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CHAPTER 1

INTRODUCTION

1.1 PROBLEM STATEMENT

Virtual Classroom Project is a mini project based on Java language . In this project we are going to provide a Platform for Student and Faculty to interact and view Resource.

The main issue is that the most of the universities being out of town and many students has to face problem to go to the universities and attend classes. Virtual-Learning plays a key role in fulling the job where the students can attend from anywhere online. Nowadays many of the courses are online which can be paid at certain price and learn the course. This java project consist of same methodology where the user login and access the resource given my their faculty and also interact with there faculty.

1.2 OBJECTIVES

The main objective of the Virtual-Learning is to help the students get over the traditional methods of learning and make them accustomed to the internet where the notes for their respective subjects are easily available. It provides an automation procedure of studying the notes online. The implementation of this project helps both the students and teachers. This project not only helps to facilitate easier access to notes but also helps cutting down on the expenditure for the universities as well.

1.3 METHODOLOGY TO BE FOLLOWED

This project uses File handling to store all data and information. We have also used many java applications. This project is done in Eclipse IDE where the code can run smoothly. The user can login or create a new account and sign-in and see a variety of courses and pick one of it and get the receipt.

EXPECTED OUTCOMES

Here, the user can

- 1)Sign in or Sign up
- 2)Access all the Resource
- 3)Can Interact with their Professors
- 4)Take quiz

1.4 REQUIREMENT SPECIFICATION

HARDWARE REQUIREMENTS

- Laptop/Desktop
- 4 GB or more RAM
- Hard disk 10gb or more
- Processor : Intel core i3 or more OR AMD Ryzen

SOFTWARE REQUIREMENTS

- OPERATING SYSTEM: WINDOWS OR LINUX OR MAC
- PROGRAMMING LANGUAGE : JAVA
- IDE: Eclipse OR NetBeans or Visual Studio Code
- Java Awt or Swing

CHAPTER 2

FUNDAMENTALS OF JAVA PROGRAMMING

INTRODUCTION

Java is a object oriented programming language. Which was developed by Sun Microsystems and was released in 1995 . It is high level programming language . Which was developed by James Gosling .It can be written once and run anywhere using JVM .

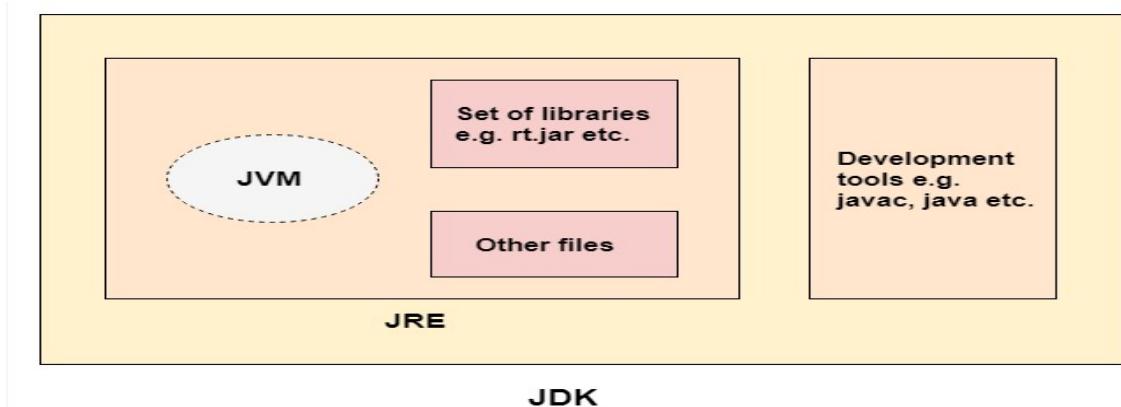


Fig no 1 JDK

FEATURES / JAVA BUZZWORDS

1. Simple
2. Object-oriented
3. Distributed
4. Interpreted
5. Robust
6. Secure
7. Architecture neutral
8. Portable
9. High performance
10. Multithreaded
11. Dynamic

Now let us look at them one by one

1. Simple

Java was designed to be easy for a professional programmer to learn and use effectively.

It's simple and easy to learn if you already know the basic concepts of Object Oriented Programming.

Best of all, if you are an experienced C++ programmer, moving to Java will require very little effort. Because Java inherits the C/C++ syntax and many of the object-oriented features of C++, most programmers have little trouble learning Java.

Java has removed many complicated and rarely-used features, for example, explicit pointers, operator overloading, etc.

2. Object Oriented

Java is true object-oriented language.

Almost “Everything is an Object” paradigm. All program code and data reside within objects and classes.

The object model in Java is simple and easy to extend.

Java comes with an extensive set of classes, arranged in packages that can be used in our programs through inheritance.

Object-oriented programming (OOPs) is a methodology that simplifies software development and maintenance by providing some rules.

Basic concepts of OOPs are:

Object

Class

Inheritance

Polymorphism

Abstraction

Encapsulation

3. Distributed

Java is designed for distributed environment of the Internet. It's used for creating applications on networks.

Java applications can access remote objects on the Internet as easily as they can do in the local system.

Java enables multiple programmers at multiple remote locations to collaborate and work together on a single project.

Java is designed for the distributed environment of the Internet because it handles TCP/IP protocols.

4. Compiled and Interpreted

Usually, a computer language is either compiled or Interpreted. Java combines both this approach and makes it a two-stage system.

Compiled: Java enables the creation of cross-platform programs by compiling into an intermediate representation called Java Bytecode.

Interpreted: Bytecode is then interpreted, which generates machine code that can be directly executed by the machine that provides a Java Virtual machine.

5. Robust

It provides many features that make the program execute reliably in a variety of environments.

Java is a strictly typed language. It checks code both at compile time and runtime.

Java takes care of all memory management problems with garbage collection.

Java, with the help of an exception handling, captures all types of serious errors and eliminates any risk of crashing the system.

6. Secure

Java provides a “firewall” between a networked application and your computer.

When a Java Compatible Web browser is used, downloading can be done safely without fear of viral infection or malicious intent.

Java achieves this protection by confining a Java program to the Java execution environment and not allowing it to access other parts of the computer.

7. Architecture Neutral

Java language and Java Virtual Machine helped in achieving the goal of “write once; run anywhere, any time, forever.”

Changes and upgrades in operating systems, processors and system resources will not force any changes in Java Programs.

8. Portable

Java Provides a way to download programs dynamically to all the various types of platforms connected to the Internet.

It helps in generating Portable executable code.

9. High Performance

Java performance is high because of the use of bytecode.

The bytecode was used so that it was easily translated into native machine code.

10. Multithreaded

Multithreaded Programs handled multiple tasks simultaneously, which was helpful in creating interactive, networked programs.

Java run-time system comes with tools that support multiprocess synchronization used to construct smoothly interactive systems.

11. Dynamic

Java is capable of linking in new class libraries, methods, and objects.

Java programs carry with them substantial amounts of run-time type information that is used to verify and resolve accesses to objects at runtime. This makes it possible to dynamically link code in a safe and expedient manner.

CLASS

A class is a user defined blueprint or prototype from which objects are created. It represents the set of properties or methods that are common to all objects of one type. In general, class declarations can include these components, in order:

1. Modifiers: A class can be public or has default access.

2. class keyword: class keyword is used to create a class.

3. Class name: The name should begin with an initial letter (capitalized by convention).
4. Superclass(if any): The name of the class's parent (superclass), if any, preceded by the keyword extends. A class can only extend (subclass) one parent.
5. Interfaces(if any): A comma-separated list of interfaces implemented by the class, if any, preceded by the keyword implements. A class can implement more than one interface.
6. Body: The class body surrounded by braces, { }.

Constructors are used for initializing new objects. Fields are variables that provides the state of the class and its objects, and methods are used to implement the behavior of the class and its objects.

OBJECT

It is a basic unit of Object-Oriented Programming and represents the real life entities. A typical Java program creates many objects, which as you know, interact by invoking methods. An object consists of :

1. State: It is represented by attributes of an object. It also reflects the properties of an object.
2. Behavior: It is represented by methods of an object. It also reflects the response of an object with other objects.
3. Identity: It gives a unique name to an object and enables one object to interact with other objects.

DIFFERENCE BETWEEN CLASS AND OBJECTS IN JAVA

CLASS VERSUS OBJECT	
CLASS	OBJECT
A template for creating or instantiating objects within a program	An instance of a class
Logical entity	Physical entity
Declared with the “class” keyword	Created using the “new” keyword
A class does not get any memory when it is created	Objects get memory when they are created
A class is declared once	Multiple objects are created using a class

Table no 1 Class vs Object

INHERITANCE

Inheritance is an important pillar of OOP(Object-Oriented Programming). It is the mechanism in java by which one class is allowed to inherit the features(fields and methods) of another class.

Important terminology:

- Super Class: The class whose features are inherited is known as superclass(or a base class or a parent class).
- Sub Class: The class that inherits the other class is known as a subclass(or a derived class, extended class, or child class). The subclass can add its own fields and methods in addition to the superclass fields and methods.
- Reusability: Inheritance supports the concept of “reusability”, i.e. when we want to create a new class and there is already a class that includes some of the code that we want, we can derive our new class from the existing class. By doing this, we are reusing the fields and methods of the existing class.

TYPES OF INHERITANCE IN JAVA

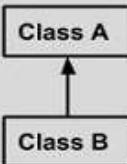
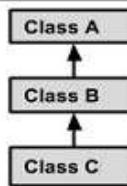
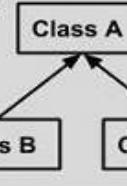
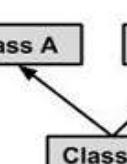
Single Inheritance	 <pre>public class A { } public class B extends A { }</pre>
Multi Level Inheritance	 <pre>public class A { } public class B extends A {..... } public class C extends B {..... }</pre>
Hierarchical Inheritance	 <pre>public class A { } public class B extends A {..... } public class C extends A {..... }</pre>
Multiple Inheritance	 <pre>public class A { } public class B {..... } public class C extends A,B { } // Java does not support multiple inheritance</pre>

Fig no 2 types of inheritance

POLYMORPHISM

The word polymorphism means having many forms. In simple words, we can define polymorphism as the ability of a message to be displayed in more than one form. Real life example of polymorphism: A person at the same time can have different characteristic. Like a man at the same time is a father, a husband, an employee. So the same person posses different behavior in different situations. This is called polymorphism. Polymorphism is considered one of the important features of Object-Oriented Programming. Polymorphism allows us to perform a single action in different ways. In other words, polymorphism allows you to define one interface and have multiple implementations. The word “poly” means many and “morphs” means forms, So it means many forms.

