

MINI PROJECT

ONLINE QUIZ

(Project Report)

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1. INTRODUCTION

1.1 ABSTRACT:

ONLINE Quiz is a software in which we have specified some questions, a timer runs for given time and within that period one has to answer for all those questions, some buttons are presented at the bottom of the window like start button, previous , next , finish.

When we click the start button the online test get started, you will have to answer 25 questions with in 10 minutes, the timer runs.

If you do not wish to answer a particular question you can move on to next question by pressing next button or if you wish to move to the previous question that you had skipped you can make this move by previous button.

The environment used for this project is JAVA. This project is based on core JAVA. The software used for this java JDK, Windows operating system.

1.2 OBJECTIVES:

This concept of ONLINE QUIZ fulfils the following requirements:

- It provides a less expensive as well as an effective method of performing examinations.
- It provides best facilities for the students to answer the question only with a single click.
- It saves time as well as money.
- It lessens the student's and teacher's frustration.

1.3 AREAS OF APPLICATION:

- **Across the globe:** This project finds its application in conducting examination over the globe.
- **Student's needs:** It saves time as well as money. It lessens student's frustration.

2. SYSTEM ANALYSIS

2.1 FEASIBILITY STUDY:

Feasibility study defines all the requirements to performance characteristics of system.

For system to be feasible, the design needs to undertake various factors or performance requirements by which the system will be operated.

A feasibility study is short, focused study which aims at selecting the best system that meets performance requirements. Information is gathered regarding the general requirements of the proposed system.

If feasibility study is to serve as the decision document, it answers a number of questions.

Like

- ✓ Is it beneficial?
- ✓ Does it save time and money?
- ✓ Can it be integrated with other systems already in place?

Planning resources is a very vast concept and we are beginners, thus including each and every aspects of web, Integrate and automate them in every respect was not feasible for us. Hence we perform feasibility study to make our project compatible for present environment. The concept of Online Testis newer. The project is built with the help of **JAVA** technology which is reliable and efficient platform to work upon. This concept saves time and lessens the teacher's and student's frustration.

2.1.1 Technical feasibility:

Technical feasibility takes of the all the issues concerned with the design and the development part of the project. It concerns itself with the software, hardware and the platform related issues. The following are the technical specifications for our project.

The project would require a lot of space for storage of static as well as dynamic content.

As the number of project available increases the space required for storing them increases.

2.1.2 Economic feasibility:

- It provides an efficient and reliable platform to work upon.
- It saves time and is thus a faster means of examination.
- It is less costly than the other means of examination.

2.2 HARDWARE AND SOFTWARE REQUIREMENT:

Software Requirements:

- Operating System : Any OS
- Front End : JAVA JDK

Hardware Requirements:

- Machine : Any Machine
- Speed : 233 MHz and above
- Hard Disk : 10GB
- RAM : 256 MB

3. SYSTEM DESIGN

3.1 MODULES AND THEIR DESCRIPTION:

3.1.1 Administrator module:

The administration process can be complex and must be properly planned and managed to ensure a successful project.

Administrators are a professional team trained to follow a project plan that has been designed specifically for you. Administrator develops software and enhances its process. Administrator in online test project based on Core Java enters questions and answers in an array. He created software for online test in which he created a window which is partitioned into four parts: North, South, East, and West. North Window: He has provided a Welcome note for the user with user name and timer runs after clicking start button. South Window: He has created buttons to start the test, to move to the next question, to finish the test and two buttons to navigate back to previous or next question after finishing the test to check the answers. East window: Questions are displayed in this window. West window: Options are given in this window with check boxes, check boxes are checked for the correct answer.

3.1.1.1 Entering Questions and Answers:

While creating software for online test, He has entered questions only in an array and placed them to the East window. And options to choose correct answer are in West window.

- 1. Enter questions for test**
- 2. Enter answer options for Users**
- 3. Check questions and Display**

3.1.2 User module:

User only has to enter the name and proceed to answer the questions. User click the start button and timer starts, user have only ten minutes to answer all the questions. After answering all the questions, user click finish after the test and answer will be displayed for all the questions. Users click check previous or check next for checking correct answer.

