Meerut Institute of Engineering and Technology, Meerut

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Session: 2022-2023

MINI PROJECT REPORT

On

"ONLINE VOTING SYSTEM"

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

Submitted to-

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5th SEMESTER
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY, MEERUT

DECLARATION

We hereby declare that the project entitled “ONLINE VOTING SYSTEM”, which is being submitted as Mini Project in department of Computer Science and engineering to Meerut Institute of Engineering and Technology, Meerut is an authentic record of our genuine work done under the guidance of Prof. “Mr. Amit Kumar Saini” of Computer Science and Engineering, Meerut Institute of Engineering and Technology, Meerut.

DATE: 17 November 2022
PLACE: MEERUT

NANDNI DAS SINGHAL
2000680100198

CERTIFICATE

This is to certify that mini project report entitled – "ONLINE VOTING SYSTEM" has been carried out under the guidance of Prof. "Mr. Amit Kumar Saini" of Computer Science and Engineering, Meerut Institute of Engineering and Technology, Meerut. This project report is approved for Mini Project (KCN 354) in 5th semester in "WEB DEVELOPMENT" from Meerut Institute of Engineering and Technology, Meerut.

Mr. Amit Kumar Saini

Date: 17 Nov 2022

ACKNOWLEDGEMENT

I express my sincere indebtedness towards our guide Prof., “Mr. Amit Kumar Saini” of Computer Science and Engineering, Meerut Institute of Engineering and Technology, Meerut for his valuable suggestion, guidance and supervision throughout the work. Without his kind patronage and guidance the project would not have taken shape. I would also like to express my gratitude and sincere regards for his kind approval of the project. Time to time counseling and advises.

I would also like to thank to our HOD Dr. “ Mukesh Rawat”, Department of Computer Science and engineering, Meerut Institute of Engineering and Technology, Meerut for his expert advice and counseling from time to time.

I owe sincere thanks to all the faculty members in the department of Computer Science and engineering for their kind guidance and encouragement time to time.

Date: 17NOV 2022 NANDNI DAS SINGHAL

Table of contents

INTRODUCTION

- The word “vote” means to choose from a list, to elect or to determine. The main goal of voting (in a scenario involving the citizens of a given country) is to come up with leaders of the people’s choice. And the process of voting in an election is called Pole.

- The Online Voting System is a java application which has important features related to GUI and database properties that determine the software requirements for this project. This project is meant for small scale voting processes like college elections or feedback forms. In this project, we will provide an online tool to vote on various questions submitted by the administrator/organizer.

- The purpose of this document is to make the practical and non-functional requirements of the Online Voting System easier to understand. It also works with the aim of making the function clear to end-users.

- A software product is an independent program and not part of a larger program. The system will be made up of two parts. Prior to the voting day, the system will be used for general purposes such as viewing participant profiles and previous voting results. Voters will be able to access the system through Java IDE only.

- The system can be used for general polling in any institutions or communities. E.g.: for college elections, feedback forms etc.

- Less effort and less labour intensive, as the primary cost and focus primary on creating, managing the votes.

- Increasing number of voters as individuals will find it easier and more convenient to vote

- "College Online Voting System" is a java application which uses the concept of Advance Java and GUI. This application provides an easy and simple way to both administrator and voters in the collect polling process. In this application, voters can give their votes to the options that are already provided. The administrator can add all the details of the candidates with the selected department. The administrator can view all the details of the candidates and if necessary, he can delete the details of the candidate. In this application, all the details of the voters can be view in a combine form which makes the work of the administrator easy in analyzing the votes.

Product Functions

- The system can work in two ways, namely, Normal Interaction Mode and Voting Mode. The program will be in voting mode, with the sole purpose of voting on voting day. Normal Collaborative Mode to accept registrations, conversations between voters, and campaigns and programs are available in this mode at all times without voting Days.

User Classes and Characteristics

- 2 major classes will be there Admin class:

- **Admin** can get logged into the application by entering valid credentials. Admin can add candidates. Admin can view the details of the votes and result. Class name is AminFrame.

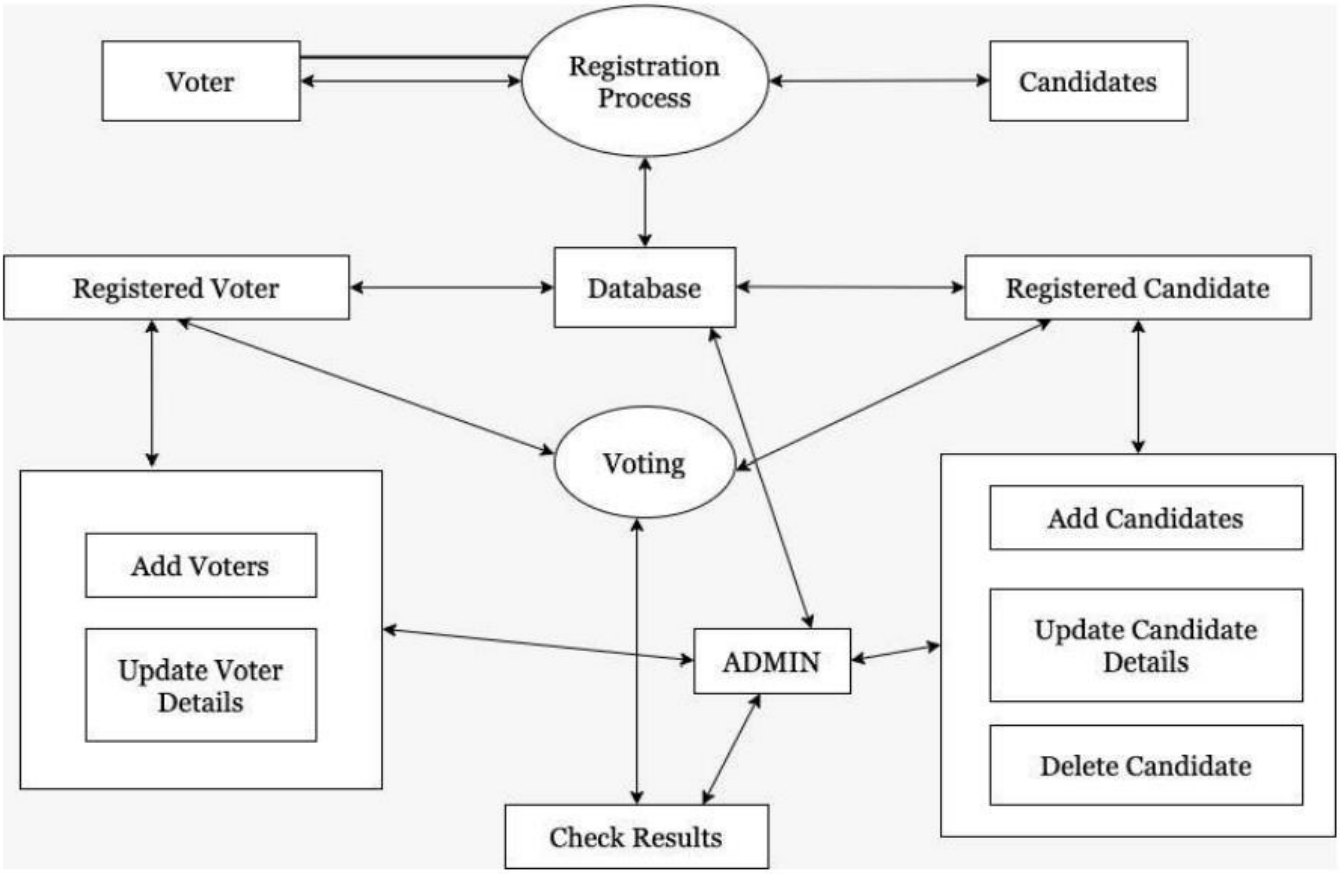
- **Voter class:** Voters can need to get registered with the application by entering all the details in the registration form. The voter can get logged in to the application by entering unique username and password. The voter can fill all the details to give his/her vote.