In Java polymorphism is mainly divided into two types:

- Compile time Polymorphism
- Runtime Polymorphism

1. Compile-time polymorphism: It is also known as static polymorphism. This type of polymorphism is achieved by function overloading or operator overloading. But Java doesn't support the Operator Overloading.

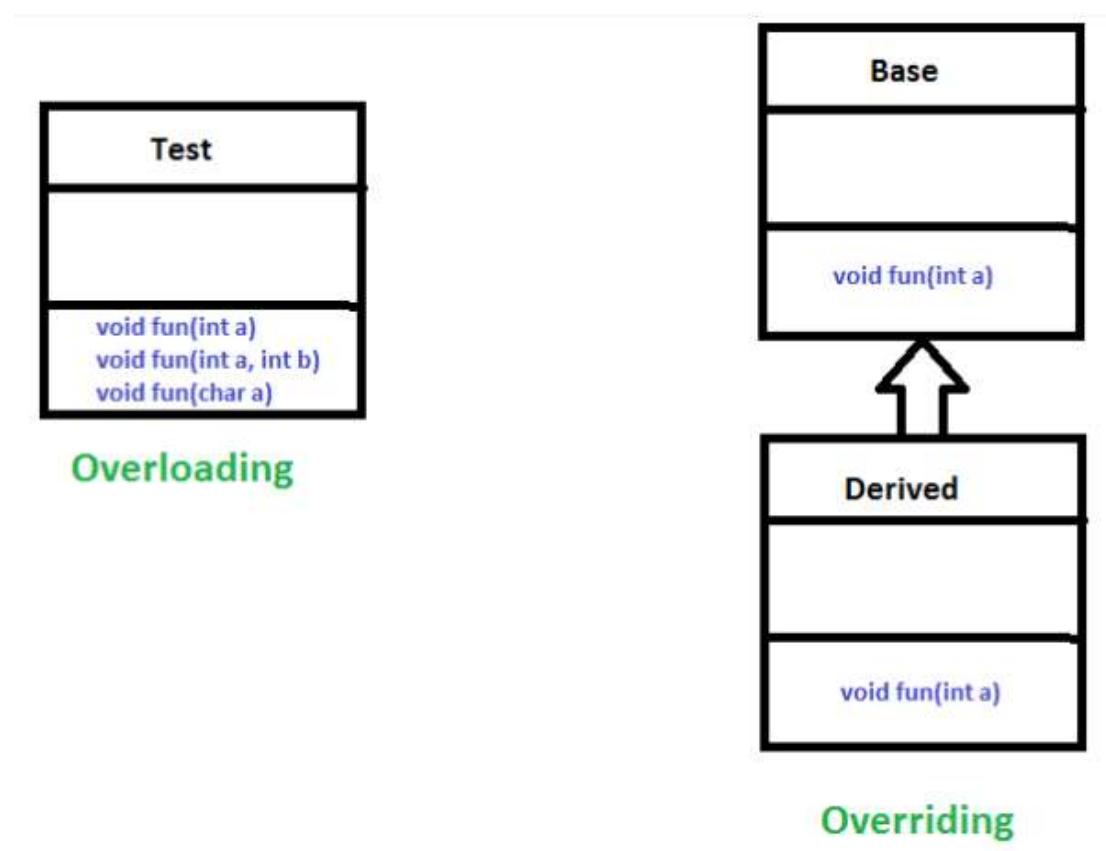


Fig no 3 Overriding and Overloading

Figure overloading and overriding

Method Overloading: When there are multiple functions with same name but different parameters then these functions are said to be overloaded. Functions can be overloaded by change in number of arguments or/and change in type of arguments.

ABSTRACT CLASS

Data Abstraction is the property by virtue of which only the essential details are displayed to the user. The trivial or the non-essentials units are not displayed to the user. Ex: A car is viewed as a car rather than its individual components

Data Abstraction may also be defined as the process of identifying only the required characteristics of an object ignoring the irrelevant details. The properties and behaviours' of an object differentiate it from other objects of similar type and also help in classifying/grouping the objects.

Consider a real-life example of a man driving a car. The man only knows that pressing the accelerators will increase the speed of car or applying brakes will stop the car, but he does not know about how on pressing the accelerator the speed is actually increasing, he does not know about the inner mechanism of the car or the implementation of the accelerator, brakes, etc. in the car. This is what abstraction is.

JAVA PACKAGES

Package in java is a mechanism to encapsulate a group of classes, sub packages and interfaces. Packages are used for:

- Preventing naming conflicts. For example there can be two classes with name Employee in two packages, college.staff.cse.Employee and college.staff.ee.Employee
- Making searching/locating and usage of classes, interfaces, enumerations and annotations easier
- Providing controlled access: protected and default have package level access control. A protected member is accessible by classes in the same package and its subclasses. A default member (without any access specifier) is accessible by classes in the same package only. •Packages can be considered as data encapsulation (or data-hiding).

All we need to do is put related classes into packages. After that, we can simply write an import class from existing packages and use it in our program. A package is a container of a group of related classes where some of the classes are accessible are exposed and others are kept for internal purpose. We can reuse existing classes from the packages as many time as we need it in our program.

ACCESS MODIFIERS IN JAVA

There are two types of modifiers in Java: **access modifiers** and **non-access modifiers**.

The access modifiers in Java specifies the accessibility or scope of a field, method, constructor, or class. We can change the access level of fields, constructors, methods, and class by applying the access modifier on it.

There are four types of Java access modifiers:

1. **Private:** The access level of a private modifier is only within the class. It cannot be accessed from outside the class.
2. **Default:** The access level of a default modifier is only within the package. It cannot be accessed from outside the package. If you do not specify any access level, it will be the default.
3. **Protected:** The access level of a protected modifier is within the package and outside the package through child class. If you do not make the child class, it cannot be accessed from outside the package.
4. **Public:** The access level of a public modifier is everywhere. It can be accessed from within the class, outside the class, within the package and outside the package.

	default	private	protected	public
Same Class	Yes	Yes	Yes	Yes
Same package subclass	Yes	No	Yes	Yes
Same package non- subclass	Yes	No	Yes	Yes
Different package subclass	No	No	Yes	Yes
Different package non- subclass	No	No	No	Yes

Table no 2 Access Modifiers

EXCEPTION HANDLING

The Exception Handling in Java is one of the powerful mechanism to handle the runtime errors that normal flow of the application can be maintained.

THREADS

A thread is actually a lightweight process. Unlike many other computer languages, Java provides built-in support for multithreaded programming. A multithreaded program contains two or more parts that can run concurrently. Each part of such a program is called thread and each thread defines a separate path of execution. Thus, multithreading is a specialized form of multitasking.

I/O BASICS

Java I/O (Input and Output) is used to process the input and produce the output. Java uses the concept of a stream to make I/O operation fast. The `java.io` package contains all the classes required for input and output operations. We can perform file handling in Java by Java I/O API

JavaFX

JavaFX instructional exercise gives essential and progressed ideas of JavaFX. Our JavaFX instructional exercise is intended for amateurs and experts. JavaFX is a Java library that is utilized to foster Desktop applications as well as Rich Internet Applications (RIA). The applications worked in JavaFX, can run on various stages including Web, Mobile, and Desktops. Our JavaFX instructional exercise incorporates all subjects of the JavaFX library, for example, Fundamentals, 2D Shapes, 3D Shapes, Effects, Animation, Text, Layouts, UI Controls, Transformations, Charts, JavaFX with CSS, JavaFX with Media, and so forth.

Java Swing

Java Swing instructional exercise is a piece of Java Foundation Classes (JFC) that is utilized to make window-based applications. It is based on the highest point of AWT (Abstract Windowing Toolkit) API and is altogether written in java. Not at all like AWT, Java Swing gives stage autonomous and lightweight parts.

The `javax.swing` bundle gives classes to java swing API, for example, JButton, JTextField, JTextArea, JRadioButton, Jcheckbox, Jmenu, JcolorChooser, and so on.

Hierarchy of Java Swing classes

The hierarchy of java swing API is given below.

