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Program 1 - Matrix Multiplication

// Emmanuel Jojy

// S3 CSE A

// Roll no: 53

public class L1\_MatrixMul

{

public static void main(String args[])

{

int a[][] = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};

int b[][] = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};

int c[][] = new int[3][3];

int i, j, k;

System.out.println("Matrix A: ");

for(i = 0; i < 3; i++)

{

for(j = 0; j < 3; j++)

{

System.out.print(a[i][j] + "\t");

}

System.out.println();

}

System.out.println("Matrix B: ");

for(i = 0; i < 3; i++)

{

for(j = 0; j < 3; j++)

{

System.out.print(b[i][j] + "\t");

}

System.out.println();

}

System.out.println("A x B: ");

for (i = 0; i < 3; i++)

{

for (j = 0; j < 3; j++)

{

for (k = 0; k < 3; k++)

{

c[i][j] = c[i][j] + (a[i][k] \* b[k][j]);

}

}

}

for(i = 0; i < 3; i++)

{

for(j = 0; j < 3; j++)

{

System.out.print(c[i][j] + "\t");

}

System.out.println();

}

}

}

Output:

Matrix A:

1 2 3

4 5 6

7 8 9

Matrix B:

1 2 3

4 5 6

7 8 9

A x B:

30 36 42

66 81 96

102 126 150

Program 2 – OOP Concept Inheritance

// Emmanuel Jojy

// S3 CSE A

// Roll no: 53

import java.util.Scanner;

public class Employee

{

private String name;

private int age;

private long number;

private String address;

private double salary;

// Input

public void setName(String name)

{

this.name = name;

}

public void setAge(int age)

{

this.age = age;

}

public void setNo(long number)

{

this.number = number;

}

public void setAd(String address)

{

this.address = address;

}

public void setSalary(double salary)

{

this.salary = salary;

}

// Display

public String getName()

{

return name;

}

public int getAge()

{

return age;

}

public long getNo()

{

return number;

}

public String getAd()

{

return address;

}

public double getSalary()

{

return salary;

}

}

class Officer extends Employee

{

String specialization;

// Input

public void setSpec(String spec)

{

this.specialization = spec;

}

// Display

public String getSpec()

{

return specialization;

}

}

class Manager extends Employee

{

String department;

// Input

public void setDept(String dept)

{

this.department = dept;

}

// Display

public String getDept()

{

return department;

}

}

class L2\_Emp

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

Officer o = new Officer();

System.out.println("\nClass Officer");

System.out.print("Enter Name: ");

o.setName(sc.nextLine());

System.out.print("Enter Age: ");

o.setAge(sc.nextInt());

System.out.print("Enter Number: ");

o.setNo(sc.nextLong());

System.out.print("Enter Salary: ");

o.setSalary(sc.nextDouble());

System.out.print("Enter Address: ");

o.setAd(sc.next());

System.out.print("Enter Specialization: ");

o.setSpec(sc.next());

System.out.println("\n\nOfficer\nName: "+o.getName()+"\nAge: "+o.getAge()+"\nNumber: "+o.getNo()+"\nSalary: "+o.getSalary()+"\nAddress: "+o.getAd());

System.out.println("Specialization: "+o.getSpec());

Manager m = new Manager();

System.out.println("\n\nClass Manager");

System.out.print("Enter Name: ");

m.setName(sc.next());

System.out.print("Enter Age: ");

m.setAge(sc.nextInt());

System.out.print("Enter Number: ");

m.setNo(sc.nextLong());

System.out.print("Enter Salary: ");

m.setSalary(sc.nextDouble());

System.out.print("Enter Address: ");

m.setAd(sc.next());

System.out.print("Enter Department: ");

m.setDept(sc.next());

System.out.println("\nOfficer\nName: "+m.getName()+"\nAge: "+m.getAge()+"\nNumber: "+m.getNo()+"\nSalary: "+m.getSalary()+"\nAddress: "+m.getAd());

System.out.println("Department: "+m.getDept());

}

}

Output:

