Green University of Bangladesh

Department of Computer Science and Engineering (CSE)
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Course Title:Object Oriented Programming Lab
Course Code: CSE-202
Section: 222 D4

Online Exam System

Students Details

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[For teachers use only: Don't write anything inside this box]

Lab Project Status	
Marks:	**Signature:**
Comments:	**Date:**

Contents

Chapter 1

Content Overview

1.1 Introduction

The Java Online Exam System is a software application designed to facilitate online exams using Java Swing for the graphical user interface (GUI). The system provides a take the exam system for students and allows them to take exams online

1.2 Java Swing

Java Swing is used to create the system's graphical user interface (GUI). It provides a set of components and containers to build interactive and visually appealing interfaces.

1.3 Registration

The registration system allows students to create an account by providing personal information. It includes functionalities such as account creation.

1.4 System Implementation

The Java Online Exam System is implemented in Java, utilizing various libraries and technologies. The development environment used for this project is Eclipse IDE also Apache Net-Beans. The following steps were involved in the implementation process:

1.5 Exam Taking

When a student insert the her name into the name section and click the rules button then he can select available exams and take them online. The system presents the questions individually and allows students to submit their answers, when he/she was answer

the question he get 15 second if he can't select any option automatic redirect the next question after 15 second.

1.6 Result generation

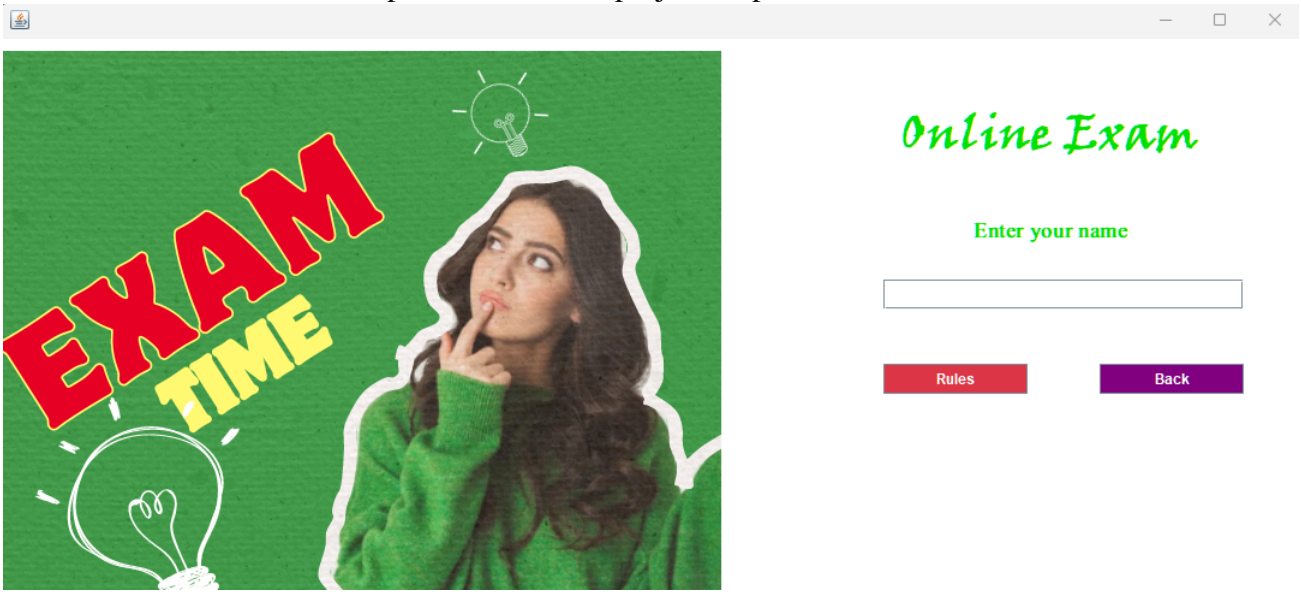
After completing an exam, the system calculates and displays the student's score. It also provides detailed feedback on the answers and indicates the correct ones.