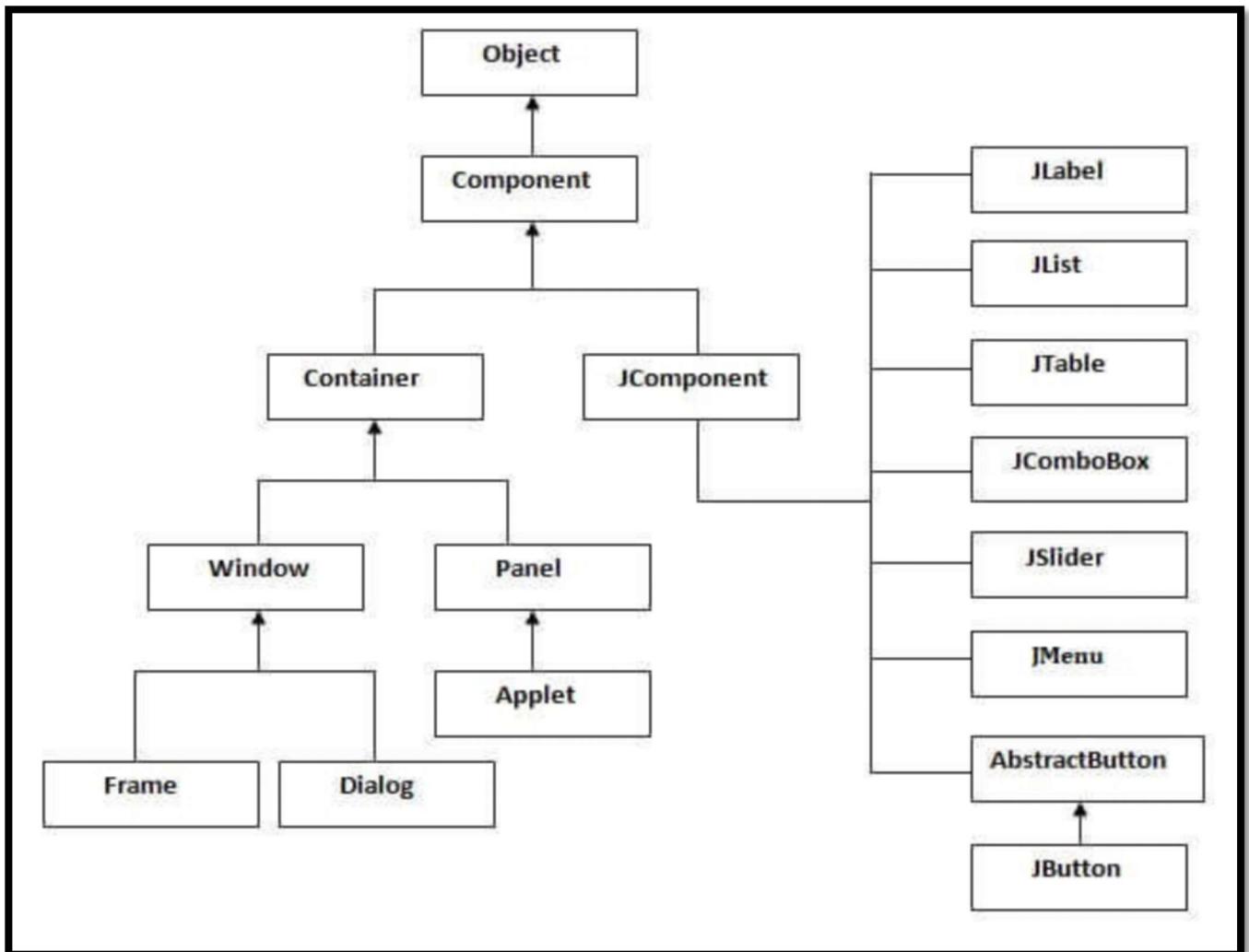


Fig no 4 Swing Hierarchy

Java AWT

Java AWT (Abstract Window Toolkit) is an API to foster Graphical User Interface (GUI) or windows-based applications in Java.

Java AWT parts are stage subordinate for example parts are shown from the perspective of the working framework. AWT is a significant burden for example its parts are utilizing the assets of a basic working framework (OS).

The `java.awt` bundle gives classes to AWT API, for example, `TextField`, `Label`, `TextArea`, `RadioButton`, `CheckBox`, `Choice`, `List`, and so on.

Java AWT Hierarchy

Java AWT calls the native platform calls the native platform (operating systems) subroutine for creating API components like `TextField`, `ChechBox`, `button`, etc. For example, an AWT GUI with components like `TextField`, `label` and `button` will have different look and feel for the different platforms like Windows, MAC OS, and Unix. The reason for this is the platforms have different view for their native components and AWT directly calls the native subroutine that creates those components. In simple words, an AWT application will look like a windows application in Windows OS whereas it will look like a Mac application in the MAC OS.

The hierarchy of java AWT is given below:

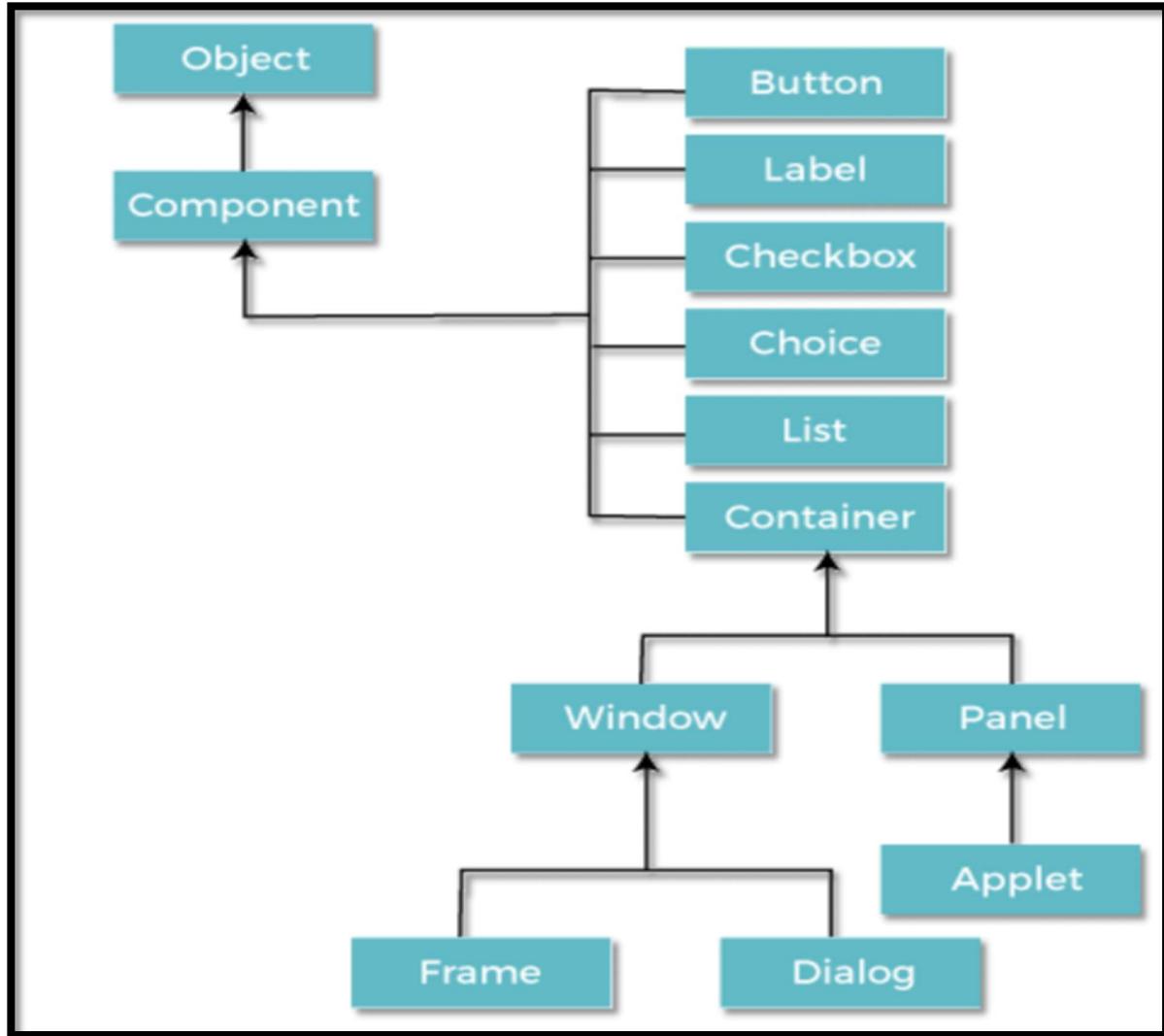
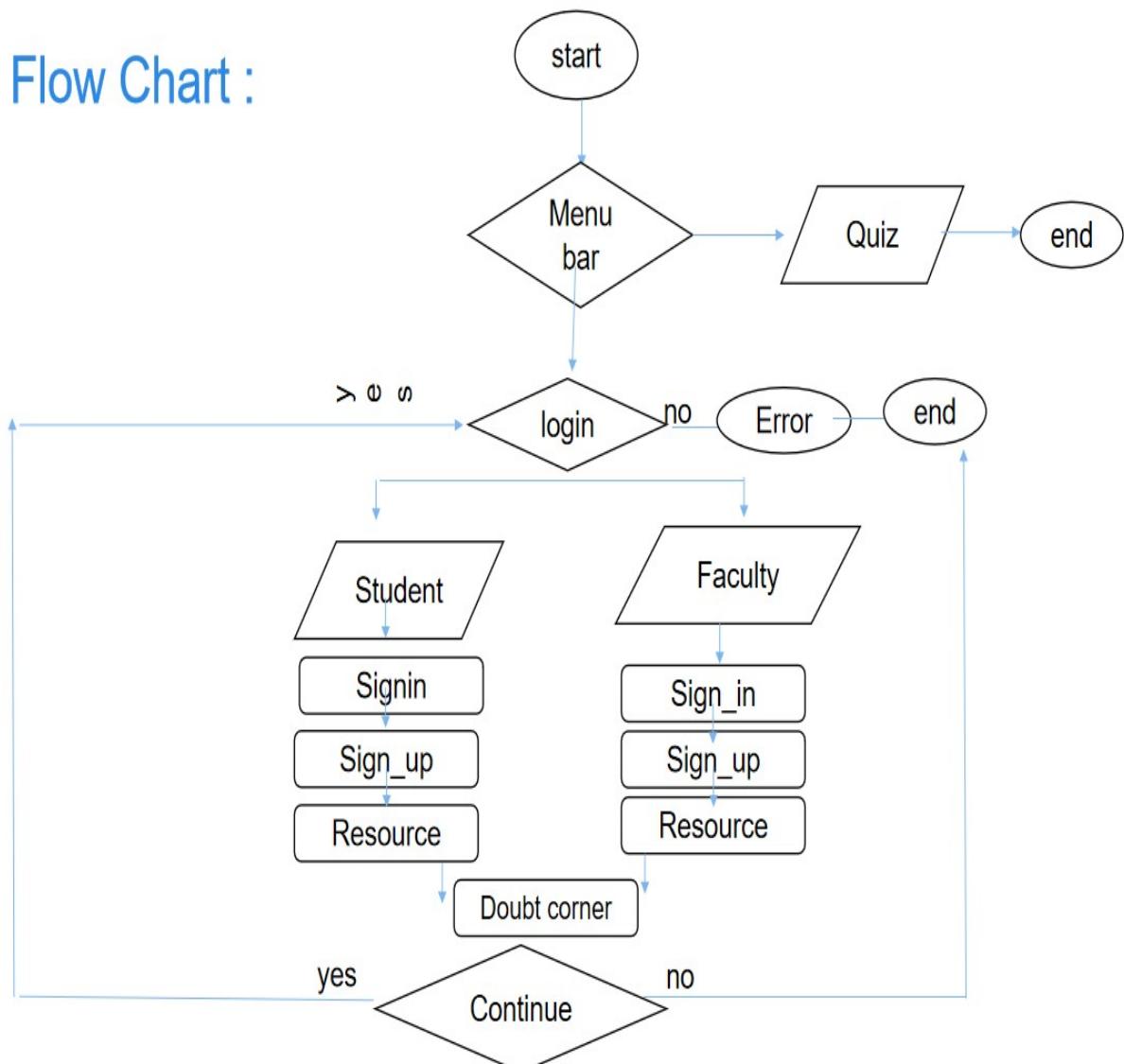


Fig no 5 Java AWT Hierarchy

CHAPTER 4**DESIGN****DESIGN GOALS****FLOW CHARTS**

Flow Chart :