Class Officer

Enter Name: Emmanuel

Enter Age: 53

Enter Number: 9447504414

Enter Salary: 250000

Enter Address: Ernkaulam

Enter Specialization: Data-Science

Officer

Name: Emmanuel

Age: 53

Number: 9447504414

Salary: 250000.0

Address: Ernkaulam

Specialization: Data-Science

Class Manager

Enter Name: Ryan

Enter Age: 20

Enter Number: 9447458441

Enter Salary: 200000

Enter Address: Aluva

Enter Department: Manufacturing

Officer

Name: Ryan

Age: 20

Number: 9447458441

Salary: 200000.0

Address: Aluva

Department: Manufacturing

Program 3 – OOP Concept Polymorphism

// Emmanuel Jojy

// S3 CSE A

// Roll no: 53

abstract class Shape{

abstract int numberOfSides();

}

class Rectangle extends Shape{

int numberOfSides(){

return 4;

}

}

class Triangle extends Shape{

int numberOfSides(){

return 3;

}

}

class Hexagon extends Shape{

int numberOfSides(){

return 6;

}

}

public class L3\_Abst

{

public static void main(String[] args)

{

Shape ref;

Rectangle r = new Rectangle();

Triangle t = new Triangle();

Hexagon h = new Hexagon();

ref = r;

System.out.println("Rectangle sides: " + ref.numberOfSides());

ref = t;

System.out.println("Triangle sides: " + ref.numberOfSides());

ref = h;

System.out.println("Hexagon sides: " + ref.numberOfSides());

}

}

Output:

Rectangle sides: 4

Triangle sides: 3

Hexagon sides: 6

Program 4 – String: Palindrome

//Emmanuel Jojy

//S3 CSE A

//Roll no: 53

import java.util.\*;

public class L4\_Palin{

void fun(){

System.out.print("Enter String: ");

Scanner sc = new Scanner(System.in);

String s = sc.next();

int i, j;

for(i = 0, j = s.length() - 1; i <= j; i++, j--){

if(s.charAt(i) != s.charAt(j)){

System.out.println(s + " Not Palindrome");

return;

}

}

System.out.println(s + " Is Palindrome");

}

public static void main(String[] args){

L4\_Palin obj = new L4\_Palin();

obj.fun();

}

}

Output:

Enter String: malayalam

malayalam Is Palindrome

Program 5 – String: Occurrence of a Character

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.util.Scanner;

class L5\_Occurence{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

String s;

char ch;

int count = 0, i = 0;

System.out.print("Enter String: ");

s = sc.nextLine();

System.out.print("Enter Character: ");

ch = sc.next().charAt(0);

while(i < s.length()){

i = s.indexOf(ch, i);

if(i == -1)

break;

else{

count++;

i++;

}

}

System.out.println("\n" + ch + " appears " + count + " times.");

}

}

Output:

Enter String: malayalam

Enter Character: a

a appears 4 times.

Program 6 – Doubly Linked List

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.util.Scanner;

class Node{

int data;

Node prev, next;

}

class DLL{

Scanner sc = new Scanner(System.in);

private Node head, tail;

DLL(){

head = null;

tail = null;

}

private void ins(){

Node n = new Node();

System.out.print("\tEnter data to insert: ");

n.data = sc.nextInt();

n.next = head;

n.prev = null;

if(head != null)

head.prev = n;

else

tail = n;

head = n;

System.out.println("\tSuccessfully inserted " + n.data + ".");

}

private void del(){

if(head == null && tail == null){

System.out.print("\tNo element in DLL to delete.");

return;

}

int item, flag = 0;

System.out.print("\tEnter element to delete: ");

item = sc.nextInt();

Node temp;

for(temp = head; temp != null; temp = temp.next){

if(temp.data == item){

flag = 1;

break;

}

}

if(flag == 0){

System.out.print("\tElement not found");

return;

}

if(temp.prev != null && temp.next != null){

temp.prev.next = temp.next;

temp.next.prev = temp.prev;

}

else if(temp.prev == null && temp.next == null){

head = null;

tail = null;

}

else if(temp.prev == null){

head = temp.next;

temp.next.prev = null;

}

else{ // Last Element

tail = temp.prev;

temp.prev.next = null;

}

System.out.println("\tSuccessfully deleted the element " + item);

}

private void display(){

if(head == null && tail == null){

System.out.println("\tCurent DLL Empty");

}

else{

System.out.print("\n\tCurrent DLL >>> \_head\_ <-> ");

Node temp;

for(temp = head; temp != null; temp = temp.next)

System.out.print(temp.data + " <-> ");

System.out.println("\_tail\_");

}

}

public void f(){

while(true){

System.out.println("\n\*\*\* Doubly Linked List [DLL] \*\*\*");

System.out.print("1. Insert 2. Delete 3. Display 4. Quit\nEnter Choice: ");

int ch = sc.nextInt();

switch(ch){

case 1: ins(); break;

case 2: del(); break;

case 3: display(); break;

default : return;

}

}

}

}

class L6\_List\_min{

public static void main(String[] args){

DLL obj = new DLL();

obj.f();

}

}

Output:

\*\*\* Doubly Linked List [DLL] \*\*\*

1. Insert 2. Delete 3. Display 4. Quit

Enter Choice: 1

Enter data to insert: 10

Successfully inserted 10.