- 1. Enter name**
- 2. Answer the questions**

Finish the test and Check correct for correct answer

3.3 PROGRAM:

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

class QuestionSeries{
static String info ="Java Online Quiz\n\nINSTRUCTIONS:\n\t*There are 25 questions in this test and
25 minutes to complete them all.\n\t*The finish button is highlighted in green when you reach the
end of the test. \n\t*Clicking the finish button will display the results with the correct answers
marked in Green. \n\n\t*The timecounter begins when you click on the 'Start' button \n\nBest of
luck!\n";

static String []question={"Question 1:\nWhich is a reserved word in the Java programming
language?",
"Question 2:\nWhich is the valid declarations within an interface definition?",
"Question 3:\nWhich one is a valid declaration of a boolean?",
"Question 4:\nWhich three are valid declarations of a float?\n1. float f1 = -343;\n2. float f2 =
3.14;\n3. float f3 = 0x12345;\n4. float f4 = 42e7;\n5. float f5 = 2001.0D;\n6. float f6 = 2.81F;",
"Question 5:\nWhich of the following are legal lines of code?\n1. int w = (int)888.8;\n2. byte x =
(byte)1000L;\n3. long y = (byte)100;\n4. byte z = (byte)100L;",
"Question 6:\nWhich two statements are equivalent?\n1. 16*4\n2. 16>>2\n3. 16/2^2\n4. 16>>>2",
"Question 7:\nWhich two statements are equivalent?\n1. 3/2\n2. 3<2\n3. 3*4\n4. 3<<2",
"Question 8:\nWhich two are equal?\n1. 32/4\n2. (8>>2)<<4\n3. 2^5\n4. 128>>>2\n5. 2>>5",
"Question 9:\nYou want subclasses in any package to have access to members of a superclass.
Which is the most restrictive access that accomplishes this objective?",
"Question 10:\nWhat is the most restrictive access modifier that will allow members of one class to
have access to members of another class in the same package?",
"Question 11:\nYou want a class to have access to members of another class in the same package.
Which is the most restrictive access that accomplishes this objective?",
"Question 12:\nWhich of the following class level (nonlocal) variable declarations will not compile?",
"Question 13:\nWhich is a valid declaration within an interface?",
"Question 14:\nWhich statement is true?",
"Question 15:\nWhich four can be thrown using the throw statement?\n1. Error\n2. Event\n3.
Object\n4. Throwable\n5. Exception\n6. RuntimeException",
"Question 16:\nWhich statement is true?",
"Question 17:\nWhich two are valid constructors for Thread?\n1. Thread(Runnable r, String
name)\n2. Thread()\n3.Thread(int priority)\n4. Thread(Runnable r, ThreadGroup
g)\n5.Thread(Runnable r, int priority)",
"Question 18:\nWhich three are methods of the Object class\n1. notify();\n2. notifyAll();\n3.
isInterrupted();\n4. synchronized();\n5. interrupt();\n6. wait(long msec);\n7. sleep(long msec);\n8.
yield();",
"Question 19:\nWhich cannot directly cause a thread to stop executing?",
"Question 20:\nWhich of the following will directly stop the execution of a Thread?",
"Question 21:\nWhich method must be defined by a class implementing the java.lang.Runnable
interface?",
"Question 22:\nWhich method registers a thread in a thread scheduler?",
"Question 23:\nWhich class or interface defines the wait(), notify(),and notifyAll() methods?",
"Question 24:\nWhich is true about an anonymous inner class?",
"Question 25:\nWhich is true about a method-local inner class?"};
```



```

        TOTAL = QuestionSeries.tally;
        /* The input window */
        studentname = JOptionPane.showInputDialog("Enter your name: ");
        if(studentname.length() < 1) studentname = "Anonymous ";
        else studentname = studentname.trim() + " ";
    }catch(NullPointerException e){ System.exit(0); }
}

int seconds, minutes;
int quesnum, itemCheck, mark;
final String TESTTITLE = QuestionSeries.testtitle;
final int TIMELIMIT = QuestionSeries.timeLimit;
final int PASS = QuestionSeries.passMark;
String []answers = new String[TOTAL];
JButton []choice_button = new JButton[6];
JTextArea answerboxes[] = new JTextArea[4];
JCheckBox []boxes = new JCheckBox[4];
JTextPane pane = new JTextPane();
JLabel student, choose, message, timecounter, testresult;
boolean start_test, check_answer, allowRestart, finishtest;
Northwindow panelNorth = new Northwindow();
Southwindow panelSouth = new Southwindow();
Centerwindow panelCenter = new Centerwindow();

