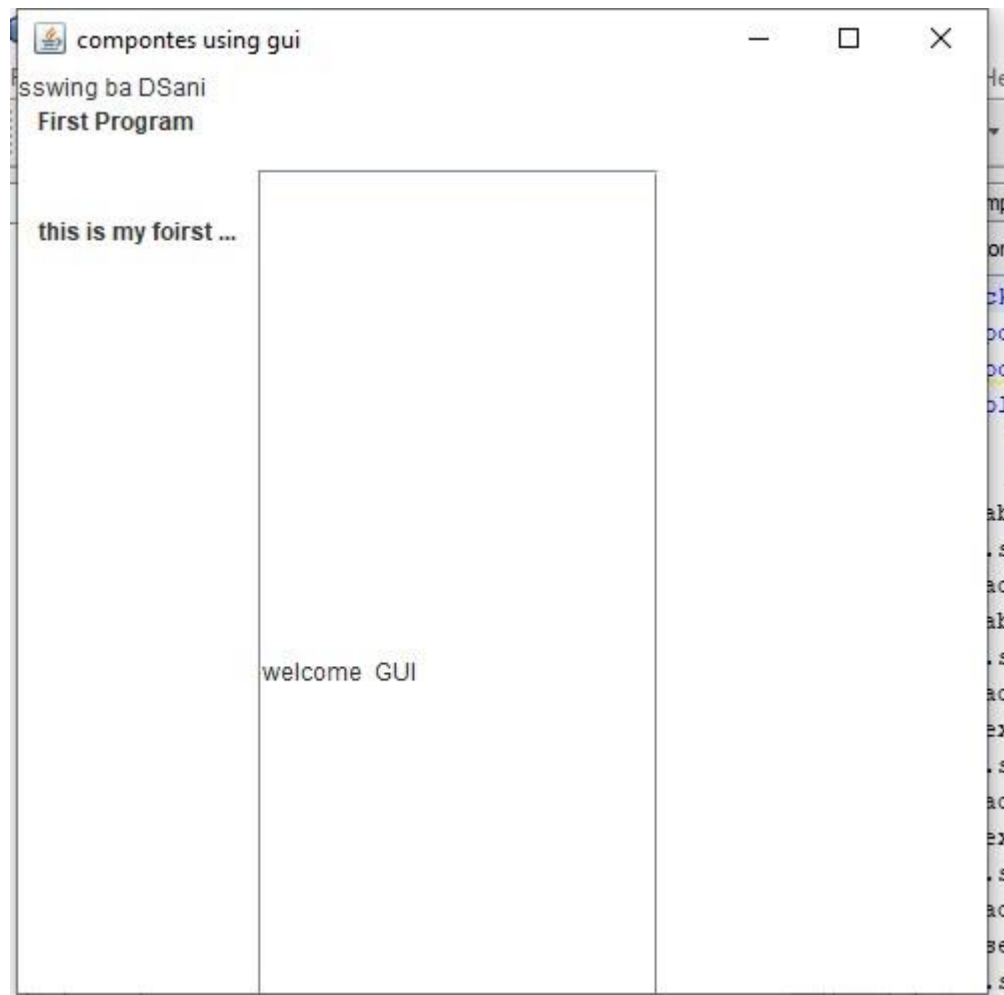
OOP LAB REPORTS

```
package componets.layouts;
import javax.swing.*;
import java.awt.*;
public class ComponetsLayout3 {
    public static void main(String[] args) {
        JFrame f=new JFrame("componetes using gui");
        JLabel l1=new JLabel("First Program");
        l1.setBounds(10, 10, 100, 30);
        f.add(l1);
        JLabel l2=new JLabel("this is my foirst Gui Gang");
        l2.setBounds(10, 30, 100, 100);
        f.add(l2);
        JTextField t1=new JTextField("welcome GUI");
        t1.setBounds(120, 50, 200, 500);
        f.add(t1);
        JTextArea ta=new JTextArea("sswing ba DSani");
        ta.setBounds(130, 50, 200, 500);
        f.add(ta);
        f.setSize(500,500);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }
}
```

Output:

OOP LAB REPORTS



PROGRAM 13

Source code:

```
package componets.layoutout;
import javax.swing.*;
import java.awt.*;
public class ComponetsLayoutout {
    public static void main(String[] args) {
        JFrame f=new JFrame();
        DefaultListModel<String>l1=new DefaultListModel<>();
```


OOP LAB REPORTS

```
l1.addElement("Iteam 1");  
l1.addElement("item 2");  
l1.addElement("Item 3");  
JList<String>list=new JList(l1);  
list.setBounds(0, 0, 70, 60);  
f.add(list);
```

```
JScrollBar j=new JScrollBar();  
j.setBounds(100, 100, 50, 40);  
f.add(j);  
f.setLayout(null);  
f.setSize(500,500);  
f.setVisible(true);  
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
  
}  
  
}
```