\*\*\* Doubly Linked List [DLL] \*\*\*

1. Insert 2. Delete 3. Display 4. Quit

Enter Choice: 1

Enter data to insert: 20

Successfully inserted 20.

\*\*\* Doubly Linked List [DLL] \*\*\*

1. Insert 2. Delete 3. Display 4. Quit

Enter Choice: 3

Current DLL >>> \_head\_ <-> 20 <-> 10 <-> \_tail\_

\*\*\* Doubly Linked List [DLL] \*\*\*

1. Insert 2. Delete 3. Display 4. Quit

Enter Choice: 2

Enter element to delete: 10

Successfully deleted the element 10

\*\*\* Doubly Linked List [DLL] \*\*\*

1. Insert 2. Delete 3. Display 4. Quit

Enter Choice: 4

Program 7 – Exception Handling

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

class Sub{

public void f() throws Exception{

try{

System.out.println("From try in F()");

throw new Exception();

}

finally{

System.out.println("From finally");

}

}

}

public class L7\_Exception{

public static void main(String[] args){

try{

Sub obj =new Sub();

obj.f();

}

catch(Exception e){

System.out.println("Handled in main()");

}

}

}

Output:

From try in F()

From finally

Handled in main()

Program 8 – File Handling

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.io.\*;

public class P26\_File{

public static void main(String[] args){

try{

FileInputStream fin = new FileInputStream("fin.txt");

FileOutputStream fout = new FileOutputStream("fout.txt");

int i;

for(i = fin.read(); i != -1; i = fin.read()){

fout.write(i);

}

}

catch(FileNotFoundException e){

System.out.println("Check if file exist. Error encountered. " + e);

}

catch(IOException e){

System.out.println("Error encountered. " + e);

}

System.out.println("\Successfully copied from fin.txt to fout.txt\n");

}

}

Output:

Successfully copied from fin.txt to fout.txt

Program 9 – Binary Search

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.io.\*;

public class P34\_BinarySearch{

BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));

void display(int arr[]){

for(int i = 0; i < arr.length; i++){

System.out.print(arr[i] + " ");

}

System.out.println();

}

void sort(int arr[]){

int i, j, temp;

for(i = 0; i < arr.length - 1; i++){

for(j = 0; j < arr.length - i -1; j++){

if(arr[j] > arr[j + 1]){

temp = arr[j];

arr[j] = arr[j + 1];

arr[j + 1] = temp;

}

}

}

}

void bsearch(int arr[], int key){

int low = 0, high = arr.length - 1;

int mid = (low + high) / 2;

while(key != arr[mid] && low < high){

if(key > arr[mid])

low = mid + 1;

else

high = mid - 1;

mid = (low + high) / 2;

}

if(key == arr[mid])

System.out.println(key + " Found at index " + mid);

else

System.out.println("Element Not Found!");

}

void call()throws IOException{

int i;

System.out.print("Enter Number of Elements: ");

int n = Integer.parseInt(obj.readLine());

int arr[] = new int[n], key;

System.out.println("Enter elements: ");

for(i = 0; i < n; i++){

System.out.print("arr[" + i +"]: ");

arr[i] = Integer.parseInt(obj.readLine());

}

System.out.print("Input Matrix: ");

display(arr);

sort(arr);

System.out.print("Sort Matrix: ");

display(arr);

System.out.print("Enter Element to Search: ");

key = Integer.parseInt(obj.readLine());

bsearch(arr, key);

}

public static void main(String[] args)throws IOException{

new P34\_BinarySearch.call();

}

}

Output:

Enter Number of Elements: 5

Enter elements:

arr[0]: 9

arr[1]: 65

arr[2]: 8

arr[3]: 0

arr[4]: 21

Input Matrix: 9 65 8 0 21

Sort Matrix: 0 8 9 21 65

Enter Element to Search: 65

65 Found at index 4

Program 10(a) – Quick Sort (Integers)