/* OnlineQuiz Constructor */
protected OnlineQuiz(){
    for (int i=0; i<TOTAL; i++) answers[i] = "";
    getContentPane().setLayout(new BorderLayout() );
    getContentPane().add("North", panelNorth);
    getContentPane().add("South", panelSouth);
    getContentPane().add("Center", panelCenter);
    int width = 0, height=0;

    if(java.awt.Toolkit.getDefaultToolkit().getScreenSize().getWidth()<799){width=640;h
eight=460; }
    else {width=720; height=540; }
    setSize(width,height);
    Dimension dim = java.awt.Toolkit.getDefaultToolkit().getScreenSize();
    setLocation((dim.width-width)/2, (dim.height-height)/2);
}

/**
** Northwindow class
**/

class Northwindow extends JPanel{

/**
** Northwindow constructor
**/
    public Northwindow(){

```

```

        setLayout(new GridLayout(2,2));
        setBackground(new Color(230, 230, 255));
        student = new JLabel("\t Welcome "+studentname+" to the Online Java Quiz");
        student.setFont(new Font("",Font.BOLD,16) );
        message = new JLabel();
        message.setForeground(Color.blue);
        add(student);
        add(message);
        add(new JLabel("      " ) );
        add(new JLabel("      " ) );
        setBorder(BorderFactory.createEtchedBorder() );
    }
}

/**
** Southwindow class
**/
class Southwindow extends JPanel{
    public Southwindow(){
        String []key = {"","Start","Next","Finish","Check Next","Check Previous"};
        for(int i=0; i<choice_button.length; i++)
        {
            choice_button[i] = new JButton(key[i]);
            choice_button[i].addActionListener(new ActionListener() );
            if(i !=0)add(choice_button[i]);
        }
        setBorder(BorderFactory.createEtchedBorder() );
    }
}

/**
** Centerwindow class
**/
class Centerwindow extends JPanel{

    public Centerwindow(){
        setLayout(new GridLayout(1,2) );
        JScrollPane west = new JScrollPane(pane);
        pane.setForeground(Color.black);
        pane.setFont(new Font ("monospaced",0,20) );
        pane.setText(QuestionSeries.info);
        pane.setEditable(false);
        JPanel east = new JPanel();
        east.setLayout(new BorderLayout() );
        JPanel northEast = new JPanel();
        northEast.setBackground(new Color(230, 230, 255) );
        east.add("North", northEast);
        JPanel westEast = new JPanel();
        westEast.setLayout(new GridLayout(6,1) );
        east.add("West", westEast);
        JPanel centerEast = new JPanel();

```

```

        centerEast.setLayout(new GridLayout(6,1) );
        centerEast.setBackground(new Color(255,255,200));
        east.add("Center", centerEast);
        timecounter = new JLabel("  There are "+TOTAL+" questions in total");
        timecounter.setFont(new Font ("Arial",Font.BOLD,16) );
        timecounter.setForeground(new Color(0,90,20) );
        northEast.add(timecounter);
        westEast.add(new JLabel(" "));
        String []boxs = {" A ", " B ", " C ", " D "};
        for(int i=0; i<boxes.length; i++) {
            boxes[i] = new JCheckBox(boxs[i]);
            boxes[i].addItemListener(new ItemHandler() );
            westEast.add(boxes[i]);
        }
        westEast.add(new JLabel() );
        choose = new JLabel("  CHOOSE CORRECT ANSWERS");
        choose.setBorder(BorderFactory.createEtchedBorder() );
        centerEast.add(choose);
        JScrollPane panes[] = new JScrollPane[4];
        for(int i=0; i<answerboxes.length; i++){
            answerboxes[i] = new JTextArea();
            answerboxes[i].setBorder(BorderFactory.createEtchedBorder() );
            answerboxes[i].setEditable(false);
            answerboxes[i].setBackground(Color.white);
            answerboxes[i].setFont(new Font("",0,20) );
            answerboxes[i].setLineWrap(true);
            answerboxes[i].setWrapStyleWord(true);
            panes[i] = new JScrollPane(answerboxes[i]);
            centerEast.add(panes[i]);
        }
        if(TIMELIMIT >0)testresult = new JLabel(studentname+" , You have only
        "+TIMELIMIT+" minutes to complete.");
        else testresult = new JLabel("  There is no time limit for this test");
        testresult.setBorder(BorderFactory.createEtchedBorder() );
        centerEast.add(testresult);
        add(west);
        add(east);
    }
}

```