CHAPTER 5

IMPLEMENTATION

CHAPTER 6

Module Window1.java:

```
package virtuall_classroom;

import javax.swing.*;
import javax.swing.plaf.ColorUIResource;

import java.awt.Color;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;
import java.awt.SystemColor;
import java.awt.Font;

public class Window1 {

    public static void main(String[] args) {
        showWindow();
    }

    public static void showWindow() {
        JFrame frame = new JFrame("VIRTUAL CLASSROOM BY ABHINAV D");
        frame.getContentPane().setForeground(new Color(102, 205, 170));
        frame.getContentPane().setBackground(new Color(112, 128, 144));
        frame.setBounds(100,100,870,638);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.getContentPane().setLayout(null);
        frame.setLocationRelativeTo(null);

        JButton btnNewButton = new JButton("STUDENT");
        btnNewButton.setForeground(new Color(255, 255, 255));
```

```
btnNewButton.setFont(new Font("Tahoma", Font.PLAIN, 22));
btnNewButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        Student.main(null);
    }
});

btnNewButton.setBackground(new Color(255, 140, 0));
btnNewButton.setBounds(94, 154, 275, 120);
frame.getContentPane().add(btnNewButton);

JButton btnNewButton_1 = new JButton("FACULTY");
btnNewButton_1.setForeground(new Color(255, 255, 255));
btnNewButton_1.setFont(new Font("Tahoma", Font.PLAIN, 22));
btnNewButton_1.setBackground(new Color(47, 79, 79));
btnNewButton_1.setBounds(471, 154, 275, 120);
frame.getContentPane().add(btnNewButton_1);
btnNewButton_1.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        Teacher.main(null);
    }
});

JButton btnNewButton_2 = new JButton("QUIZ");
btnNewButton_2.setForeground(new Color(255, 255, 255));
btnNewButton_2.setFont(new Font("Tahoma", Font.PLAIN, 22));
btnNewButton_2.setBackground(new Color(139, 0, 0));
btnNewButton_2.addActionListener(new ActionListener() {
```

```
public void actionPerformed(ActionEvent e) {  
    OnlineTest.main(null);  
}  
});  
btnNewButton_2.setBounds(95, 346, 274, 120);  
frame.getContentPane().add(btnNewButton_2);  
  
JButton btnNewButton_3 = new JButton("EXIT");  
btnNewButton_3.setFont(new Font("Tahoma", Font.PLAIN, 22));  
btnNewButton_3.setForeground(new Color(0, 0, 0));  
btnNewButton_3.setBackground(new Color(135, 206, 250));  
btnNewButton_3.setBounds(471, 346, 275, 120);  
frame.getContentPane().add(btnNewButton_3);  
btnNewButton_3.addActionListener(new ActionListener() {  
    public void actionPerformed(ActionEvent e) {  
        System.exit(0);  
    }  
});  
  
JButton btnNewButton_4 = new JButton("VIRTUAL CLASSROOM");  
btnNewButton_4.setBackground(new Color(72, 61, 139));  
btnNewButton_4.setForeground(new Color(255, 255, 255));  
btnNewButton_4.setFont(new Font("Franklin Gothic Heavy", Font.BOLD, 33));  
btnNewButton_4.addActionListener(new ActionListener() {  
    public void actionPerformed(ActionEvent e) {
```

```
Info.main(null);

}

});

btnNewButton_4.setBounds(10, 10, 836, 108);

frame.getContentPane().add(btnNewButton_4);

JButton btnNewButton_5 = new JButton("Help");

btnNewButton_5.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent e) {

        Help.main(null);

    }

});

btnNewButton_5.setBackground(new Color(240, 255, 240));

btnNewButton_5.setBounds(761, 570, 85, 21);

frame.getContentPane().add(btnNewButton_5);

frame.setVisible(true);

}

}
```

Module Teacher.java

```
package virtuall_classroom;

import java.awt.Color;

import javax.swing.JFrame;

import javax.swing.JLabel;

import java.awt.Font;

import javax.swing.SwingConstants;
```

```
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class Teacher {

    public static void main(String[] args) {
        showWindow();
    }

    public static void showWindow() {
        JFrame frame = new JFrame("VIRTUAL CLASSROOM BY ABHINAV D");
        frame.getContentPane().setForeground(new Color(102, 205, 170));
        frame.getContentPane().setBackground(new Color(189, 183, 107));
        frame.setBounds(100,100,870,457);
        frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
        frame.getContentPane().setLayout(null);

        JLabel lblNewLabel = new JLabel("WELCOME FACULTY");
        lblNewLabel.setFont(new Font("Tahoma", Font.BOLD, 45));
        lblNewLabel.setBounds(190, 53, 515, 63);
        frame.getContentPane().add(lblNewLabel);

        JButton btnNewButton = new JButton("SIGN_IN");
        btnNewButton.setBackground(new Color(255, 20, 147));
        btnNewButton.setForeground(new Color(255, 250, 250));
        btnNewButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {

```

```
        frame.dispose();

        Login.main(null);

    }

});

btnNewButton.setFont(new Font("Tahoma", Font.PLAIN, 30));

btnNewButton.setBounds(85, 215, 270, 63);

frame.getContentPane().add(btnNewButton);

JButton btnSignup = new JButton("SIGN_UP");

btnSignup.setBackground(new Color(205, 92, 92));

btnSignup.setForeground(new Color(255, 250, 250));

btnSignup.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent e) {

        frame.dispose();

        SignUp.main(null);

    }

});

btnSignup.setFont(new Font("Tahoma", Font.PLAIN, 30));

btnSignup.setBounds(474, 215, 270, 63);

frame.getContentPane().add(btnSignup);

frame.setLocationRelativeTo(null);

frame.setVisible(true);

}

}
```

Module Student.java

```
package virtuall_classroom;
```

```
import java.awt.Color;

import javax.swing.JFrame;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.SwingConstants;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class Student {
    public static void main(String[] args) {
        showWindow();
    }

    public static void showWindow() {
        JFrame frame = new JFrame("VIRTUAL CLASSROOM BY ABHINAV D");
        frame.getContentPane().setForeground(new Color(102, 205, 170));
        frame.getContentPane().setBackground(new Color(205, 92, 92));
        frame.setBounds(100,100,870,509);
        frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
        frame.getContentPane().setLayout(null);

        JLabel lblNewLabel = new JLabel("WELCOME STUDENT");
        lblNewLabel.setFont(new Font("Tahoma", Font.BOLD, 45));
        lblNewLabel.setBounds(192, 52, 515, 63);
        frame.getContentPane().add(lblNewLabel);
    }
}
```

```
 JButton btnNewButton = new JButton("SIGN_IN");
btnNewButton.setBackground(new Color(143, 188, 143));
btnNewButton.setForeground(new Color(255, 255, 255));
btnNewButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        frame.dispose();
        Login.main(null);
    }
});
btnNewButton.setFont(new Font("Tahoma", Font.PLAIN, 30));
btnNewButton.setBounds(90, 237, 270, 63);
frame.getContentPane().add(btnNewButton);

JButton btnSignup = new JButton("SIGN_UP");
btnSignup.setBackground(new Color(119, 136, 153));
btnSignup.setForeground(new Color(255, 255, 255));
btnSignup.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        frame.dispose();
        SignUp.main(null);
    }
});
btnSignup.setFont(new Font("Tahoma", Font.PLAIN, 30));
btnSignup.setBounds(479, 237, 270, 63);
frame.getContentPane().add(btnSignup);
frame.setLocationRelativeTo(null);
```

```
frame.setVisible(true);

}

}

Module study_mat.java

package virtuall_classroom;

import java.awt.Color;

import javax.swing.JFrame;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class study_mat {

    public static void main(String[] args) {
        showWindow();
    }

    public static void showWindow() {
        JFrame frame = new JFrame("VIRTUAL CLASSROOM BY ABHINAV D");
        frame.getContentPane().setForeground(new Color(102, 205, 170));
        frame.getContentPane().setBackground(new Color(240, 128, 128));
        frame.setBounds(100,100,870,638);
        frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
        frame.getContentPane().setLayout(null);
    }
}
```

```
JLabel lblNewLabel = new JLabel("Reference Materials");
lblNewLabel.setFont(new Font("Tahoma", Font.BOLD, 40));
lblNewLabel.setBounds(234, 24, 432, 65);
frame.getContentPane().add(lblNewLabel);

JButton btnNewButton = new JButton("Doubt corner");
btnNewButton.setForeground(new Color(255, 255, 255));
btnNewButton.setBackground(new Color(255, 0, 0));
btnNewButton.setFont(new Font("Tahoma", Font.PLAIN, 23));
btnNewButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        ChatClient.main(null);
    }
});
btnNewButton.setBounds(615, 523, 190, 38);
frame.getContentPane().add(btnNewButton);

JButton btnNewButton_1 = new JButton("Module 1");
btnNewButton_1.setForeground(new Color(255, 250, 250));
btnNewButton_1.setBackground(new Color(153, 50, 204));
btnNewButton_1.setFont(new Font("Tahoma", Font.PLAIN, 28));
btnNewButton_1.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        content.main(null);
    }
});
btnNewButton_1.setBounds(53, 145, 272, 65);
```

```
frame.getContentPane().add(btnNewButton_1);

JButton btnNewButton_1_1 = new JButton("Module 2");
btnNewButton_1_1.setBackground(new Color(160, 82, 45));
btnNewButton_1_1.setForeground(new Color(255, 250, 250));
btnNewButton_1_1.setFont(new Font("Tahoma", Font.PLAIN, 28));
btnNewButton_1_1.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        content.main(null);
    }
});
btnNewButton_1_1.setBounds(533, 145, 272, 65);
frame.getContentPane().add(btnNewButton_1_1);

JButton btnNewButton_1_2 = new JButton("Module 3");
btnNewButton_1_2.setBackground(new Color(72, 61, 139));
btnNewButton_1_2.setForeground(new Color(255, 250, 250));
btnNewButton_1_2.setFont(new Font("Tahoma", Font.PLAIN, 28));
btnNewButton_1_2.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        content.main(null);
    }
});
btnNewButton_1_2.setBounds(53, 316, 272, 65);
frame.getContentPane().add(btnNewButton_1_2);

JButton btnNewButton_1_3 = new JButton("Module 4");
btnNewButton_1_3.setBackground(new Color(0, 0, 128));
```

```
btnNewButton_1_3.setForeground(new Color(255, 250, 250));
btnNewButton_1_3.setFont(new Font("Tahoma", Font.PLAIN, 28));
btnNewButton_1_3.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        content.main(null);
    }
});
btnNewButton_1_3.setBounds(533, 316, 272, 65);
frame.getContentPane().add(btnNewButton_1_3);
frame.setLocationRelativeTo(null);
frame.setVisible(true);

}
}
```