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.util.Scanner;

public class L8\_Quick{

int A[], n;

public void swap(int a, int b){

int temp = A[a];

A[a] = A[b];

A[b] = temp;

}

public void quick(int lb, int ub){

if(lb < ub){

int i = lb, j = ub, pivot = A[lb];

while(i < j){

while(i <= ub && A[i] <= pivot){

i++;

}

while(j >= lb && A[j] > pivot){

j--;

}

if(i < j){

swap(i, j);

}

}

swap(lb, j);

quick(lb, j - 1);

quick(j + 1, ub);

}

}

public void f(){

Scanner sc = new Scanner(System.in);

System.out.print("Enter Number of Elements: ");

n = sc.nextInt();

A = new int[n];

System.out.println("Enter Elements");

for(int i = 0; i < n; i++){

System.out.print("A[" + i + "]: ");

A[i] = sc.nextInt();

}

System.out.print("\nUnsorted Array: ");

for(int i = 0; i < n; i++){

System.out.print(A[i] + " ");

}

quick(0, n - 1);

System.out.print("\nSorted Array: ");

for(int i = 0; i < n; i++){

System.out.print(A[i] + " ");

}

System.out.println();

}

public static void main(String[] args){

new L8\_Quick().f();

}

}

Output:

Enter Number of Elements: 5

Enter Elements

A[0]: 5

A[1]: 9

A[2]: 4

A[3]: 2

A[4]: 0

Unsorted Array: 5 9 4 2 0

Sorted Array: 0 2 4 5 9

Program 10(b) – Quick Sort (Strings)

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.io.\*;

public class L8\_Quick\_String{

String A[];

int n;

public void swap(int a, int b){

String temp = A[a];

A[a] = A[b];

A[b] = temp;

}

public void quick(int lb, int ub){

if(lb < ub){

int i = lb, j = ub;

String pivot = A[lb];

while(i < j){

while(i <= ub && A[i].compareToIgnoreCase(pivot) <= 0)

i++;

while(j >= lb && A[j].compareToIgnoreCase(pivot) > 0)

j--;

if(i < j)

swap(i, j);

}

swap(lb, j);

quick(lb, j - 1);

quick(j + 1, ub);

}

}

public void f()throws IOException{

BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));

System.out.print("Enter Number of Elements: ");

n = Integer.parseInt(obj.readLine());

A = new String[n];

System.out.println("Enter Elements");

for(int i = 0; i < n; i++){

System.out.print("A[" + i + "]: ");

A[i] = obj.readLine();

}

System.out.print("\nUnsorted Array: ");

for(int i = 0; i < n; i++)

System.out.print(A[i] + " ");

quick(0, n - 1);

System.out.print("\nSorted Array: ");

for(int i = 0; i < n; i++)

System.out.print(A[i] + " ");

}

public static void main(String[] args)throws IOException{

new L8\_Quick\_String.f();

}

}

Output:

Enter Number of Elements: 6

Enter Elements

A[0]: Emmanuel

A[1]: Daniel

A[2]: Bivin

A[3]: Alexandra

A[4]: Abhishek

A[5]: Basil

Unsorted Array: Emmanuel Daniel Bivin Alexandra Ajin Basil

Sorted Array: Ajin Alexandra Basil Bivin Daniel Emmanuel

Program 11 – Simple Calculator

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.\*;

public class L9\_JCalc implements ActionListener{

JTextField t1;

JButton n0, n1, n2, n3, n4, n5, n6, n7, n8, n9;

JButton b1, b2, b3, b4, b5, b6, b7, b8, b9;

double a = 0, b = 0, res;

char oper = '+';

public L9\_JCalc(){

JFrame f = new JFrame("Simple Calculator");

f.setSize(800, 600);

f.setVisible(true);

f.setLayout(null);

f.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

t1 = new JTextField(5);

f.add(t1);

t1.setBounds(100, 100, 200, 50);

n9 = new JButton("9"); f.add(n9);

n8 = new JButton("8"); f.add(n8);

n7 = new JButton("7"); f.add(n7);

n6 = new JButton("6"); f.add(n6);

n5 = new JButton("5"); f.add(n5);

n4 = new JButton("4"); f.add(n4);

n3 = new JButton("3"); f.add(n3);

n2 = new JButton("2"); f.add(n2);

n1 = new JButton("1"); f.add(n1);

n0 = new JButton("0"); f.add(n0);