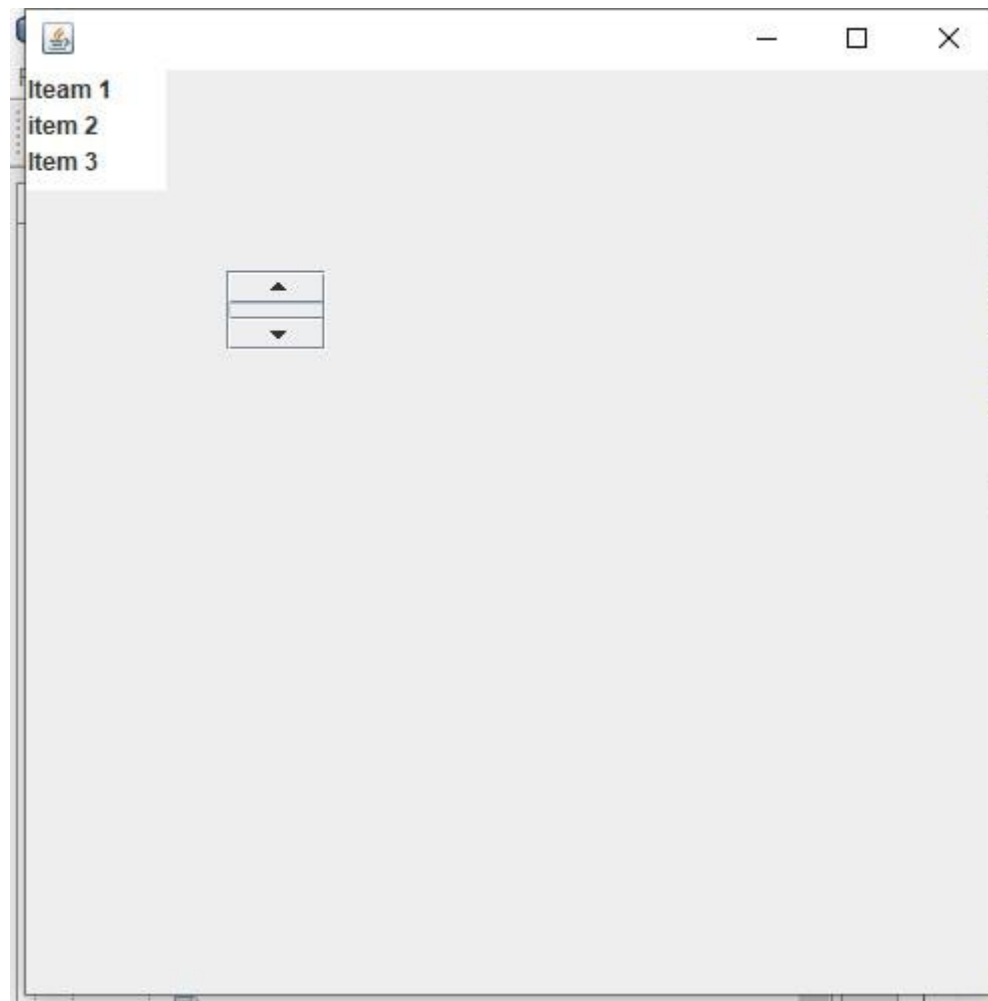
Input:

OOP LAB REPORTS

```
package componets.layout;  
import javax.swing.*;  
import java.awt.*;  
public class ComponetsLayout {  
    public static void main(String[] args) {  
        JFrame f=new JFrame();  
        DefaultListModel<String>ll=new DefaultListModel<>();  
        ll.addElement("Iteam 1");  
        ll.addElement("item 2");  
        ll.addElement("Item 3");  
        JList<String>list=new JList(ll);  
        list.setBounds(0, 0, 70, 60);  
        f.add(list);  
  
        JScrollBar j=new JScrollBar();  
        j.setBounds(100, 100, 50, 40);  
        f.add(j);  
        f.setLayout(null);  
        f.setSize(500,500);  
        f.setVisible(true);  
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
    }  
}
```

Output:

OOP LAB REPORTS



PROGRAM 14

Source code:

```
package labtask.pkgclass.on.tewlve.dec;
```

```
import javax.swing.*.*;
```

```
import java.awt.*.*;
```

```
public class LabTaskClassOnTewlveDEC {
```

```
    public static void main(String[] args) {
```

OOP LAB REPORTS

```
JFrame f=new JFrame("login");
JTextField t=new JTextField("User name");
JTextField t1=new JTextField("Sections");
JCheckBox b1=new JCheckBox("java");
JCheckBox b2=new JCheckBox("c++");
    JButton b=new JButton("Submit");
    f.add(t);
    f.add(t1);
    f.add(b1);
    f.add(b2);
    f.add(b);
    f.setLayout((new FlowLayout()));
    f.setSize(500,500);
f.setVisible(true);
    f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

}

}
```

Input:

OOP LAB REPORTS

```
import javax.swing.*;
import java.awt.*;

public class LabTaskClassOnTewlveDEC {

    public static void main(String[] args) {
        JFrame f=new JFrame("login");
        JTextField t=new JTextField("User name");
        JTextField tl=new JTextField("Sections");
        JCheckBox bl=new JCheckBox("jvaa");
        JCheckBox b2=new JCheckBox("c++");
        JButton b=new JButton("Submit");
        f.add(t);
        f.add(tl);
        f.add(bl);
        f.add(b2);
        f.add(b);
        f.setLayout((new FlowLayout()));
        f.setSize(500,500);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }
}
```

Output:

OOP LAB REPORTS