Module Sign_Up.java

```
package virtuall_classroom;

import java.awt.Color;
import java.awt.Font;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
import java.io.RandomAccessFile;
import javax.swing.JButton;
```

```
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JPasswordField;
import javax.swing.JTextField;

public class SignUp extends JFrame implements ActionListener {
    JLabel l1, l2, l3, l4, l5, l6, l7, l8; //all labels for textField
    JTextField tf1, tf2, tf5, tf6, tf7; // others fields
    JButton btn1, btn2; //buttons for signup and clear
    JPasswordField p1, p2; // password fields
    File f = new File("C:\\Files");
    int ln;

    void createFolder(){
        if(!f.exists()){
            f.mkdirs();
        }
    }

    void readFile(){
        try {
            FileReader fr = new FileReader(f+"\\logins.txt");
            System.out.println("file exists!");
        } catch (FileNotFoundException ex) {
            try {
                FileWriter fw = new FileWriter(f+"\\logins.txt");
            }
        }
    }
}
```

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

    } catch (IOException ex1) {

        // Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex1);

    }

}

}

void addData(String usr,String pswd,String mail,String con,String state,String Phn){

try{

    RandomAccessFile raf = new RandomAccessFile(f+"\\logins.txt", "rw");

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

        raf.readLine();

    }

    //if condition added after video to have no lines on first entry

    if(ln>0){

        raf.writeBytes("\r\n");

        raf.writeBytes("\r\n");

    }

    raf.writeBytes("Email:"+mail+"\r\n");

    raf.writeBytes("Password:"+pswd+"\r\n");

    raf.writeBytes("Username:"+usr+"\r\n");

    raf.writeBytes("Country:"+con+"\r\n");

    raf.writeBytes("State:"+state+"\r\n");

    raf.writeBytes("Phone No:"+Phn);

}

} catch (FileNotFoundException ex) {

    //Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);

}
```

```
        } catch (IOException ex) {  
            //Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);  
        }  
  
    }  
  
void countLines(){  
    try {  
        ln=0;  
        RandomAccessFile raf = new RandomAccessFile(f+"\\logins.txt", "rw");  
        for(int i=0;raf.readLine()!=null;i++){  
            ln++;  
        }  
        System.out.println("number of lines:"+ln);  
    } catch (FileNotFoundException ex) {  
        // Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);  
    } catch (IOException ex) {  
        // Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);  
    }  
}  
  
}  
  
SignUp()  
{  
    getContentPane().setBackground(new Color(32, 178, 170));  
    setVisible(true);  
    setSize(627, 559);  
    getContentPane().setLayout(null);  
    //    setExtendedState(getExtendedState() | JFrame.MAXIMIZED_BOTH);
```

```
setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);

setTitle("Registration Form in Java");

l1 = new JLabel("Sign Up");
l1.setForeground(Color.blue);
l1.setFont(new Font("Serif", Font.BOLD, 20));

l2 = new JLabel("Name:");
l2.setFont(new Font("Tahoma", Font.BOLD, 10));

l3 = new JLabel("Email-ID:");
l3.setFont(new Font("Tahoma", Font.BOLD, 10));

l4 = new JLabel("Create Passowrd:");
l4.setFont(new Font("Tahoma", Font.BOLD, 10));

l5 = new JLabel("Confirm Password:");
l5.setFont(new Font("Tahoma", Font.BOLD, 10));

l6 = new JLabel("Country:");
l6.setFont(new Font("Tahoma", Font.BOLD, 10));

l7 = new JLabel("State:");
l7.setFont(new Font("Tahoma", Font.BOLD, 10));

l8 = new JLabel("Phone No:");
l8.setFont(new Font("Tahoma", Font.BOLD, 10));

tf1 = new JTextField();
tf2 = new JTextField();

p1 = new JPasswordField();
p2 = new JPasswordField();

tf5 = new JTextField();
tf6 = new JTextField();

tf7 = new JTextField();

btn1 = new JButton("Submit");
btn1.setBackground(new Color(128, 0, 0));
```

```
btn1.setForeground(new Color(255, 255, 255));  
  
btn2 = new JButton("Clear");  
  
btn2.setBackground(new Color(95, 158, 160));  
  
btn2.setForeground(new Color(255, 255, 255));  
  
btn1.addActionListener(this);  
  
btn2.addActionListener(this);  
  
l1.setBounds(25, 10, 400, 30);  
  
l2.setBounds(80, 70, 200, 30);  
  
l3.setBounds(80, 110, 200, 30);  
  
l4.setBounds(80, 150, 200, 30);  
  
l5.setBounds(80, 190, 200, 30);  
  
l6.setBounds(80, 230, 200, 30);  
  
l7.setBounds(80, 270, 200, 30);  
  
l8.setBounds(80, 310, 200, 30);  
  
tf1.setBounds(300, 70, 200, 30);  
  
tf2.setBounds(300, 110, 200, 30);  
  
p1.setBounds(300, 150, 200, 30);  
  
p2.setBounds(300, 190, 200, 30);  
  
tf5.setBounds(300, 230, 200, 30);  
  
tf6.setBounds(300, 270, 200, 30);  
  
tf7.setBounds(300, 310, 200, 30);  
  
btn1.setBounds(400, 416, 100, 30);  
  
btn2.setBounds(80, 416, 100, 30);  
  
getContentPane().add(l1);  
  
getContentPane().add(l2);  
  
getContentPane().add(tf1);  
  
getContentPane().add(l3);  
  
getContentPane().add(tf2);
```

```
getContentPane().add(l4);
getContentPane().add(p1);
getContentPane().add(l5);
getContentPane().add(p2);
getContentPane().add(l6);
getContentPane().add(tf5);
getContentPane().add(l7);
getContentPane().add(tf6);
getContentPane().add(l8);
getContentPane().add(tf7);
getContentPane().add(btn1);
getContentPane().add(btn2);
}

public void actionPerformed(ActionEvent e)
{
    if (e.getSource() == btn1)
    {
        int x = 0;
        String s1 = tf1.getText();
        String s2 = tf2.getText();
        char[] s3 = p1.getPassword();
        char[] s4 = p2.getPassword();
        String s8 = new String(s3);
        String s9 = new String(s4);
        String s5 = tf5.getText();
        String s6 = tf6.getText();
        String s7 = tf7.getText();
        if (s8.equals(s9))
```

```
{  
    try  
    {  
        createFolder();  
        readFile();  
        countLines();  
        addData(s1,s8,s2,s5,s6,s7);  
  
        JOptionPane.showMessageDialog(btn1, "Data Saved Successfully");  
        dispose();  
    }  
    catch (Exception ex)  
    {  
        System.out.println(ex);  
    }  
}  
else  
{  
    JOptionPane.showMessageDialog(btn1, "Password Does Not Match");  
}  
}  
else  
{  
    tf1.setText("");  
    tf2.setText("");  
    p1.setText("");  
    p2.setText("");
```

```
        tf5.setText("");
        tf6.setText("");
        tf7.setText("");
    }
}

public static void main(String args[])
{
    new SignUp();
}

}
```

Module sign_up_t.java

```
package virtuall_classroom;

import java.awt.Color;
import java.awt.Font;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
import java.io.RandomAccessFile;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
```

```
import javax.swing.JOptionPane;
import javax.swing.JPasswordField;
import javax.swing.JTextField;

public class Sign_up_t extends JFrame implements ActionListener {
    JLabel l1, l2, l3, l4, l5, l6, l7, l8; //all labels for textField
    JTextField tf1, tf2, tf5, tf6, tf7; // others fields
    JButton btn1, btn2; //buttons for signup and clear
    JPasswordField p1, p2; // password fields
    File f = new File("C:\\\\Files");
    int ln;

    void createFolder(){
        if(!f.exists()){
            f.mkdirs();
        }
    }

    void readFile(){
        try {
            FileReader fr = new FileReader(f+"\\\\login.txt");
            System.out.println("file exists!");
        } catch (FileNotFoundException ex) {
            try {
                FileWriter fw = new FileWriter(f+"\\\\login.txt");
                System.out.println("File created");
            } catch (IOException ex1) {

```

```
// Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex1);
}

}

}

void addData(String usr,String pswd,String mail,String con,String state,String Phn){

try {

    RandomAccessFile raf = new RandomAccessFile(f+"\\login.txt", "rw");

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

        raf.readLine();

    }

    //if condition added after video to have no lines on first entry

    if(ln>0){

        raf.writeBytes("\r\n");

        raf.writeBytes("\r\n");

    }

    raf.writeBytes("Email:"+mail+"\r\n");

    raf.writeBytes("Password:"+pswd+"\r\n");

    raf.writeBytes("Username:"+usr+"\r\n");

    raf.writeBytes("Country:"+con+"\r\n");

    raf.writeBytes("State:"+state+"\r\n");

    raf.writeBytes("Phone No:"+Phn);

}

} catch (FileNotFoundException ex) {

    //Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);

} catch (IOException ex) {

    //Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);

}
```

```
}
```

```
}
```

```
void countLines(){
```

```
    try {
```

```
        ln=0;
```

```
        RandomAccessFile raf = new RandomAccessFile(f+"\\logins.txt", "rw");
```

```
        for(int i=0;raf.readLine()!=null;i++){
```

```
            ln++;
```

```
}
```

```
        System.out.println("number of lines:"+ln);
```

```
    } catch (FileNotFoundException ex) {
```

```
        // Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);
```

```
    } catch (IOException ex) {
```

```
        // Logger.getLogger(notepad.class.getName()).log(Level.SEVERE, null, ex);
```