b1 = new JButton("+"); f.add(b1);

b2 = new JButton("-"); f.add(b2);

b3 = new JButton("\*"); f.add(b3);

b4 = new JButton("/"); f.add(b4);

b5 = new JButton("="); f.add(b5);

b6 = new JButton("C"); f.add(b6);

b7 = new JButton("%"); f.add(b7);

b8 = new JButton("."); f.add(b8);

b9 = new JButton("<"); f.add(b9);

n9.addActionListener(this); n9.setBounds(100,200,50,50);

n8.addActionListener(this); n8.setBounds(150,200,50,50);

n7.addActionListener(this); n7.setBounds(200,200,50,50);

n6.addActionListener(this); n6.setBounds(100,250,50,50);

n5.addActionListener(this); n5.setBounds(150,250,50,50);

n4.addActionListener(this); n4.setBounds(200,250,50,50);

n3.addActionListener(this); n3.setBounds(100,30050, 50);

n2.addActionListener(this); n2.setBounds(150,300,50,50);

n1.addActionListener(this); n1.setBounds(200,300,50,50);

n0.addActionListener(this); n0.setBounds(100,400,50,50);

b1.addActionListener(this); b1.setBounds(100,350,50,50);

b2.addActionListener(this); b2.setBounds(150,350,50,50);

b3.addActionListener(this); b3.setBounds(200,350,50,50);

b4.addActionListener(this); b4.setBounds(250,350,50,50);

b5.addActionListener(this); b5.setBounds(200,400,100,50);

b6.addActionListener(this); b6.setBounds(250,200,50,50);

b7.addActionListener(this); b7.setBounds(250,300,50,50);

b8.addActionListener(this); b8.setBounds(150,400,50,50);

b9.addActionListener(this); b9.setBounds(250,250,50,50);

}

public void actionPerformed(ActionEvent e){

JButton click = (JButton)e.getSource();

char ch = click.getActionCommand().charAt(0);

String s = t1.getText();

if(ch == '='){

b = Double.parseDouble(s);

result();

}

else if(ch == 'C'){

t1.setText("");

oper = '!';

a = 0;

b = 0;

}

else if(ch == '+' || ch == '-' || ch == '\*' || ch == '/' || ch == '%'){

a = Double.parseDouble(s);

t1.setText("");

oper = ch;

}

else if(ch == '<'){

t1.setText(s.substring(0, s.length() - 1));

}

else{

t1.setText(s + ch);

}

}

public void result(){

switch(oper){

case '+': res = a + b; break;

case '-': res = a - b; break;

case '\*': res = a \* b; break;

case '/':{

try{

if(b == 0)

throw new ArithmeticException();

res = a / b;

break;

}

catch(ArithmeticException e){

t1.setText("Divide By Zero");

return;

}

}

case '%': res = a % b; break;

}

t1.setText(String.valueOf(res));

}

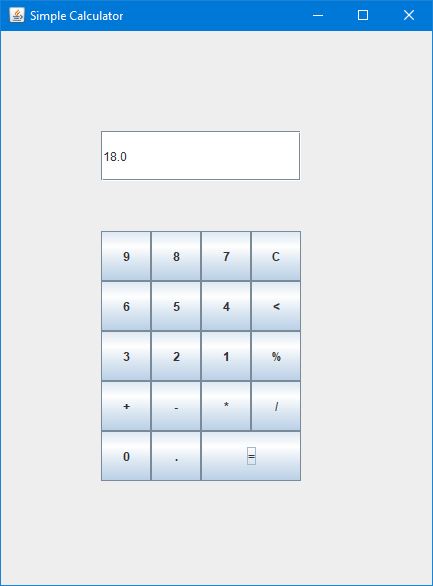
public static void main(String[] Args){

new L9\_JCalc();

}

}

Output:



Program 12 – JDBC Implementation

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.sql.\*;

import java.io.\*;

public class L10\_JDBC{

Statement st;

ResultSet res;

String query;

BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));

public L10\_JDBC(){

try{

Class.forName("org.postgresql.Driver");

Connection c = DriverManager.getConnection("jdbc:postgresql://john.db.elephantsql.com:5432/","kblfyfsr","ugaYHPvD9LGnFYih\_9IR1lqU\_f3pfFBe");

st = c.createStatement();

}

catch(ClassNotFoundException e){

System.out.println("Class Missing. " + e);

System.exit(0);