- For the Registration process, there are classes named RegisterService and RegistrationFrame while for the Voting process, the classes are VoteService, VoteFrame, and VoteException.

- **DAO class** includes all the function by which connectivity with the database is being processed. The Result is being calculated in the Result class.

- **MyProject** is the main class of this project which contains the psvm for the users to sign in and cast their votes. All the classes including 'Frame' in their name, such as WelcomeFrame and ExitFrame, are being used for the GUI function to display the data.

CHAPTER 2
SYSTEM DESIGN



DFD

Safety Requirements

• To prevent data loss in the event of a system failure, the results of the votes are cast until then you should be saved in the database.
• If the Admin finds any security issues in the system, it should be able to shut down shut down the system and block all server communication immediately to save votes have already been cast.
• The system must warn Admin users of system malfunctions.

Security Requirements

• To prevent attack the system should generate random words and ask the user to insert well to try more.
• All passwords generated or received must be stored in a database at encrypted form
• Client data transactions between the client and the server must be encrypted using SSL technology.

Software Quality Attributes

• AVAILABILITY: Favorable candidate or correct answer must be there in the options.
• FLEXIBILITY: The software will be flexible to users.
• CORRECTNESS: The software must count the votes correctly and it should provide a correct percentage distributer.
• MAINTAINABILITY: The admin must maintain the system according to the dates. • USABILITY: The software should be used by maximum no. of candidates for voting.
1. A voter may only cast a ballot if they are eligible to vote.
2. A voter may only cast one (1) ballot per election.
• PORTABILTY: Since its, an online voting system, it is portable i.e. voters can cast their vote from any place.
• SUPPORTABILITY: The “Electronic Voting System” software shall have a clear and easily maintainable interface for managing election specific updates.

CHAPTER-3
TECHNOLOGY BUCKET

JAVA

Java is one of the most popular and widely used programming languages.

- Java has been one of the most popular programming languages for many years.
- Java is Object Oriented. However, it is not considered as pure object-oriented as it provides support for primitive data types (like int, char, etc)
- The Java codes are first compiled into byte code (machine-independent code). Then the byte code runs on **J**ava **V**irtual **M**achine (JVM) regardless of the underlying architecture.
- Java syntax is similar to C/C++. But Java does not provide low-level programming functionalities like pointers. Also, Java codes are always written in the form of classes and objects.
- Java is used in all kinds of applications like Mobile Applications (Android is Java-based), desktop applications, web applications, client-server applications, enterprise applications, and many more.
- When compared with C++, Java codes are generally more maintainable because Java does not allow many things which may lead to bad/inefficient programming if used incorrectly. For example, non-primitives are always references in Java. So we cannot pass large objects (like we can do in C++) to functions, we always pass references in Java. One more example, since there are no pointers, bad memory access is also not possible.
- When compared with Python, Java kind of fits between C++ and Python. The programs are written in Java typically run faster than corresponding Python programs and slower than C++. Like C++, Java does static type checking, but Python does not.

Tool: IntelliJ IDEA

IntelliJ IDEA is an integrated development environment (IDE) written in Java for developing computer software written in Java, Kotlin, Groovy, and other JVM-based languages. It is developed by JetBrains (formerly known as IntelliJ) and is available as an Apache 2 Licensed community edition, and in a proprietary commercial edition. Both can be used for commercial development.

Coding assistance

The IDE provides certain features like code completion by analyzing the context, code navigation which allows jumping to a class or declaration in the code directly, code refactoring, code debugging, linting and options to fix inconsistencies via suggestions.

Built in tools and integration

The IDE provides integration with build/packaging tools like Grunt, bower, Gradle, and sbt. It supports version control systems like Git, Mercurial, Perforce, and SVN. Databases like Microsoft SQL Server, Oracle, PostgreSQL, SQLite, and MySQL can be accessed directly from the IDE in the Ultimate edition, through an embedded version of DataGrip, another IDE developed by JetBrains.

Plugin ecosystem

IntelliJ supports plugins through which one can add additional functionality to the IDE. Plugins can be downloaded and installed either from IntelliJ's plugin repository website or through the IDE's inbuilt plugin search and install feature. Each edition has separate plugin repositories, with both the Community and Ultimate editions totaling over 3000 plugins each as of 2019.[

DATABASE: MySQL

MySQL is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter My, and "SQL", the abbreviation for Structured Query Language. A relational database organizes data into one or more data tables in which data may be related to each other; these relations help structure the data. SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an operating system to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups.

MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB.

MySQL has stand-alone clients that allow users to interact directly with a MySQL database using SQL, but more often, MySQL is used with other programs to implement applications that need relational database capability. MySQL is a component of the LAMP web application software stack (and others), which is an acronym for *Linux*, *Apache*, *MySQL*, *Perl/PHP/Python*. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress. MySQL is also used by many popular websites, including Facebook, Flickr, MediaWiki, Twitter,[1] and YouTube.