1.7 GUI Development

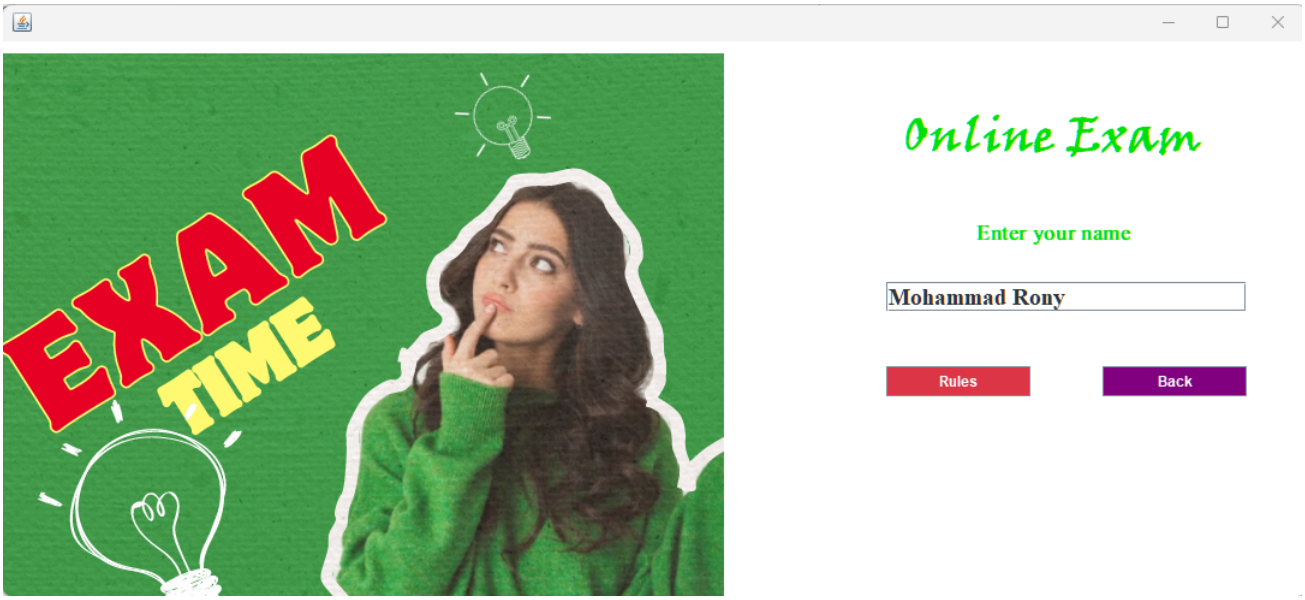
The GUI is developed using Java Swing components. The main interface consists of registration screens, exam screens, and result screens.