}

catch(SQLException e){

System.out.println(e);

System.exit(0);

}

}

public void show(){

try{

query = "SELECT \* FROM stud ORDER BY ROLL ASC;";

res = st.executeQuery(query);

System.out.println("\n\tROLL\tNAME\t\t\tDEPT\tCGPA\n");

while(res.next()){

System.out.println("\t" + res.getString("ROLL") + "\t" + res.getString("NAME") + "\t\t" + res.getString("DEPT") + "\t" + res.getDouble("CGPA"));

}

}

catch(SQLException e){

System.out.println(e);

}

}

public static void main(String[] args){

L10\_JDBC.show();

}

}

Output:

ROLL NAME DEPT CGPA

6 ADHIL MUHAMMAD CSE 9.02000046

18 ALEXANDRA A CSE 9.19999981

35 ASHWIN M S CSE 9.5

43 AYISHA E A CSE 9.35599995

44 BASIL SAJEEV CSE 8.5

46 BIVIN C BENNY CSE 9.02999973

49 DANIEL ALEX CSE 9.89000034

53 EMMANUEL JOJY CSE 8.5

62 JISS JOSE CSE 8.89999962

63 JOBIN SEBASTIAN CSE 9.10000038

Program 13 – Traffic Signal

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

// Program: 13

// Traffic Signal using Swing

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.\*;

public class L11\_Traffic implements ActionListener{

JFrame f;

JRadioButton b1, b2, b3;

static int select = 0;

Signal s = null;

public L11\_Traffic(){

f = new JFrame("MyFrame");

f.setSize(400, 200);

f.setVisible(true);

f.setLayout(null);

f.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

b1 = new JRadioButton("Stop");

b1.setBounds(0, 0, 90, 20);

b1.addActionListener(this);

f.add(b1);

b2 = new JRadioButton("Ready");

b2.setBounds(100, 0, 90, 20);

b2.addActionListener(this);

f.add(b2);

b3 = new JRadioButton("Go");

b3.setBounds(200, 0, 90, 20);

b3.addActionListener(this);

f.add(b3);

ButtonGroup bg = new ButtonGroup();

bg.add(b1); bg.add(b2); bg.add(b3);

s = new Signal();

f.add(s);

}

public void actionPerformed(ActionEvent e){

if(e.getActionCommand() == "Stop")

select = 1;

else if(e.getActionCommand() == "Ready")

select = 2;

else

select = 3;

s.repaint();

}

public static void main(String[] Args){

new L11\_Traffic();

}

}

class Signal extends JPanel{

public Signal(){

setBounds(600, 100, 200, 500);

}

public void paint(Graphics g){

super.paint(g);

g.setColor(Color.black);

g.drawOval(0, 0, 50,50);

g.drawOval(60, 0, 50, 50);

g.drawOval(120, 0, 50, 50);

if(L11\_Traffic.select == 1){

g.setColor(Color.red);

g.fillOval(0, 0, 50,50);

}

if(L11\_Traffic.select == 2){

g.setColor(Color.yellow);

g.fillOval(60, 0, 50, 50);

}

if(L11\_Traffic.select == 3){

g.setColor(Color.green);