Implementation Screenshots/ Result

```
package myproject;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;

public class DAO {
   private Connection con;

   public DAO() {
      try {
         con = DriverManager.getConnection("jdbc:mysql://localhost:3305/polling  system", "root", "root");
         System.out.println("connected");

      } catch (SQLException ex) {
         Logger.getLogger(DAO.class.getName()).log(Level.SEVERE, null, ex);
      }
   }

   static {
      try {
         Class.forName("com.mysql.cj.jdbc.Driver");
         System.out.println("loaded");
      } catch (ClassNotFoundException ex) {
         Logger.getLogger(DAO.class.getName()).log(Level.SEVERE, null, ex);
      }
   }

   public void insertVoter(String fname,String lname,String gender,String pno,String prn,String password) throws VoteException
{
      try {
         int id = 0;
         Statement st = con.createStatement();
         String q= "SELECT * FROM registration ORDER BY id DESC LIMIT 1";
         ResultSet rs = st.executeQuery(q);
         if(rs.next()) {
            id = rs.getInt("id");
            id++;
         }
         String query = "INSERT INTO registration VALUES(?,?,?,?,?,?,?)";
         PreparedStatement ps1 = con.prepareStatement(query);
         ps1.setInt(1, id);
         ps1.setString(2, fname);
         ps1.setString(3, lname);
         ps1.setString(4, gender);
         ps1.setString(5, pno);
         ps1.setString(6, prn);
         ps1.setString(7, password);


         ps1.executeUpdate();
      } catch (SQLException ex) {
         Logger.getLogger(DAO.class.getName()).log(Level.SEVERE, null, ex);
         throw new VoteException();
      } finally {
```

RegistrationFrame class:

```
package myproject;
import javax.swing.JOptionPane;

public class RegisterationFrame extends javax.swing.JFrame {

    //Creates new form java
    public RegisterationFrame() {
        initComponents();
    }

    private void initComponents() {

        jScrollPane1 = new javax.swing.JScrollPane();
        jTree1 = new javax.swing.JTree();
        jSpinner1 = new javax.swing.JSpinner();
        buttonGroup1 = new javax.swing.ButtonGroup();
        buttonGroup2 = new javax.swing.ButtonGroup();
        Fname_label = new javax.swing.JLabel();
        Fname_textfield = new javax.swing.JTextField();
        Lname_label = new javax.swing.JLabel();
        Lname_textfield = new javax.swing.JTextField();
        Gender_label = new javax.swing.JLabel();
        Male_button = new javax.swing.JRadioButton();
        Female_button = new javax.swing.JRadioButton();
        other_button = new javax.swing.JRadioButton();
        Pno_label = new javax.swing.JLabel();
        Pno_textfield = new javax.swing.JTextField();
        prn_label = new javax.swing.JLabel();
        prn_textfield = new javax.swing.JTextField();
        regsubmit_button = new javax.swing.JButton();
        username_label = new javax.swing.JLabel();
        username_textfield = new javax.swing.JTextField();
        password_label = new javax.swing.JLabel();
        cpassword_label = new javax.swing.JLabel();
        cpassword_textfield = new javax.swing.JTextField();
        password_textfield = new javax.swing.JPasswordField();

        jScrollPane1.setViewportView(jTree1);

        setDefaultCloseOperation(javax.swing.WindowConstants.DISPOSE_ON_CLOSE);

        Fname_label.setText("First Name");

        Fname_textfield.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                Fname_textfieldActionPerformed(evt);
            }
        });

        Lname_label.setText("Last Name");

        Gender_label.setText("Gender");

        buttonGroup1.add(Male_button);
        Male_button.setSelected(true);
        Male_button.setText("Male");
```

```
                .addComponent(yes_button)
                .addComponent(no_button))
            .addGap(161, 161, 161))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(21, 21, 21)
                .addComponent(vote_label)
                .addGap(96, 96, 96)
                .addComponent(yes_button)
                .addGap(34, 34, 34)
                .addComponent(no_button)
                .addContainerGap(120, Short.MAX_VALUE))
        );

        pack();
    }

    private void yes_buttonActionPerformed(java.awt.event.ActionEvent evt) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new VoteFrame().setVisible(true);
            }
            });

    }//event_yes_buttonActionPerformed

    private void no_buttonActionPerformed(java.awt.event.ActionEvent evt) {
      java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Result().setVisible(true);
            }
            });
    }//event_no_buttonActionPerformed


    public static void main(String args[]) {
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {
            java.util.logging.Logger.getLogger(AminFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {
            java.util.logging.Logger.getLogger(AminFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
            java.util.logging.Logger.getLogger(AminFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
            java.util.logging.Logger.getLogger(AminFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }

        //Create and display the form
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new AminFrame().setVisible(true);
            }
        });
    }
```

```
    private void signin_buttonActionPerformed(java.awt.event.ActionEvent evt) {
        //event_signin_buttonActionPerformed
        new RegisterationFrame().setVisible(true);
    }
    //event_signin_buttonActionPerformed

    private javax.swing.JPasswordField jPasswordField1;
    private javax.swing.JLabel password_label;
    private javax.swing.JButton signin_button;
    private javax.swing.JLabel signin_label;
    private javax.swing.JButton submit_button;
    private javax.swing.JLabel username_label;
    private javax.swing.JTextField username_textfield;
    // End of variables declaration
}
```

Admin class (AminFrame) :