```
}
```

```
}
```

```
Sign_up_t()
```

```
{
```

```
    getContentPane().setBackground(new Color(233, 150, 122));
```

```
    setVisible(true);
```

```
    setSize(627, 559);
```

```
    getContentPane().setLayout(null);
```

```
//    setExtendedState(getExtendedState() | JFrame.MAXIMIZED_BOTH);
```

```
    setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
```

```
    setTitle("Registration Form in Java");
```

```
I1 = new JLabel("Sign_Up");
I1.setForeground(Color.blue);
I1.setFont(new Font("Serif", Font.BOLD, 20));
I2 = new JLabel("Name:");
I2.setFont(new Font("Tahoma", Font.BOLD, 10));
I3 = new JLabel("Email-ID:");
I3.setFont(new Font("Tahoma", Font.BOLD, 10));
I4 = new JLabel("Create Passowrd:");
I4.setFont(new Font("Tahoma", Font.BOLD, 10));
I5 = new JLabel("Confirm Password:");
I5.setFont(new Font("Tahoma", Font.BOLD, 10));
I6 = new JLabel("Country:");
I6.setFont(new Font("Tahoma", Font.BOLD, 10));
I7 = new JLabel("State:");
I7.setFont(new Font("Tahoma", Font.BOLD, 10));
I8 = new JLabel("Phone No:");
I8.setFont(new Font("Tahoma", Font.BOLD, 10));
tf1 = new JTextField();
tf2 = new JTextField();
p1 = new JPasswordField();
p2 = new JPasswordField();
tf5 = new JTextField();
tf6 = new JTextField();
tf7 = new JTextField();
btn1 = new JButton("Submit");
btn1.setForeground(new Color(255, 255, 255));
btn1.setBackground(new Color(210, 105, 30));
btn2 = new JButton("Clear");
```

```
btn2.setBackground(new Color(210, 180, 140));  
btn2.setForeground(new Color(255, 255, 255));  
btn1.addActionListener(this);  
btn2.addActionListener(this);  
l1.setBounds(25, 10, 400, 30);  
l2.setBounds(80, 70, 200, 30);  
l3.setBounds(80, 110, 200, 30);  
l4.setBounds(80, 150, 200, 30);  
l5.setBounds(80, 190, 200, 30);  
l6.setBounds(80, 230, 200, 30);  
l7.setBounds(80, 270, 200, 30);  
l8.setBounds(80, 310, 200, 30);  
tf1.setBounds(300, 70, 200, 30);  
tf2.setBounds(300, 110, 200, 30);  
p1.setBounds(300, 150, 200, 30);  
p2.setBounds(300, 190, 200, 30);  
tf5.setBounds(300, 230, 200, 30);  
tf6.setBounds(300, 270, 200, 30);  
tf7.setBounds(300, 310, 200, 30);  
btn1.setBounds(400, 416, 100, 30);  
btn2.setBounds(80, 416, 100, 30);  
getContentPane().add(l1);  
getContentPane().add(l2);  
getContentPane().add(tf1);  
getContentPane().add(l3);  
getContentPane().add(tf2);  
getContentPane().add(l4);  
getContentPane().add(p1);
```

```
getContentPane().add(l5);
getContentPane().add(p2);
getContentPane().add(l6);
getContentPane().add(tf5);
getContentPane().add(l7);
getContentPane().add(tf6);
getContentPane().add(l8);
getContentPane().add(tf7);
getContentPane().add(btn1);
getContentPane().add(btn2);
}

public void actionPerformed(ActionEvent e)
{
    if (e.getSource() == btn1)
    {
        int x = 0;
        String s1 = tf1.getText();
        String s2 = tf2.getText();
        char[] s3 = p1.getPassword();
        char[] s4 = p2.getPassword();
        String s8 = new String(s3);
        String s9 = new String(s4);
        String s5 = tf5.getText();
        String s6 = tf6.getText();
        String s7 = tf7.getText();
        if (s8.equals(s9))
        {
            try
```

```
{  
    createFolder();  
    readFile();  
    countLines();  
    addData(s1,s8,s2,s5,s6,s7);  
  
    JOptionPane.showMessageDialog(btn1, "Data Saved Successfully");  
    dispose();  
}  
catch (Exception ex)  
{  
    System.out.println(ex);  
}  
}  
else  
{  
    JOptionPane.showMessageDialog(btn1, "Password Does Not Match");  
}  
}  
else  
{  
    tf1.setText("");  
    tf2.setText("");  
    p1.setText("");  
    p2.setText("");  
    tf5.setText("");  
    tf6.setText("");  
}
```

```
    tf7.setText("");
}

}

public static void main(String args[])
{
    new Sign_up_t();
}

}
```

Module OnlineTest.java

```
package virtuall_classroom;

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

class OnlineTest extends JFrame implements ActionListener
{
    JLabel l;
    JRadioButton jb[] = new JRadioButton[5];
    JButton b1, b2;
    ButtonGroup bg;
    int count = 0, current = 0, x = 1, y = 1, now = 0;
    int m[] = new int[10];
    OnlineTest(String s)
    {
        super(s);
    }
}
```

```
getContentPane().setBackground(new Color(0, 206, 209));

l=new JLabel();

getContentPane().add(l);

bg=new ButtonGroup();

for(int i=0;i<5;i++)

{

    jb[i]=new JRadioButton();

    getContentPane().add(jb[i]);

    bg.add(jb[i]);

}

b1=new JButton("Next");

b2=new JButton("Bookmark");

b1.addActionListener(this);

b2.addActionListener(this);

getContentPane().add(b1);getContentPane().add(b2);

set();

l.setBounds(30,40,450,20);

jb[0].setBounds(50,80,100,20);

jb[1].setBounds(50,110,100,20);

jb[2].setBounds(50,140,100,20);

jb[3].setBounds(50,170,100,20);

b1.setBounds(100,240,100,30);

b2.setBounds(270,240,100,30);

setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);

getContentPane().setLayout(null);

 setLocation(250,100);

setVisible(true);

setSize(600,350);
```

```
}

public void actionPerformed(ActionEvent e)

{

    if(e.getSource()==b1)

    {

        if(check())

            count=count+1;

        current++;

        set();

        if(current==9)

        {

            b1.setEnabled(false);

            b2.setText("Result");

        }

    }

    if(e.getActionCommand().equals("Bookmark"))

    {

        JButton bk=new JButton("Bookmark"+x);

        bk.setBounds(480,20+30*x,100,30);

        getContentPane().add(bk);

        bk.addActionListener(this);

        m[x]=current;

        x++;

        current++;

        set();

        if(current==9)

            b2.setText("Result");

        setVisible(false);

    }

}
```

```
    setVisible(true);

}

for(int i=0,y=1;i<x;i++,y++)

{

if(e.getActionCommand().equals("Bookmark"+y))

{

    if(check())

        count=count+1;

    now=current;

    current=m[y];

    set();

    ((JButton)e.getSource()).setEnabled(false);

    current=now;

}

}

if(e.getActionCommand().equals("Result"))

{

    if(check())

        count=count+1;

    current++;

    System.out.println("correct ans="+count);

    JOptionPane.showMessageDialog(this,"correct ans="+count);

    System.exit(0);

}

void set()

{
```

```
jb[4].setSelected(true);

if(current==0)

{

    l.setText("Que1: Number of primitive data types in Java are?");

    jb[0].setText("5");jb[1].setText("8");jb[2].setText("5");jb[3].setText("10");

}

if(current==1)

{

    l.setText("Que2: What is the size of float and double in java?");

    jb[0].setText("32,32");jb[1].setText("32,128");jb[2].setText("32,64");jb[3].setText("16,64");

}

if(current==2)

{

    l.setText("Que3: Which package is directly available to our class without importing it?");

    jb[0].setText("swing");jb[1].setText("applet");jb[2].setText("net");jb[3].setText("lang");

}

if(current==3)

{

    l.setText("Que4: String class is defined in which package?");

    jb[0].setText("lang");jb[1].setText("Swing");jb[2].setText("Applet");jb[3].setText("awt");

}

if(current==4)

{

    l.setText("Que5: Which is not a access specifier?");

    jb[0].setText("Public");jb[1].setText("Private");jb[2].setText("Int");jb[3].setText("Protected");

}

if(current==5)

{
```

```
l.setText("Que6: Which one among these is not a keyword?");

jb[0].setText("class");jb[1].setText("int");jb[2].setText("Hello");jb[3].setText("if");

}

if(current==6)

{

l.setText("Que7: Which one among these is not a class? ");

jb[0].setText("Swing");jb[1].setText("add");jb[2].setText("Math");

jb[3].setText("Scaner");

}

if(current==7)

{

l.setText("Que8: Identify the return type of a method that does not return any value.");

jb[0].setText("int");jb[1].setText("float");jb[2].setText("double");

jb[3].setText("void");

}

if(current==8)

{

l.setText("Que9: Identify the modifier which cannot be used for constructor.");

jb[0].setText("private");jb[1].setText("Static");jb[2].setText("public");jb[3].setText("protected");

}

if(current==9)

{

l.setText("Que10: Which of the following is used to find and fix bugs in the program?");

jb[0].setText("JDK");jb[1].setText("JIT");jb[2].setText("JDB");

jb[3].setText("JVM");

}

l.setBounds(30,40,450,20);

for(int i=0,j=0;i<=90;i+=30,j++)
```

```
        jb[j].setBounds(50,80+i,200,20);

    }

    boolean check()

    {

        if(current==0)

            return(jb[1].isSelected());

        if(current==1)

            return(jb[2].isSelected());

        if(current==2)

            return(jb[3].isSelected());

        if(current==3)

            return(jb[0].isSelected());

        if(current==4)

            return(jb[2].isSelected());

        if(current==5)

            return(jb[2].isSelected());

        if(current==6)

            return(jb[1].isSelected());

        if(current==7)

            return(jb[3].isSelected());

        if(current==8)

            return(jb[1].isSelected());

        if(current==9)

            return(jb[2].isSelected());

        return false;

    }

    public static void main(String s[])

    {
```

```
    new OnlineTest("Online Test Of Java");  
}  
}
```

Module Login.java

```
package virtuall_classroom;  
  
import javax.swing.*;  
import java.awt.*;  
import java.awt.event.*;  
import java.io.File;  
import java.io.FileNotFoundException;  
import java.io.FileReader;  
import java.io.FileWriter;  
import java.io.IOException;  
import java.io.RandomAccessFile;  
  
public class Login extends JFrame implements ActionListener {  
  
    JLabel l1, l2, l3; //label for email and password  
  
    JTextField tf1; // email field  
  
    JButton btn1; // login button  
  
    JPasswordField p1; // password field  
  
    File f = new File("C:\\\\Files"); //file path  
    int ln;
```

```
// create folder in which record is save

void createFolder() {
    if (!f.exists()) {
        f.mkdirs();
    }
}

//check file is exist or not

void readFile() {
    try {
        FileReader fr = new FileReader(f + "\\logins.txt");
        System.out.println("file exists!");
    } catch (FileNotFoundException ex) {
        try {
            FileWriter fw = new FileWriter(f + "\\logins.txt");
            System.out.println("File created");
        } catch (IOException ex1) {
            }
        }
    }
}