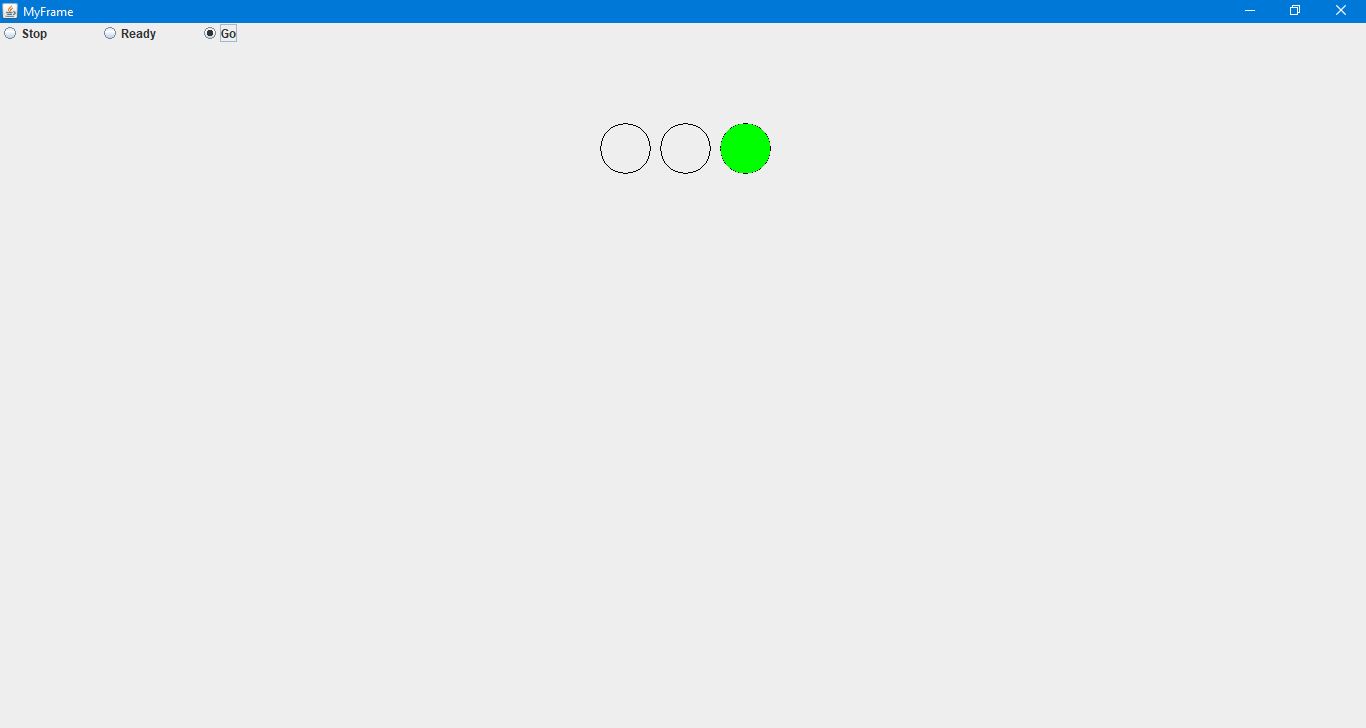
g.fillOval(120, 0, 50, 50);

}

}

}

Output:



Program 14 – String: Tokenizer

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

import java.io.\*;

import java.util.\*;

public class L13\_Token{

public static void main(String[] args){

String s = "";

int sum = 0, n;

try{

BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));

System.out.print("Enter numbers: ");

s = obj.readLine();

}

catch(IOException e){ System.out.println(e); }

System.out.print("\nNumbers are: ");

StringTokenizer token = new StringTokenizer(s, " ");

while(token.hasMoreTokens()){

n = Integer.parseInt(token.nextToken());

System.out.print(n + ", ");

sum += n;

}

System.out.println("\nSum is " + sum);

}

}

Output:

Enter numbers: 5 6 78 48 -12 52 0

Numbers are: 5, 6, 78, 48, -12, 52, 0,

Sum is 177

Program 15 – Random Number Thread

// Emmanuel Jojy

// S3 CSE A

// Roll No. 53

// Program: 15

// Random Number Thread

import java.util.\*;

class Even extends Thread{

int n;

public Even(int num){

n = num;

}

public void run(){

System.out.println("[Even] Square: " + (n \* n));

}

}

class Odd extends Thread{

int n;

public Odd(int num){

n = num;

}

public void run(){

System.out.println("[Odd] Cube: " + (n \* n \* n));

}

}

class Rand extends Thread{

public void run(){

// Generate for 10 times

Random r = new Random();

for(int i = 0; i < 10; i++){

int n = r.nextInt(100);

System.out.println("\nGenerated number is: " + n);

if(n % 2 == 0){

Even even = new Even(n);

even.start();

}

else{

Odd odd = new Odd(n);

odd.start();

}

try{

Thread.sleep(1000);

}

catch(InterruptedException e){

System.out.println("Thread Interrupted");

}

}

}

}

public class L12\_Random{

public static void main(String[] args){

new Rand().start();

}

}

Output:

Generated number is: 30

[Even] Square: 900

Generated number is: 58

[Even] Square: 3364

Generated number is: 65

[Odd] Cube: 274625

Generated number is: 52

[Even] Square: 2704

Generated number is: 31

[Odd] Cube: 29791

Generated number is: 17

[Odd] Cube: 4913

Generated number is: 86

[Even] Square: 7396

Generated number is: 87

[Odd] Cube: 658503

Generated number is: 94

[Even] Square: 8836

Generated number is: 75

[Odd] Cube: 421875