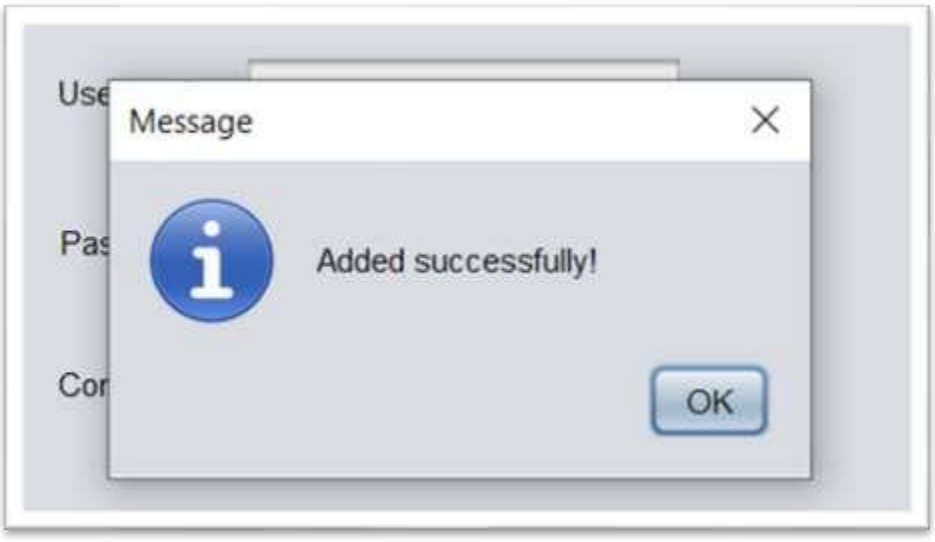
```
package myproject;

import javax.swing.*;

public class AminFrame extends javax.swing.JFrame {

    //Creates new form java
    public AminFrame() {
        initComponents();
    }
    private void initComponents() {

        JLabel vote_label = new JLabel();
        buttonGroup1 = new javax.swing.ButtonGroup();
        yes_button = new javax.swing.JRadioButton();
        no_button = new javax.swing.JRadioButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        vote_label.setText("---ADMIN---");

        buttonGroup1.add(yes_button);
        yes_button.setText("Cast your vote now");
        yes_button.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                yes_buttonActionPerformed(evt);
            }
        });

        buttonGroup1.add(no_button);
        no_button.setText("Check Result");
        no_button.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                no_buttonActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(layout.createSequentialGroup()
```

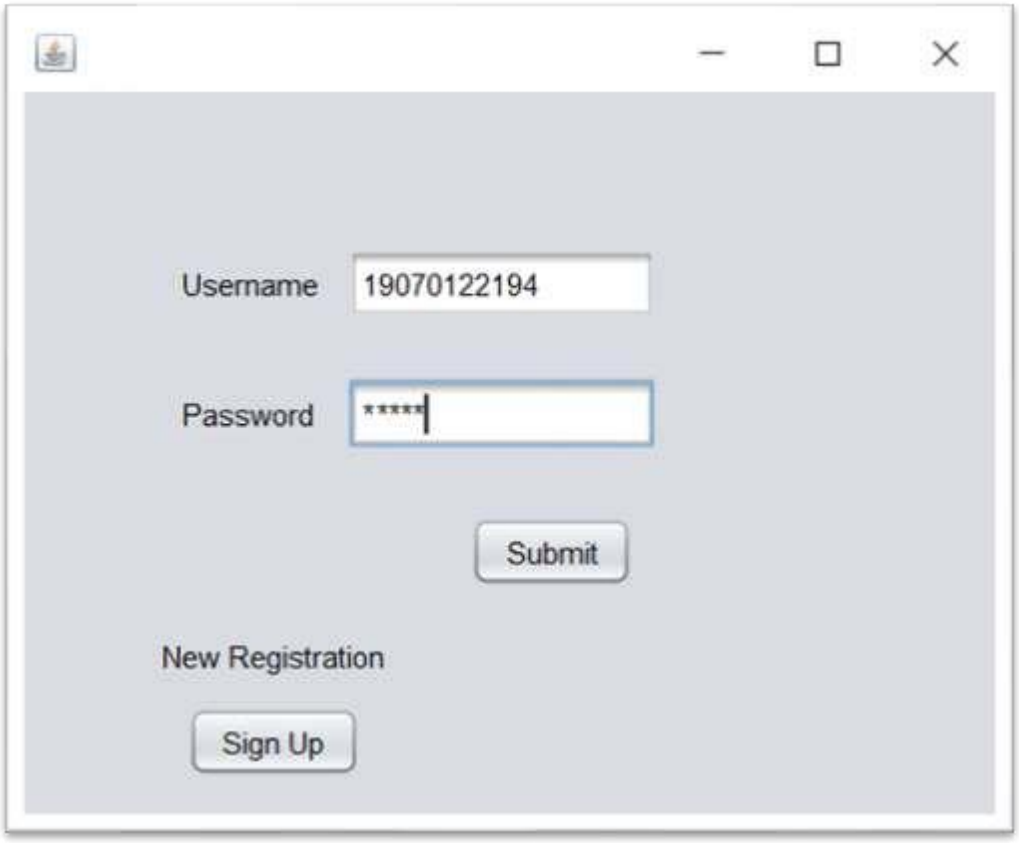
APPLICATION OUTPUTS:

Welcome page/ sign in page:

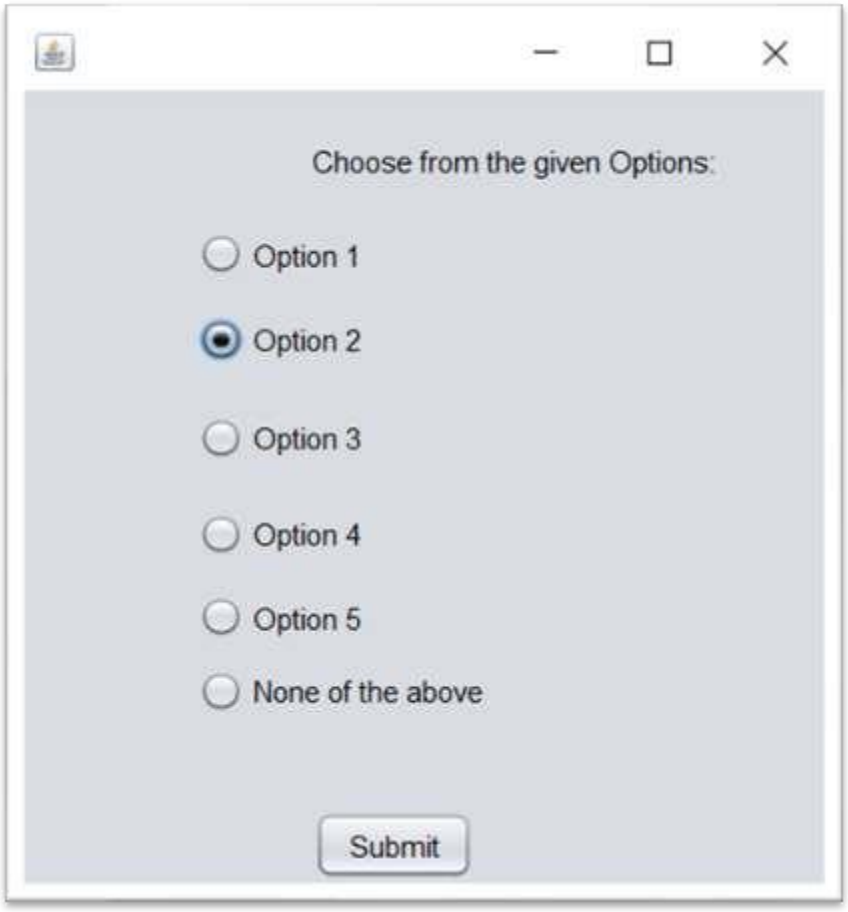
Registration Page:

Registering new user successfully!