```

/**
** ActionHandler class to handle all the action events from the buttons.
**/

```

```

class ActionHandler implements ActionListener{

/* actionPerformed method */
    public void actionPerformed(ActionEvent evt){
        String source = evt.getActionCommand();
        if(source.equals("Start")){
            choice_button[1].setVisible(false);

```

```

        start_test=true;
        allowRestart=true;
    if(TIMELIMIT >0)new Timer(); // inner Timer class
        panelSouth.remove(choice_button[1]); //start
    displayquestion();
}
if(start_test){
    if(source.equals("Previous")) {
        recordanswer();
        quesnum--;
        if(quesnum == -1) quesnum=TOTAL-1;
        checkteststatus();
    displayquestion();
    }
    if(source.equals("Next")) {
        recordanswer();
        quesnum++;
        if(quesnum == TOTAL-1) finishtest=true;
        if(quesnum == TOTAL) quesnum=0;
        checkteststatus();
        displayquestion();
    }
    if(source.equals("Finish")) {
        if (finishtest){
            recordanswer();
            quesnum = 0;
            timecounter.setForeground(Color.blue);
            timecounter.setFont(new Font ("Arial",0,14) );
            start_test=false;
            check_answer=true;
            panelSouth.add(choice_button[0]);
            mark_ques();
            displayquestion();
            checkteststatus();
            calculateResult();
        }
        else JOptionPane.showMessageDialog(null,"Cycle through all questions
        before pressing finish",
        "User Message",JOptionPane.INFORMATION_MESSAGE);
    }
}

if (check_answer){
    if(source.equals("Check Next")) {
        quesnum++;
        if(quesnum == TOTAL) quesnum=0;
        mark_ques();
        displayquestion();
        checkteststatus();
    }
    if(source.equals("Check Previous")) {

```

```

        quesnum--;
        if(quesnum == -1) quesnum=TOTAL-1;
        mark_ques();
        displayquestion();
        checkteststatus();
    }
}
validate();
}

/* Timer class */

class Timer extends Thread implements Runnable{
    public Timer(){
        new Thread(this).start();
    }
    public void run() {
        while(start_test){
            try {
                Thread.sleep(1000);
                seconds++;
                if(seconds % 60 == 0 && seconds != 0){
                    seconds -= 60;
                    minutes++;
                }
                timecounter.setText(" Time Counter: "+minutes+" mins :
                "+seconds+" secs ");
                if(minutes==TIMELIMIT){
                    start_test=false;
                    endTest();
                }
            }
            catch(InterruptedException ex) { System.out.print(ex); }
        }
    }
}

/* checkteststatus method */

    public void checkteststatus(){
        if((quesnum ==TOTAL1)&&(start_test))choice_button[3].setBackground(Color.green);
        if(answers[quesnum].length() >0){
            for(int i=0; i<answers[quesnum].length(); i++){
                boxes[Integer.parseInt(answers[quesnum].substring(i,i+1))-
                1].setSelected(true);
            }
        }
        else for(int i=0; i<boxes.length; i++)boxes[i].setSelected(false);
    }
}

```

```
/* displayquestion method */
```

```
public void displayquestion(){
    int j = quesnum+1;
    pane.setText(QuestionSeries.question[quesnum]);
    if(start_test)message.setText("Question "+j+" out of "+TOTAL);
    for (int i=0; i<4; i++)answerboxes[i].setText(QuestionSeries.answers[quesnum][i]);
    if(start_test){
        String temp="";
        if(QuestionSeries.n[quesnum]==1)
            temp="<html>&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&Choose only<b>ONE</b>
            Option</html>";
        else if(QuestionSeries.n[quesnum]==2) temp="<html>&nbsp;&nbsp;&nbsp;&nbsp;&Choose
        <b>TWO </b> Options</html>";
        else if(QuestionSeries.n[quesnum]==3) temp="<html>&nbsp;&nbsp;&nbsp;&nbsp;&Choose
        <b>THREE</b> Options</html>";
        else temp="<html>&nbsp;&nbsp;&nbsp;&nbsp;&<b>ALL are true</b> true</html>";
        choose.setText(temp);
    }
    else {
        timecounter.setText("  Your choices are shown in the boxes");
        choose.setText("  Correct answers are marked in Green Colour.");
    }
}
```