1.8 Program GUI Step By Step

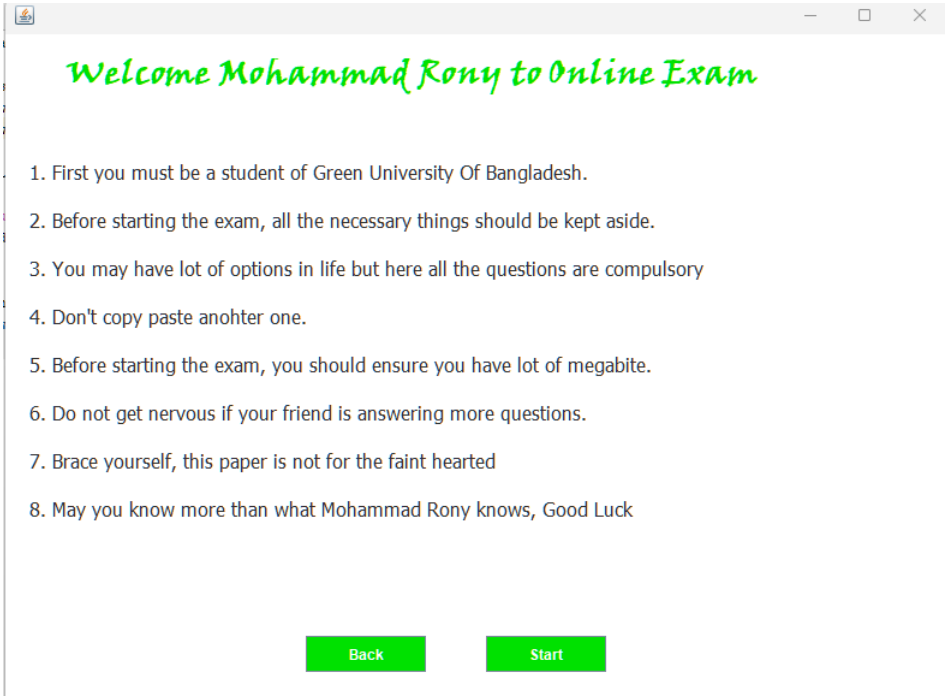
Here some screenshots and explanations of this project output:



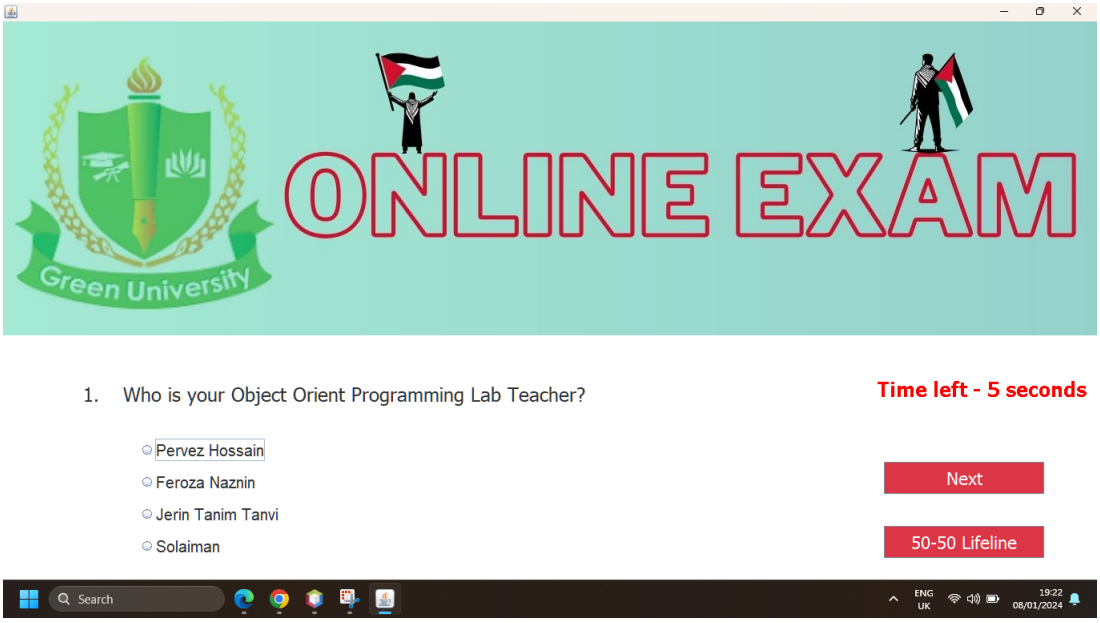
1.9 Take The examiner name



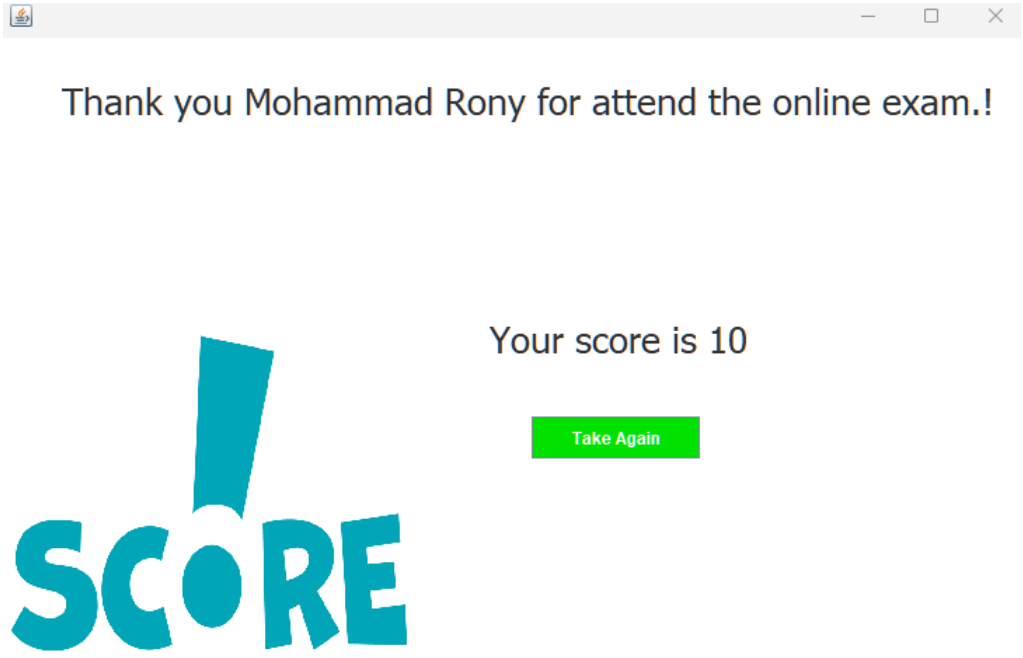
1.10 Rules



1.11 Question Part



1.12 Score



1.13 Code Implementation

1.14 Login Part

```
package quiz.application;
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;

public class Login extends JFrame implements ActionListener{

    JButton rules, back;
    JTextField tfname;

    Login() {
        getContentPane().setBackground(c: Color.WHITE);
        setLayout(manager:null);

        ImageIcon i1 = new ImageIcon(location: ClassLoader.getSystemResource(name: "icons/login.jpeg"));
        JLabel image = new JLabel(image: i1);
        image.setBounds(x: 0, y: 0, width: 600, height: 500);
        add(comp: image);

        JLabel heading = new JLabel(text: "Online Exam");
        heading.setBounds(x: 750, y: 60, width: 300, height: 45);
        heading.setFont(new Font(name: "Viner Hand ITC", style: Font.BOLD, size: 40));
        heading.setForeground(new Color(r: 0, g: 225, b: 0));
        add(comp: heading);

        JLabel name = new JLabel(text: "Enter your name");
        name.setBounds(x: 810, y: 150, width: 300, height: 20);
        name.setFont(new Font(name: "Mongolian Baiti", style: Font.BOLD, size: 18));
        name.setForeground(new Color(r: 0, g: 225, b: 0));
        add(comp: name);
        tfname = new JTextField();
        tfname.setBounds(x: 735, y: 200, width: 300, height: 25);
        tfname.setFont(new Font(name: "Times New Roman", style: Font.BOLD, size: 20));
        add(comp: tfname);

        rules = new JButton(text: "Rules");
        rules.setBounds(x: 735, y: 270, width: 120, height: 25);
        rules.setBackground(new Color(r: 220, g: 53, b: 69));
        rules.setForeground(fg: Color.WHITE);
        rules.addActionListener(l: this);
        add(comp: rules);

        back = new JButton(text: "Back");
        back.setBounds(x: 915, y: 270, width: 120, height: 25);
        back.setBackground(new Color(r: 128, g: 0, b: 128));
        back.setForeground(fg: Color.WHITE);
        back.addActionListener(l: this);
        add(comp: back);

        setSize(width: 1100, height: 500);
        setLocation(x: 200, y: 150);
        setVisible(b: true);
    }
    public void actionPerformed(ActionEvent ae) {
        if (ae.getSource() == rules) {
            String name = tfname.getText();
            setVisible(b: false);
            new Rules(name);
        } else if (ae.getSource() == back) {
            setVisible(b: false);
        }
    }
```