// login logic

void logic(String usr, String pswd) {
    try {
        RandomAccessFile raf = new RandomAccessFile(f + "\\logins.txt", "rw");
        for (int i = 0; i < ln; i += 7) {
            System.out.println("count " + i);

            String forUser = raf.readLine().substring(6);
```

```
String forPswd = raf.readLine().substring(9);

System.out.println(forUser + forPswd);

if (usr.equals(forUser) & pswd.equals(forPswd)) {

    JOptionPane.showMessageDialog(null, "Login Successfully!!");

    dispose();

    study_mat.main(null);

    break;

} else if (i == (ln - 6)) {

    JOptionPane.showMessageDialog(null, "incorrect username/password");

    break;

}

for (int k = 1; k <= 5; k++) {

    raf.readLine();

}

}

} catch (FileNotFoundException ex) {

} catch (IOException ex) {

}

}

//count the number of lines from file

void countLines() {

try {

ln = 0;

RandomAccessFile raf = new RandomAccessFile(f + "\\logins.txt", "rw");

for (int i = 0; raf.readLine() != null; i++) {

ln++;

}

}
```

```
        System.out.println("number of lines:" + ln);

    } catch (FileNotFoundException ex) {

    } catch (IOException ex) {

    }

}

Login() {
    getContentPane().setBackground(new Color(210, 180, 140));

    setTitle("VIRTUAL CLASSROOM BY ABHINAV D");

    setVisible(true);

    setSize(690, 351);

    getContentPane().setLayout(null);

    setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);

    l1 = new JLabel("Sign_In");

    l1.setForeground(Color.blue);

    l1.setFont(new Font("Serif", Font.BOLD, 20));

    l2 = new JLabel("Enter Email:");

    l2.setFont(new Font("Tahoma", Font.BOLD, 10));
}
```

```
l3 = new JLabel("Enter Password:");
l3.setFont(new Font("Tahoma", Font.BOLD, 10));

tf1 = new JTextField();

p1 = new JPasswordField();

btn1 = new JButton("Submit");
btn1.setForeground(new Color(255, 255, 255));
btn1.setBackground(new Color(210, 105, 30));

l1.setBounds(20, 10, 400, 30);

l2.setBounds(80, 70, 200, 30);

l3.setBounds(80, 110, 200, 30);

tf1.setBounds(300, 70, 200, 30);

p1.setBounds(300, 110, 200, 30);

btn1.setBounds(400, 195, 100, 30);

getContentPane().add(l1);

getContentPane().add(l2);
```

```
getContentPane().add(tf1);

getContentPane().add(l3);

getContentPane().add(p1);

getContentPane().add(btn1);

btn1.addActionListener(this);

}

public void actionPerformed(ActionEvent e) {

    showData();

}

public void showData() {

    JFrame f1 = new JFrame();

    JLabel l, l0;

    String str1 = tf1.getText();

    char[] p = p1.getPassword();
```

```
String str2 = new String(p);

try {

    createFolder();
    readFile();
    countLines();
    logic(str1, str2);

} catch (Exception ex) {

    System.out.println(ex);

}

}

public static void main(String arr[]) {

    new Login();

}

}
```

Module Login_t.java

```
package virtuall_classroom;

import javax.swing.*;
```

```
import java.awt.*;
import java.awt.event.*;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
import java.io.RandomAccessFile;

public class Login_t extends JFrame implements ActionListener {

    JLabel l1, l2, l3; //label for email and password
    JTextField tf1; // email field
    JButton btn1; // login button
    JPasswordField p1; // password field

    File f = new File("C:\\\\Files"); //file path
    int ln;
    // create folder in which record is save
    void createFolder() {
        if (!f.exists()) {
            f.mkdirs();
        }
    }
    //check file is exist or not
```

```
void readFile() {  
    try {  
        FileReader fr = new FileReader(f + "\\login.txt");  
        System.out.println("file exists!");  
    } catch (FileNotFoundException ex) {  
        try {  
            FileWriter fw = new FileWriter(f + "\\login.txt");  
            System.out.println("File created");  
        } catch (IOException ex1) {  
        }  
    }  
  
    // login logic  
    void logic(String usr, String pswd) {  
        try {  
            RandomAccessFile raf = new RandomAccessFile(f + "\\login.txt", "rw");  
            for (int i = 0; i < ln; i += 7) {  
                System.out.println("count " + i);  
  
                String forUser = raf.readLine().substring(6);  
                String forPswd = raf.readLine().substring(9);  
                System.out.println(forUser + forPswd);  
                if (usr.equals(forUser) & pswd.equals(forPswd)) {  
                    JOptionPane.showMessageDialog(null, "Login Successfully!!");  
                    dispose();  
                    study_mat.main(null);  
                    break;  
                }  
            }  
        } catch (Exception e) {  
            e.printStackTrace();  
        }  
    }  
}
```

```
        } else if (i == (ln - 6)) {  
            JOptionPane.showMessageDialog(null, "incorrect username/password");  
            break;  
        }  
        for (int k = 1; k <= 5; k++) {  
            raf.readLine();  
        }  
    }  
}  
} catch (FileNotFoundException ex) {  
}  
} catch (IOException ex) {  
}  
  
}  
  
//count the number of lines from file  
  
void countLines() {  
    try {  
        ln = 0;  
        RandomAccessFile raf = new RandomAccessFile(f + "\\login.txt", "rw");  
        for (int i = 0; raf.readLine() != null; i++) {  
            ln++;  
        }  
        System.out.println("number of lines:" + ln);  
    } catch (FileNotFoundException ex) {  
    } catch (IOException ex) {  
    }  
}
```

```
>Login_t() {  
    getContentPane().setBackground(new Color(102, 205, 170));  
  
    setTitle("VIRTUAL CLASSROOM BY ABHINAV D");  
  
    setVisible(true);  
  
    setSize(690, 351);  
  
    getContentPane().setLayout(null);  
  
    setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);  
  
    l1 = new JLabel("Sign_In");  
  
    l1.setForeground(Color.blue);  
  
    l1.setFont(new Font("Serif", Font.BOLD, 20));  
  
    l2 = new JLabel("Enter Email:");  
    l2.setFont(new Font("Tahoma", Font.BOLD, 10));  
  
    l3 = new JLabel("Enter Password:");  
    l3.setFont(new Font("Tahoma", Font.BOLD, 10));  
  
    tf1 = new JTextField();  
  
    p1 = new JPasswordField();
```

```
btn1 = new JButton("Submit");
btn1.setBackground(new Color(107, 142, 35));
btn1.setForeground(new Color(255, 255, 255));

l1.setBounds(20, 10, 400, 30);

l2.setBounds(80, 70, 200, 30);

l3.setBounds(80, 110, 200, 30);

tf1.setBounds(300, 70, 200, 30);

p1.setBounds(300, 110, 200, 30);

btn1.setBounds(400, 195, 100, 30);

getContentPane().add(l1);

getContentPane().add(l2);

getContentPane().add(tf1);

getContentPane().add(l3);

getContentPane().add(p1);

getContentPane().add(btn1);
```

```
btn1.addActionListener(this);

}

public void actionPerformed(ActionEvent e) {

    showData();

}

public void showData() {

    JFrame f1 = new JFrame();

    JLabel l, l0;

    String str1 = tf1.getText();

    char[] p = p1.getPassword();

    String str2 = new String(p);

    try {

        createFolder();

        readFile();

        countLines();

    }
```

```
    logic(str1, str2);

} catch (Exception ex) {

    System.out.println(ex);

}

}

public static void main(String arr[]) {

    new Login_t();

}

}
```

Module Info.java

```
package virtuall_classroom;

import java.awt.Color;

import javax.swing.JFrame;

import javax.swing.JLabel;

import java.awt.Font;

public class Info {

    public static void main(String[] args) {
        show1();
    }
}
```

```
public static void show1() {  
    JFrame frame = new JFrame("Help");  
  
    frame.getContentPane().setForeground(new Color(102, 205, 170));  
  
    frame.getContentPane().setBackground(new Color(128, 128, 128));  
  
    frame.setBounds(100,100,870,638);  
  
    frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);  
  
    frame.getContentPane().setLayout(null);  
  
  
    JLabel lblNewLabel = new JLabel("Created by Abhinav D");  
  
    lblNewLabel.setFont(new Font("Tahoma", Font.BOLD, 25));  
  
    lblNewLabel.setBounds(25, 33, 623, 110);  
  
    frame.getContentPane().add(lblNewLabel);  
  
  
    JLabel lblNewLabel_1 = new JLabel("4E");  
  
    lblNewLabel_1.setFont(new Font("Tahoma", Font.BOLD, 25));  
  
    lblNewLabel_1.setBounds(35, 153, 623, 110);  
  
    frame.getContentPane().add(lblNewLabel_1);  
  
  
    JLabel lblNewLabel_2 = new JLabel("MINI PROJECT in JAVA");  
  
    lblNewLabel_2.setFont(new Font("Tahoma", Font.BOLD, 25));  
  
    lblNewLabel_2.setBounds(25, 284, 623, 110);  
  
    frame.getContentPane().add(lblNewLabel_2);  
  
  
    JLabel lblNewLabel_3 = new JLabel("xyz@gmail.com, 12345");  
  
    lblNewLabel_3.setFont(new Font("Tahoma", Font.BOLD, 25));  
  
    lblNewLabel_3.setBounds(25, 404, 623, 110);  
  
    frame.getContentPane().add(lblNewLabel_3);  
  
    frame.setVisible(true);
```

```
    }
```

```
}
```

Module Help.java

```
package virtuall_classroom;

import java.awt.Color;

import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JTextField;
import javax.swing.JPanel;
import javax.swing.JScrollPane;
import java.awt.Font;

public class Help {
    static JLabel jLabel1;
    public static void main(String[] args) {
        show();
    }
    public static void show() {
        JFrame frame = new JFrame("Help");
        frame.getContentPane().setForeground(new Color(102, 205, 170));
        frame.getContentPane().setBackground(new Color(0, 100, 0));
        frame.setBounds(100,100,870,638);
        frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
        frame.getContentPane().setLayout(null);
```