```
/* record answer method */
```

```
public void recordanswer(){
    String tmp = "";
    for(int i=0; i<boxes.length; i++) if(boxes[i].isSelected() ) tmp +=i+1;
    answers[quesnum] = tmp;
}
```

```
/* endTest method */
```

```
public void endTest(){
    message.setText("TIME OVER: Please Press 'Finish'");
    choice_button[2].setEnabled(false);
    choice_button[3].setEnabled(false);
    choice_button[4].setEnabled(true);
}
```

```
/* mark ques() method to highlight correct answers */
```

```
public void mark ques(){
    for(int i=0; i<answerboxes.length; i++) answerboxes[i].setBackground(Color.white);
    for(int i=0; i<QuestionSeries.choice[quesnum].length(); i++)
        answerboxes[Integer.parseInt(QuestionSeries.choice[quesnum].substring(i,i+1))-1].setBackground(Color.green);
}
```



```

        if(QuestionSeries.choice[quesnum].equals(answers[quesnum]))
            message.setText("Answer Correct, Well Done!");
        else message.setText("Sorry, You Got This One Wrong.");
    }

    public void calculateResult(){
        mark=0;
        double temp=0.0;
        java.text.DecimalFormat df = new java.text.DecimalFormat("#0.#");
        for(int i=0; i<TOTAL; i++)if(QuestionSeries.choice[i].equals(answers[i]))mark++;
        temp=(double)mark;
        if(temp/TOTAL*100 >=PASS) testresult.setText(" Well done
        "+studentname.substring(0,studentname.indexOf(' '))+", you passed");
        else testresult.setText(" Better luck next time
        "+studentname.substring(0,studentname.indexOf(' ')) );
        student.setText(" Final score for "+studentname+": "+mark+" out of "+TOTAL+":
        "+df.format(temp/TOTAL*100)+"%");
        new Resultwindow().show();
    }
}

/* Resultwindow class */

class Resultwindow extends JFrame{
    Resultwindow() {
        super( studentname+" results: " +(mark*100/TOTAL>=PASS?"PASS":"FAIL"));
        Container cont = getContentPane();
        cont.setLayout(new GridLayout(TOTAL/2+3,5,2,5) );
        cont.setBackground(new Color(255,220,255) );
        cont.add(new JLabel(" "+"Marks:  "+mark+"/"+TOTAL+": "+"Percentage:
        "+(mark*100/TOTAL)+"%"));
        for(int i=0; i<3; i++)cont.add(new JLabel() );
        String temp[] = new String[TOTAL];
        for(int i=0; i<TOTAL; i++){
            if(QuestionSeries.choice[i].equals(answers[i])) temp[i]="correct";
            else temp[i]="wrong";
        }
        for(int i=0; i<TOTAL; i++) cont.add(new JLabel(" Question "+(i+1)+"":
        "+temp[i]) );
        pack();
        setLocation(200,200);
    }
}

/* ItemHandler class */

class ItemHandler implements ItemListener{
    public void itemStateChanged(ItemEvent evt){
        if(start_test){
            for(int i=0; i<boxes.length; i++) if(boxes[i].isSelected() ) itemCheck++;
        }
    }
}

```

```

        if(itemCheck > QuestionSeries.n[quesnum]){
            java.awt.Toolkit.getDefaultToolkit().beep();
        }
        if(QuestionSeries.n[quesnum]==1)
            JOptionPane.showMessageDialog(null,"<html><font size='4'
            color='00308a'><center>"+ "There is only
            "+QuestionSeries.n[quesnum]+" possible<br> answer to question
            "+(quesnum+1)+"<html>","User Information
            Message",JOptionPane.INFORMATION_MESSAGE);
        else
            JOptionPane.showMessageDialog(null,"<html><font size='4'
            color='00308a'><center>"+ "There are
            only"+QuestionSeries.n[quesnum]+" possible<br> answers to
            question "+(quesnum+1)+"<html>","User Information
            Message",JOptionPane.INFORMATION_MESSAGE);
        }
        itemCheck=0;
    }
}