1.15 Quiz Part Code

```
package quiz.application;
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;

public class Quiz extends JFrame implements ActionListener {

    String questions[][] = new String[10][5];
    String answers[][] = new String[10][2];
    String useranswers[][] = new String[10][1];
    JLabel qno, question;
    JRadioButton opt1, opt2, opt3, opt4;
    ButtonGroup groupoptions;
    JButton next, submit, lifeline;

    public static int timer = 10;
    public static int ans_given = 0;
    public static int count = 0;
    public static int score = 0;

    String name;

    Quiz(String name) {
        this.name = name;
        setBounds(x: 50, y: 0, width: 1440, height: 850);
        getContentPane().setBackground(c: Color.WHITE);
        setLayout(manager:null);

        ImageIcon i1 = new ImageIcon(location:ClassLoader.getSystemResource(name: "icons/quiz.jpg"));
        JLabel image = new JLabel(image: i1);
        image.setBounds(x: 0, y: 0, width: 1440, height: 392);
        add(comp: image);

        qno = new JLabel();
        qno.setBounds(x: 100, y: 450, width: 50, height: 30);
        qno.setFont(new Font(name: "Tahoma", style: Font.PLAIN, size:24));
        add(comp: qno);

        question = new JLabel();
        question.setBounds(x: 150, y: 450, width: 900, height: 30);
        question.setFont(new Font(name: "Tahoma", style: Font.PLAIN, size:24));
        add(comp: question);

        questions[0][0] = "Who is your Object Orient Programming Lab Teacher?";
        questions[0][1] = "Pervez Hossain";
        questions[0][2] = "Feroza Naznin";
        questions[0][3] = "Jerin Tanim Tanvi";
        questions[0][4] = "Solaiman";

        questions[1][0] = "What keyword is used to declare a class in Java?";
        questions[1][1] = "int";
        questions[1][2] = "class";
        questions[1][3] = "long";
        questions[1][4] = "void";

        questions[2][0] = "Which are the basic access modifiers in Java?";
        questions[2][1] = "public";
        questions[2][2] = "int";
        questions[2][3] = "abstract";
        questions[2][4] = "none";
```

```
62          questions[3][0] = "An interface with no fields or methods is known as?";
63          questions[3][1] = "Runnable Interface";
64          questions[3][2] = "Abstract Interface";
65          questions[3][3] = "Marker Interface";
66          questions[3][4] = "CharSequence Interface";
67
68          questions[4][0] = "In which memory a String is stored, when we create a string using new operator?";
69          questions[4][1] = "Stack";
70          questions[4][2] = "String memory";
71          questions[4][3] = "Random storage space";
72          questions[4][4] = "Heap memory";
73
74          questions[5][0] = "Which of the following is a marker interface?";
75          questions[5][1] = "Runnable interface";
76          questions[5][2] = "Remote interface";
77          questions[5][3] = "Readable interface";
78          questions[5][4] = "Result interface";
79
80          questions[6][0] = "Which keyword is used for accessing the features of a package?";
81          questions[6][1] = "import";
82          questions[6][2] = "package";
83          questions[6][3] = "extends";
84          questions[6][4] = "export";
85
86          questions[7][0] = "In java, jar stands for?";
87          questions[7][1] = "Java Archive Runner";
88          questions[7][2] = "Java Archive";
89          questions[7][3] = "Java Application Resource";
90          questions[7][4] = "Java Application Runner";
92          questions[8][0] = "Which of the following is a mutable class in java?";
93          questions[8][1] = "java.lang.StringBuilder";
94          questions[8][2] = "java.lang.Short";
95          questions[8][3] = "java.lang.Byte";
96          questions[8][4] = "java.lang.String";
97
98          questions[9][0] = "Can we declair constructor in a interface?";
99          questions[9][1] = "Yes";
100         questions[9][2] = "No";
101         questions[9][3] = "none";
102         questions[9][4] = "both";
103
104         answers[0][1] = "Feroza Naznin";
105         answers[1][1] = "class";
106         answers[2][1] = "public";
107         answers[3][1] = "Marker Interface";
108         answers[4][1] = "Heap memory";
109         answers[5][1] = "Remote interface";
110         answers[6][1] = "import";
111         answers[7][1] = "Java Archive";
112         answers[8][1] = "java.lang.StringBuilder";
113         answers[9][1] = "No";
114
115         opt1 = new JRadioButton();
116         opt1.setBounds(x: 170, y: 520, width: 700, height: 30);
117         opt1.setBackground(bg: Color.WHITE);
118         opt1.setFont(new Font(name: "Dialog", style: Font.PLAIN, size: 20));
119         add(comp: opt1);
```

```
        opt2 = new JRadioButton();
        opt2.setBounds(x: 170, y: 560, width: 700, height: 30);
        opt2.setBackground(bg: Color.WHITE);
        opt2.setFont(new Font(name: "Dialog", style: Font.PLAIN, size: 20));
        add(comp: opt2);

        opt3 = new JRadioButton();
        opt3.setBounds(x: 170, y: 600, width: 700, height: 30);
        opt3.setBackground(bg: Color.WHITE);
        opt3.setFont(new Font(name: "Dialog", style: Font.PLAIN, size: 20));
        add(comp: opt3);

        opt4 = new JRadioButton();
        opt4.setBounds(x: 170, y: 640, width: 700, height: 30);
        opt4.setBackground(bg: Color.WHITE);
        opt4.setFont(new Font(name: "Dialog", style: Font.PLAIN, size: 20));
        add(comp: opt4);

        groupoptions = new ButtonGroup();
        groupoptions.add(b: opt1);
        groupoptions.add(b: opt2);
        groupoptions.add(b: opt3);
        groupoptions.add(b: opt4);

        next = new JButton(text: "Next");
        next.setBounds(x: 1100, y: 550, width: 200, height: 40);
        next.setFont(new Font(name: "Tahoma", style: Font.PLAIN, size: 22));
        next.setBackground(new Color(r: 220, g: 53, b: 69));
        next.setForeground(fg: Color.WHITE);
        next.addActionListener(l: this);
        add(comp: next);
```

```
            if (groupoptions.getSelection() == null) {
                useranswers[count][0] = "";
            } else {
                useranswers[count][0] = groupoptions.getSelection().getActionCommand();
            }

            if (count == 8) {
                next.setEnabled(b: false);
                submit.setEnabled(b: true);
            }

            count++;
            start(count);
        } else if (ae.getSource() == lifeline) {
            if (count == 2 || count == 4 || count == 6 || count == 8 || count == 9) {
                opt2.setEnabled(b: false);
                opt3.setEnabled(b: false);
            } else {
                opt1.setEnabled(b: false);
                opt4.setEnabled(b: false);
            }
            lifeline.setEnabled(b: false);
        } else if (ae.getSource() == submit) {
            ans_given = 1;
            if (groupoptions.getSelection() == null) {
                useranswers[count][0] = "";
            } else {
                useranswers[count][0] = groupoptions.getSelection().getActionCommand();
            }

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