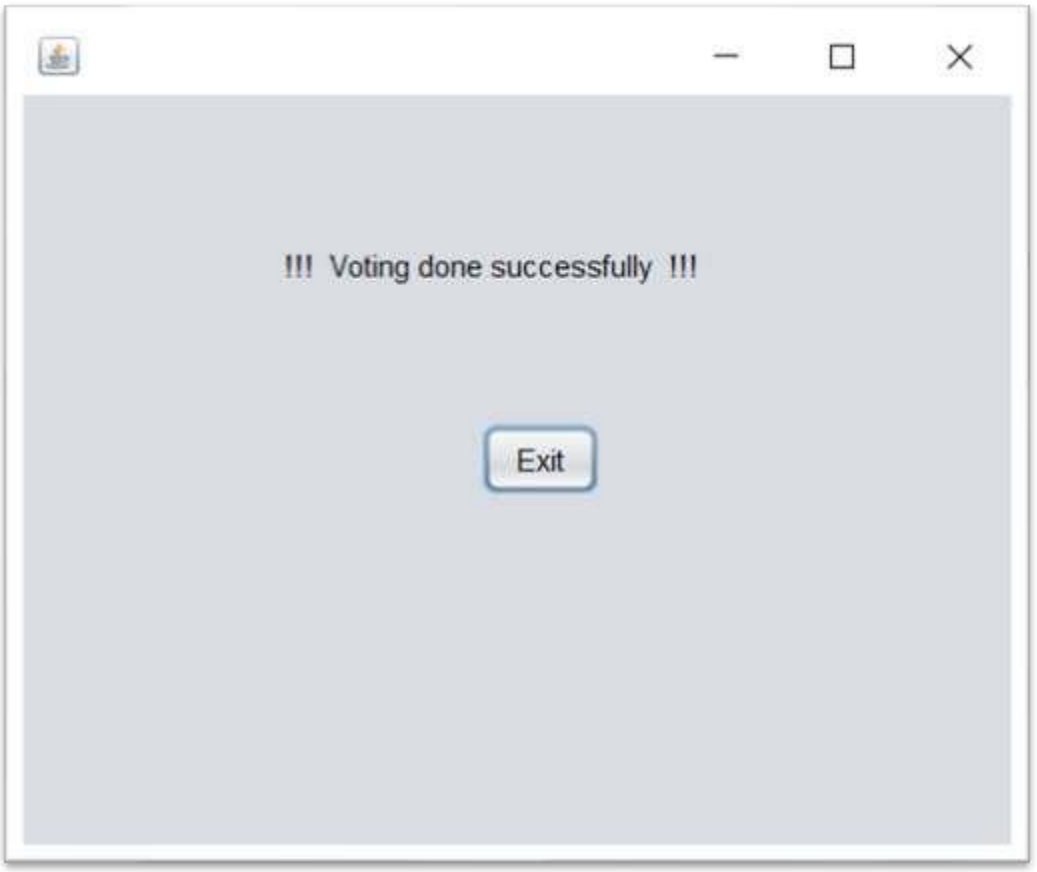


Login in to Vote!

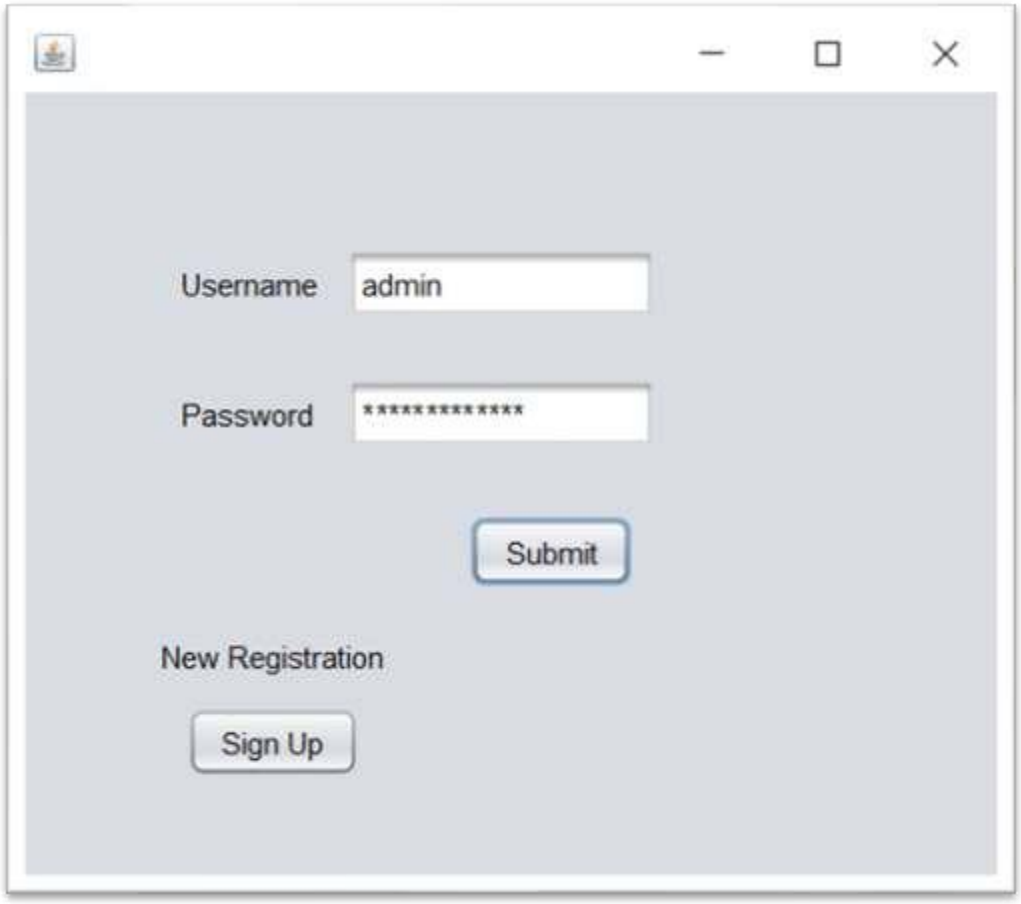


Voting Process!