/* main method */

public static void main(String [] args){
    OnlineQuiz frame = new OnlineQuiz();
    frame.setTitle(" "+QuestionSeries.testtitle);
    frame.setDefaultCloseOperation( EXIT_ON_CLOSE );
    frame.setVisible(true);
}
}

```

INPUT & OUTPUT SCREENS:



Java Programming Online Quiz

— □ ×

Welcome Naresh to the Online Java Quiz

Java Online Quiz System

INSTRUCTIONS:
*There are 25 questions in this test and 25 minutes to complete them all.
*The finish button is highlighted in green when you reach the end of the test.
*Clicking the finish button will display the results with the correct answers marked in Green.

*The timecounter begins when you click on the 'Start' button

Best of luck!

There are 25 questions in total

CHOOSE CORRECT ANSWERS

☐ A

☐ B

☐ C

☐ D

Naresh , You have only 25 minutes to complete.

Start

Next

Finish

Check Next

Check Previous

Java Programming Online Quiz

— □ ×

Welcome Naresh to the Online Java Quiz

Question 1 out of 25

Time Counter: 0 mins : 22 secs

Question 1:
Which is a reserved word in the Java programming language?

Choose only ONE Option

method

☐ A

native

☒ B

subclasses

☐ C

reference

☐ D

Naresh , You have only 25 minutes to complete.

Next

Finish

Check Next

Check Previous

Java Programming Online Quiz

Welcome Naresh to the Online Java Quiz

Question 3 out of 25

Time Counter: 0 mins : 43 secs

Question 3:
Which one is a valid declaration of a boolean?