```
214                 for (int i = 0; i < useranswers.length; i++) {
215                     if (useranswers[i][0].equals(answers[i][1])) {
216                         score += 10;
217                     } else {
218                         score += 0;
219                     }
220                 }
221                 setVisible(b: false);
                    new Score(name, score);
223             }
224         }
225
        public void paint(Graphics g) {
227             super.paint(g);
228
229             String time = "Time left - " + timer + " seconds"; // 15
230             g.setColor(c: Color.RED);
231             g.setFont(new Font(name: "Tahoma", style: Font.BOLD, size: 25));
232
233             if (timer > 0) {
234                 g.drawString(str:time, x: 1100, y: 500);
235             } else {
236                 g.drawString(str:"Times up!!", x: 1100, y: 500);
237             }
238
239             timer--; // 14
240
241             try {
242                 Thread.sleep(millis: 1000);
243                 repaint();
                } catch (Exception e) {
                    e.printStackTrace();
246             }
247
248             if (ans_given == 1) {
249                 ans_given = 0;
250                 timer = 15;
251             } else if (timer < 0) {
252                 timer = 15;
253                 opt1.setEnabled(b: true);
254                 opt2.setEnabled(b: true);
255                 opt3.setEnabled(b: true);
256                 opt4.setEnabled(b: true);
257
258                 if (count == 8) {
259                     next.setEnabled(b: false);
260                     submit.setEnabled(b: true);
261                 }
262                 if (count == 9) { // submit button
263                     if (groupoptions.getSelection() == null) {
264                        useranswers[count][0] = "";
265                     } else {
266                         useranswers[count][0] = groupoptions.getSelection().getActionCommand();
267                     }
268
269                     for (int i = 0; i < useranswers.length; i++) {
270                         if (useranswers[i][0].equals(answers[i][1])) {
271                             score += 10;
272                         } else {
273                             score += 0;
274                         }
```