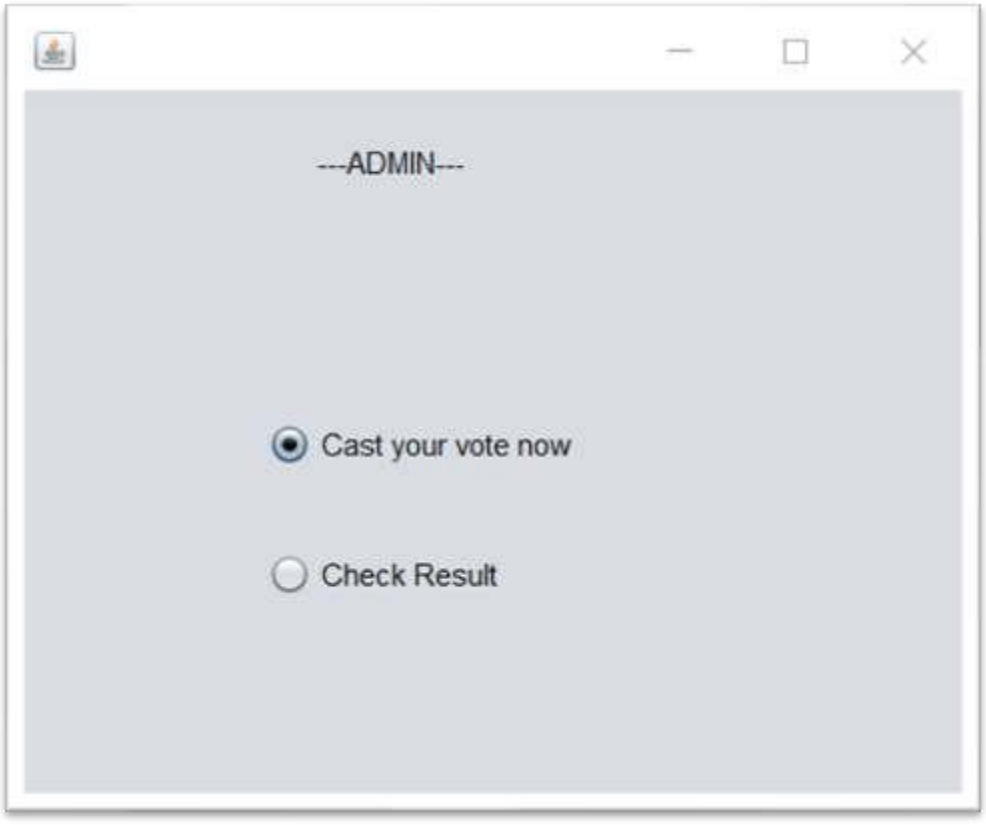
Voting Successful:



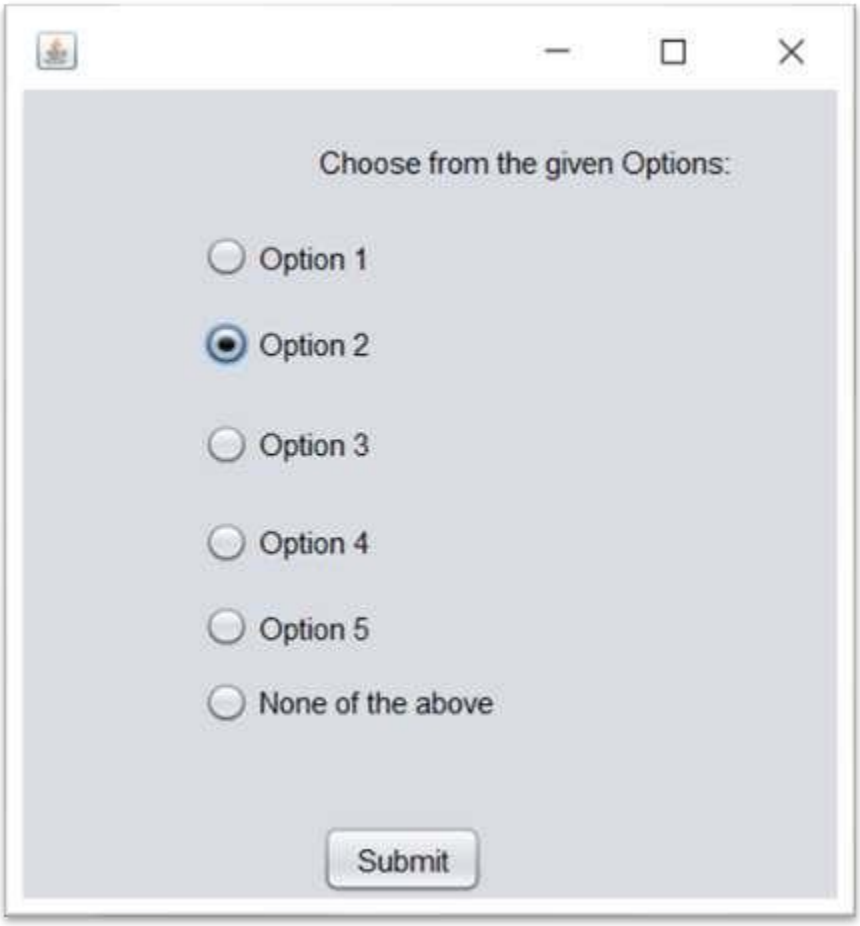
Admin Login:



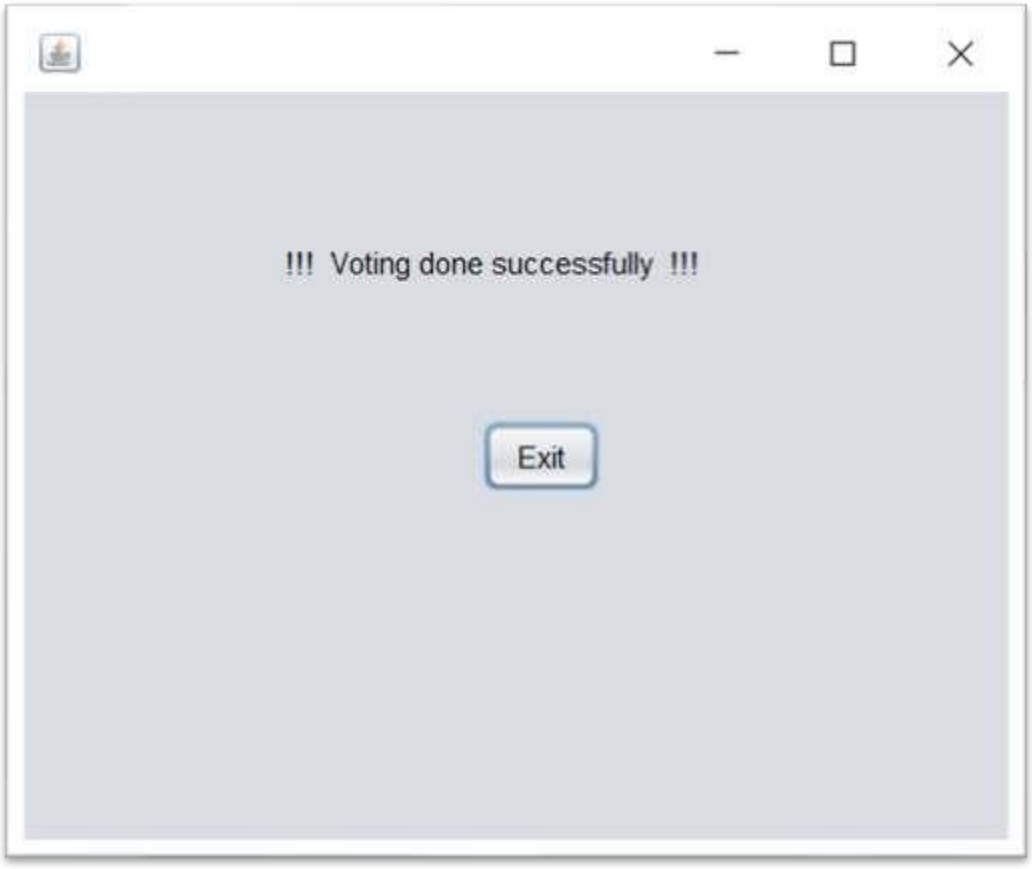
Admin “Voting”:



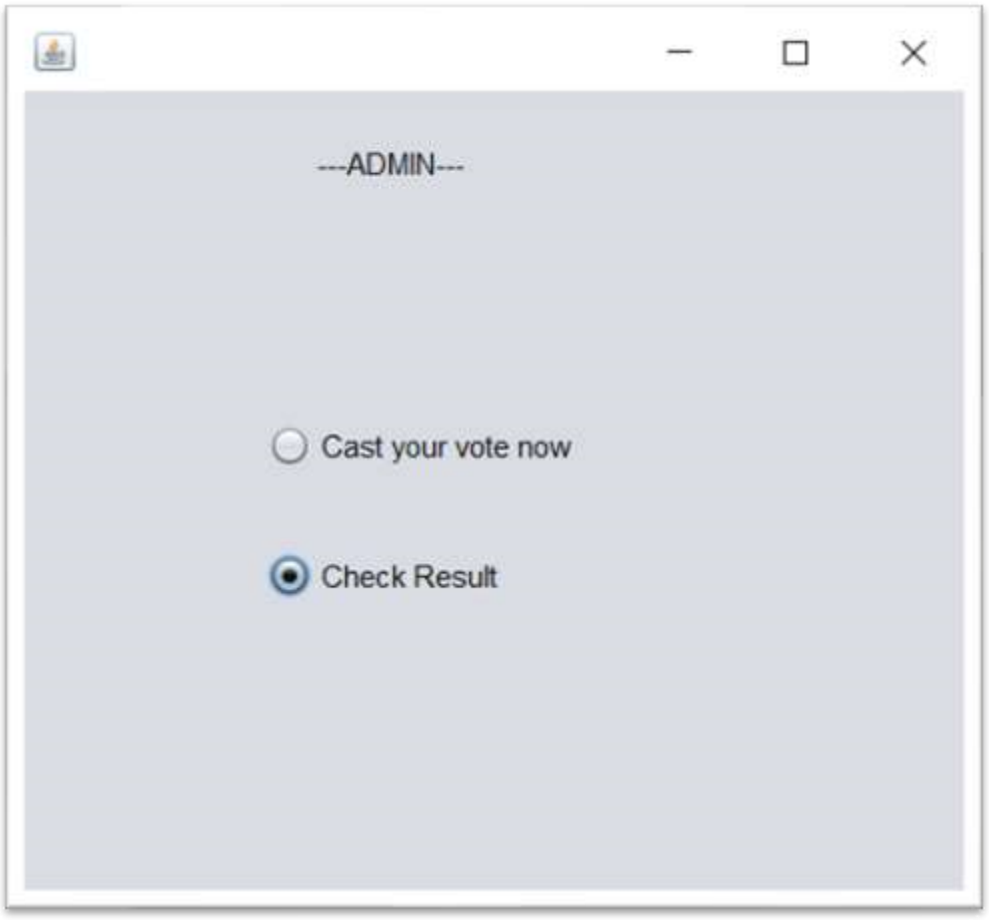
Voting Process for admin:



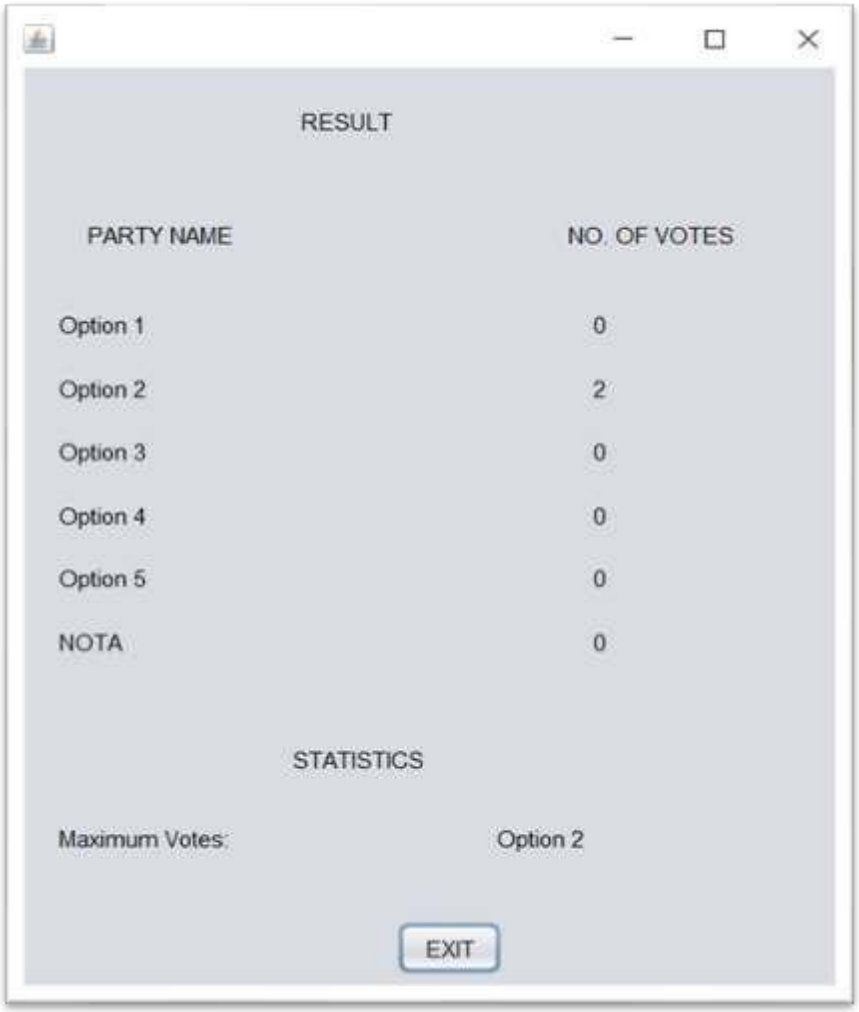
Voting Successful for Admin:



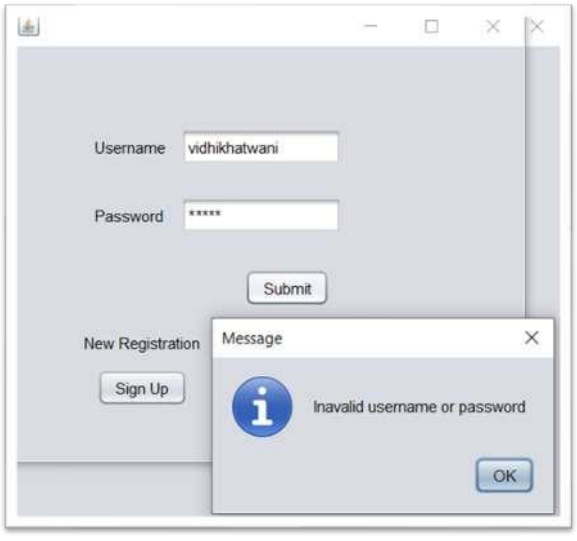
Admin “Check Result”:



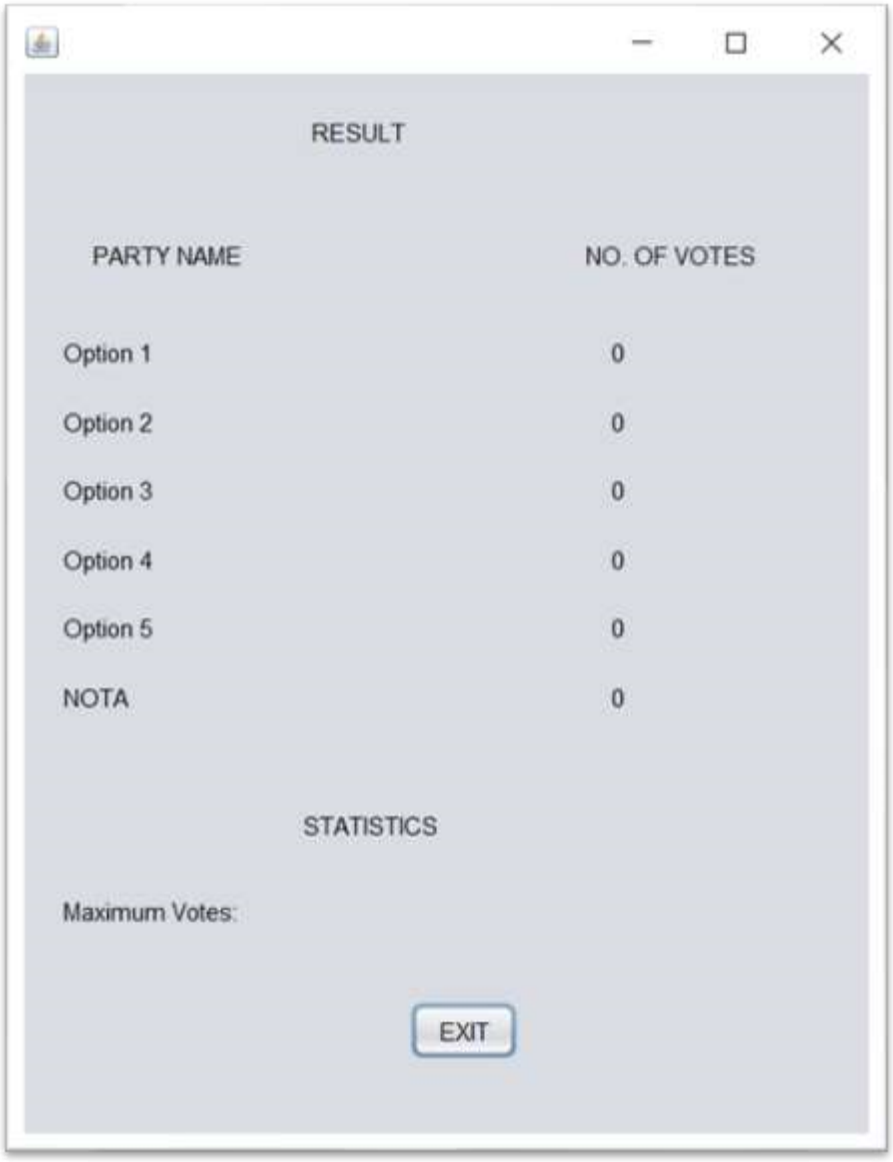
Result page: (after 2 votes)



Logging in with incorrect password:



Result page (before any votes):



Unmatched passwords in Registration form:

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https://www.youtube.com/watch?v=Kmgo00avvEw

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