Choose only ONE Option

☐ A

boolean b1 = 0;

☐ B

boolean b2 = 'false';

☐ C

boolean b3 = false;

☐ D

boolean b4 = Boolean.false();

Naresh , You have only 25 minutes to complete.

Next

Finish

Check Next

Check Previous

User Message

Cycle through all questions before pressing finish

OK

Java Programming Online Quiz

Welcome Naresh to the Online Java Quiz

Question 25 out of 25

Time Counter: 2 mins : 43 secs

Question 25:
Which is true about a method-local inner class?

Choose only ONE Option

☐ A

It must be marked final.

☒ B

It can be marked abstract.

☐ C

It can be marked public.

☐ D

It can be marked static.

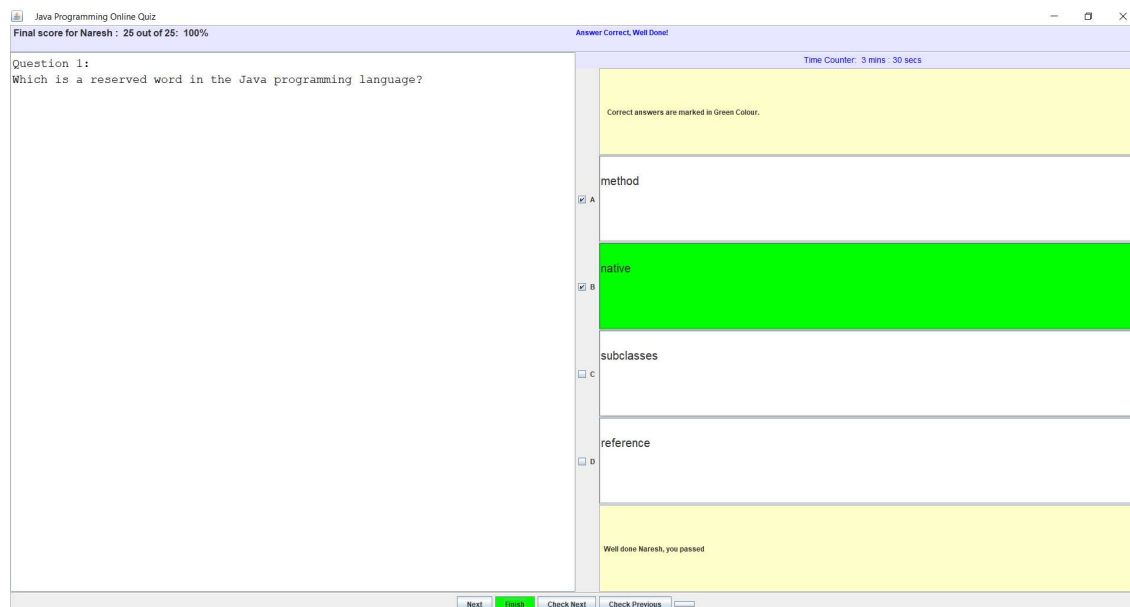
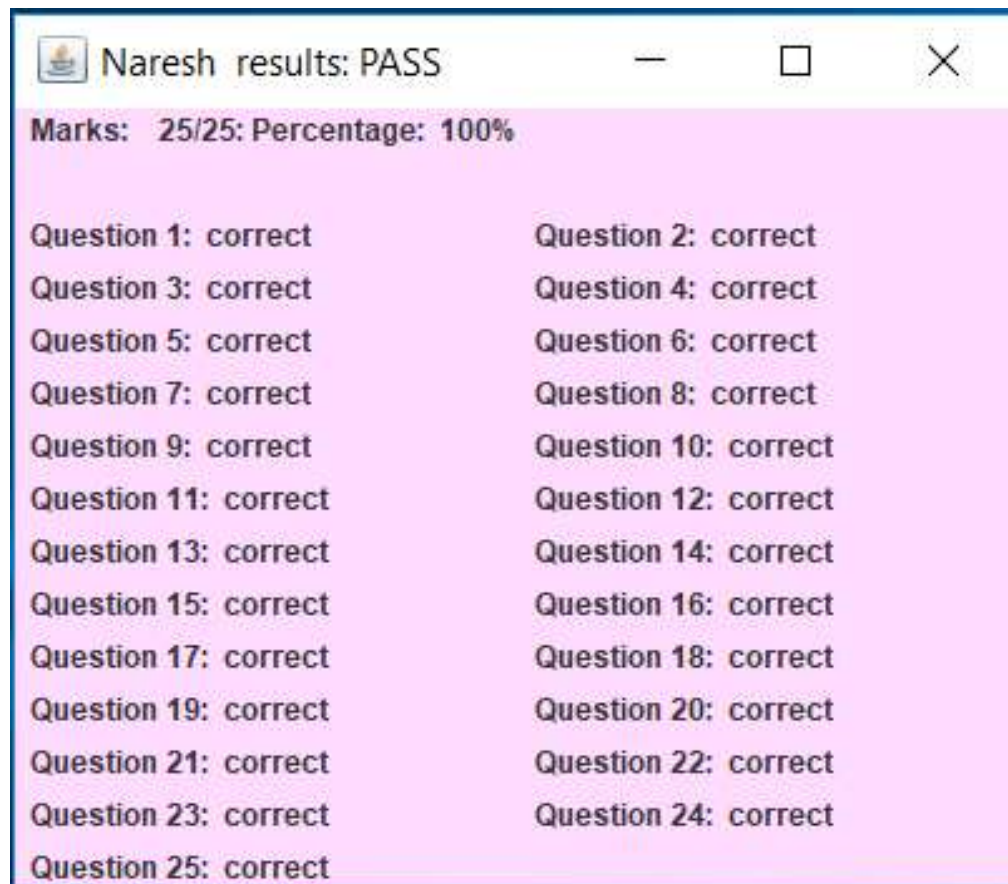
Naresh , You have only 25 minutes to complete.

Next

Finish

Check Next

Check Previous



CONCLUSION

- ▶ Conducting online test is a step to ease the current structure of examination. This way of conducting test on one of the most secure operating system and with highly sophisticated technology is cost effective and save time too.
- ▶ This way of conducting test not only save time but also lessens student's and teacher's frustration. It is an easier way of giving examination, any person across the globe can appear for the examination.

The project entitled “ONLINE QUIZ” has been successfully complied and made to run using the following main components of core Java:

❖ EVENT HANDLING

❖ EXCEPTION HANDLING

❖ LAYOUTS