```
275                 }
276                 setVisible(b: false);
                    new Score(name, score);
278             } else { // next button
279                 if (groupoptions.getSelection() == null) {
280                    useranswers[count][0] = "";
281                 } else {
282                     useranswers[count][0] = groupoptions.getSelection().getActionCommand();
283                 }
284                 count++; // 0 // 1
285                 start(count);
286             }
287         }
288
289     }
290
291     public void start(int count) {
292         qno.setText("" + (count + 1) + ". ");
293         question.setText(questions[count][0]);
294         opt1.setText(questions[count][1]);
295         opt1.setActionCommand(questions[count][1]);
296
297         opt2.setText(questions[count][2]);
298         opt2.setActionCommand(questions[count][2]);
299
300         opt3.setText(questions[count][3]);
301         opt3.setActionCommand(questions[count][3]);
302
303         opt4.setText(questions[count][4]);
304         opt4.setActionCommand(questions[count][4]);
302
303         opt4.setText(questions[count][4]);
304         opt4.setActionCommand(questions[count][4]);
305
306         groupoptions.clearSelection();
307     }
308     public static void main(String[] args) {
            new Quiz(name: "User");
310     }
311 }
```

1.16 Rules Part Code

```
package quiz.application;
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
public class Rules extends JFrame implements ActionListener{
    String name;
    JButton start, back;
    Rules(String name) {
        this.name = name;
        getContentPane().setBackground(c: Color.WHITE);
        setLayout(manager:null);

        JLabel heading = new JLabel("Welcome " + name + " to Online Exam");
        heading.setBounds(x: 50, y: 20, width: 700, height: 30);
        heading.setFont(new Font(name: "Viner Hand ITC", style: Font.BOLD, size: 28));
        heading.setForeground(new Color(r: 0, g: 225, b: 0));
        add(comp: heading);

        JLabel rules = new JLabel();
        rules.setBounds(x: 20, y: 90, width: 700, height: 350);
        rules.setFont(new Font(name: "Tahoma", style: Font.PLAIN, size: 16));
        rules.setText(
            "<html>"+
                "1. First you must be a student of Green University Of Bangladesh." + "<br><br>" +
                "2. Before starting the exam, all the necessary things should be kept aside." + "<br><br>" +
                "3. You may have lot of options in life but here all the questions are compulsory" + "<br><br>" +
                "4. Don't copy paste anohter one." + "<br><br>" +
                "5. Before starting the exam, you should ensure you have lot of megabite." + "<br><br>" +
                "6. Do not get nervous if your friend is answering more questions." + "<br><br>" +
                "7. Brace yourself, this paper is not for the faint hearted" + "<br><br>" +
                "8. May you know more than what Mohammad Rony knows, Good Luck" + "<br><br>" +
                "8. May you know more than what Mohammad Rony knows, Good Luck" + "<br><br>" +
            "<html>"
        );
        add(comp: rules);
        back = new JButton(text: "Back");
        back.setBounds(x: 250, y: 500, width: 100, height: 30);
        back.setBackground(new Color(r: 0, g: 225, b: 0));
        back.setForeground(fg: Color.WHITE);
        back.addActionListener(l: this);
        add(comp: back);

        start = new JButton(text: "Start");
        start.setBounds(x: 400, y: 500, width: 100, height: 30);
        start.setBackground(new Color(r: 0, g: 225, b: 0));
        start.setForeground(fg: Color.WHITE);
        start.addActionListener(l: this);
        add(comp: start);

        setSize(width: 800, height: 650);
        setLocation(x: 350, y: 100);
        setVisible(b: true);
    }
    public void actionPerformed(ActionEvent ae) {
        if (ae.getSource() == start) {
            setVisible(b: false);
            new Quiz(name);
        } else {
            setVisible(b: false);
            new Login();
        }
    }
```

1.17 Score Part Code

```
package quiz.application;
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;
public class Score extends JFrame implements ActionListener {

    Score(String name, int score) {
        setBounds(x: 400, y: 150, width: 750, height: 550);
        getContentPane().setBackground(c: Color.WHITE);
        setLayout(manager:null);

        ImageIcon i1 = new ImageIcon(location: ClassLoader.getSystemResource(name: "icons/score.png"));
        Image i2 = i1.getImage().getScaledInstance(width: 300, height: 250, hints: Image.SCALE_DEFAULT);
        ImageIcon i3 = new ImageIcon(image: i2);
        JLabel image = new JLabel(image: i3);
        image.setBounds(x: 0, y: 200, width: 300, height: 250);
        add(comp: image);

        JLabel heading = new JLabel("Thank you " + name + " for attend the online exam.!");
        heading.setBounds(x: 45, y: 30, width: 700, height: 30);
        heading.setFont(new Font(name: "Tahoma", style: Font.PLAIN, size: 26));
        add(comp: heading);

        JLabel lblscore = new JLabel("Your score is " + score);
        lblscore.setBounds(x: 350, y: 200, width: 300, height: 30);
        lblscore.setFont(new Font(name: "Tahoma", style: Font.PLAIN, size: 26));
        add(comp: lblscore);

        JButton submit = new JButton(text: "Take Again");
        submit.setBounds(x: 380, y: 270, width: 120, height: 30);
        submit.setBackground(new Color(r: 0, g: 225, b: 0));
        submit.setForeground(fg: Color.WHITE);
        submit.addActionListener(l: this);
        add(comp: submit);

        setVisible(b: true);
    }

    public void actionPerformed(ActionEvent ae) {
        setVisible(b: false);
        new Login();
    }

    public static void main(String[] args) {
        new Score(name: "User", score: 0);
    }
}
```

1.18 Conclusion:

The Java Online Exam System is a comprehensive software application developed using Java Swing and a database. It provides an efficient platform for conducting online exams and managing student registrations. The system's user-friendly interface and robust functionality make it a valuable tool for educational institutions.

1.19 Reference:

GitHub account Link:
https://github.com/Rony58
YouTube Channel Link:
https://www.youtube.com/@rony12