```
JLabel lblNewLabel = new JLabel("Reach us at xyz@gmail.com");
lblNewLabel.setFont(new Font("Tahoma", Font.BOLD, 16));
lblNewLabel.setBounds(277, 150, 277, 77);
frame.getContentPane().add(lblNewLabel);

JLabel lblNewLabel_1 = new JLabel("Contact number: 12345678");
lblNewLabel_1.setBackground(new Color(0, 0, 0));
lblNewLabel_1.setFont(new Font("Tahoma", Font.BOLD, 16));
lblNewLabel_1.setBounds(277, 275, 277, 77);
frame.getContentPane().add(lblNewLabel_1);

JLabel lblNewLabel_2 = new JLabel("-Abhinav D");
lblNewLabel_2.setFont(new Font("Tahoma", Font.BOLD, 16));
lblNewLabel_2.setBounds(691, 514, 277, 77);
frame.getContentPane().add(lblNewLabel_2);
frame.setVisible(true);

}

}
```

Module content.java

```
package virtuall_classroom;

import java.awt.Color;

import javax.swing.JFrame;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.io.File;
import java.awt.event.ActionEvent;
```

```
import java.awt.Font;

public class content {

    public static void main(String[] args) {
        showWindow();
    }

    public static void showWindow() {
        JFrame frame = new JFrame("VIRTUAL CLASSROOM BY ABHINAV D");
        frame.getContentPane().setForeground(new Color(102, 205, 170));
        frame.getContentPane().setBackground(new Color(147, 112, 219));
        frame.setBounds(100,100,853,542);
        frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
        frame.getContentPane().setLayout(null);

        JButton btnNewButton = new JButton("Video");
        btnNewButton.setBackground(new Color(255, 218, 185));
        btnNewButton.setFont(new Font("Tahoma", Font.BOLD, 40));
        btnNewButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                try {
                    if ((new File("C:\\\\Users\\\\Abhinav D\\\\Desktop\\\\my_pro\\\\pdf_t\\\\1.mp4")).exists()) {
                        Process p = Runtime
                            .getRuntime()
                            .exec("rundll32 url.dll,FileProtocolHandler C:\\\\Users\\\\Abhinav
D\\\\Desktop\\\\my_pro\\\\pdf_t\\\\1.mp4");
                
```

```
    p.waitFor();

} else {

    System.out.println("File is not exists");

}

System.out.println("Done");

} catch (Exception ex) {

    ex.printStackTrace();

}

});

btnNewButton.setBounds(75, 166, 287, 121);

frame.getContentPane().add(btnNewButton);

JButton btnPdf = new JButton("PDF");

btnPdf.setBackground(new Color(255, 235, 205));

btnPdf.setFont(new Font("Tahoma", Font.BOLD, 40));

btnPdf.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent e) {

        try {

            if ((new File("C:\\\\Users\\\\Abhinav D\\\\Desktop\\\\my_pro\\\\pdf_t\\\\11.pdf")).exists()) {

                Process p = Runtime
```

```
        .getRuntime()  
  
        .exec("rundll32 url.dll,FileProtocolHandler C:\\Users\\Abhinav  
D\\Desktop\\my_pro\\pdf_t\\11.pdf");  
  
        p.waitFor();  
  
    } else {  
  
        System.out.println("File is not exists");  
  
    }  
  
    System.out.println("Done");  
  
} catch (Exception ex) {  
  
    ex.printStackTrace();  
  
}  
  
});  
  
btnPdf.setBounds(475, 166, 287, 121);  
  
frame.getContentPane().add(btnPdf);  
  
frame.setVisible(true);  
}  
}
```

Module ChatServer.java

```
package virtuall_classroom;
```

```
import java.io.*;  
  
import java.util.*;  
  
import java.net.*;
```

```
import static java.lang.System.out;

public class ChatServer {
    Vector<String> users = new Vector<String>();
    Vector<HandleClient> clients = new Vector<HandleClient>();

    public void process() throws Exception {
        ServerSocket server = new ServerSocket(9999,10);
        out.println("Server Started...");
        while( true ) {
            Socket client = server.accept();
            HandleClient c = new HandleClient(client);
            clients.add(c);
        }
    }

    public static void main(String ... args) throws Exception {
        new ChatServer().process();
    }

    public void broadcast(String user, String message) {
        for ( HandleClient c : clients )
            if ( ! c.getUserName().equals(user) )
                c.sendMessage(user,message);
    }

    class HandleClient extends Thread {
        String name = "";
        BufferedReader input;
        PrintWriter output;
```

```
public HandleClient(Socket client) throws Exception {  
    input = new BufferedReader( new InputStreamReader( client.getInputStream() ) );  
    output = new PrintWriter ( client.getOutputStream(),true);  
    name = input.readLine();  
    users.add(name);  
    start();  
}  
  
public void sendMessage(String uname,String msg) {  
    output.println( uname + ":" + msg);  
}  
  
public String getUserName() {  
    return name;  
}  
public void run() {  
    String line;  
    try {  
        while(true) {  
            line = input.readLine();  
            if ( line.equals("end") ) {  
                clients.remove(this);  
                users.remove(name);  
                break;  
            }  
            broadcast(name,line);  
        }  
    }  
}
```

```
    }

    catch(Exception ex) {
        System.out.println(ex.getMessage());
    }

}

}
```

Module ChatClient.java

```
package virtuall_classroom;

import java.io.*;
import java.util.*;
import java.net.*;
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
import static java.lang.System.out;

public class ChatClient extends JFrame implements ActionListener {

    String uname;
    PrintWriter pw;
    BufferedReader br;
    JTextArea taMessages;
    JTextField tfInput;
    JButton btnSend,btnExit;
    Socket client;
```

```
public ChatClient(String uname,String servername) throws Exception {  
    super(uname);  
    this.uname = uname;  
    client = new Socket(servername,9999);  
    br = new BufferedReader( new InputStreamReader( client.getInputStream() ) );  
    pw = new PrintWriter(client.getOutputStream(),true);  
    pw.println(uname);  
    buildInterface();  
    new MessagesThread().start();  
}  
  
public void buildInterface() {  
    btnSend = new JButton("Send");  
    btnExit = new JButton("Exit");  
    taMessages = new JTextArea();  
    taMessages.setBackground(new Color(222, 184, 135));  
    taMessages.setRows(10);  
    taMessages.setColumns(50);  
    taMessages.setEditable(false);  
    tfInput = new JTextField(50);  
    JScrollPane sp = new JScrollPane(taMessages, JScrollPane.VERTICAL_SCROLLBAR_AS_NEEDED,  
        JScrollPane.HORIZONTAL_SCROLLBAR_AS_NEEDED);  
    getContentPane().add(sp,"Center");  
    JPanel bp = new JPanel( new FlowLayout());  
    bp.add(tfInput);  
    bp.add(btnSend);  
    bp.add(btnExit);
```

```
getContentPane().add(bp,"South");

btnSend.addActionListener(this);

btnExit.addActionListener(this);

setSize(934,726);

setVisible(true);

pack();

}

public void actionPerformed(ActionEvent evt) {

if ( evt.getSource() == btnExit ) {

pw.println("end");

System.exit(0);

} else {

pw.println(tfInput.getText());

}

}

public static void main(String ... args) {

String name = JOptionPane.showInputDialog(null,"Enter your name :","Username",

JOptionPane.PLAIN_MESSAGE);

String servername = "localhost";

try {

new ChatClient( name ,servername);

} catch(Exception ex) {

out.println( "Error --> " + ex.getMessage());

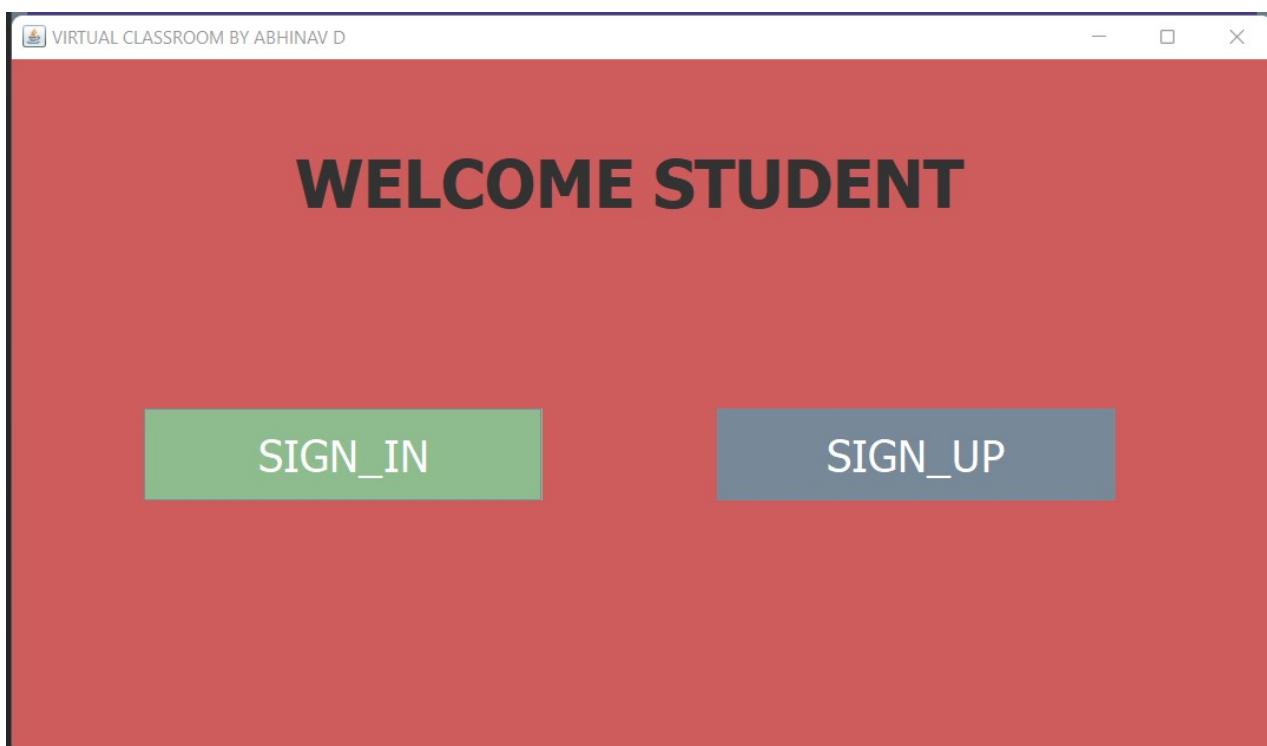
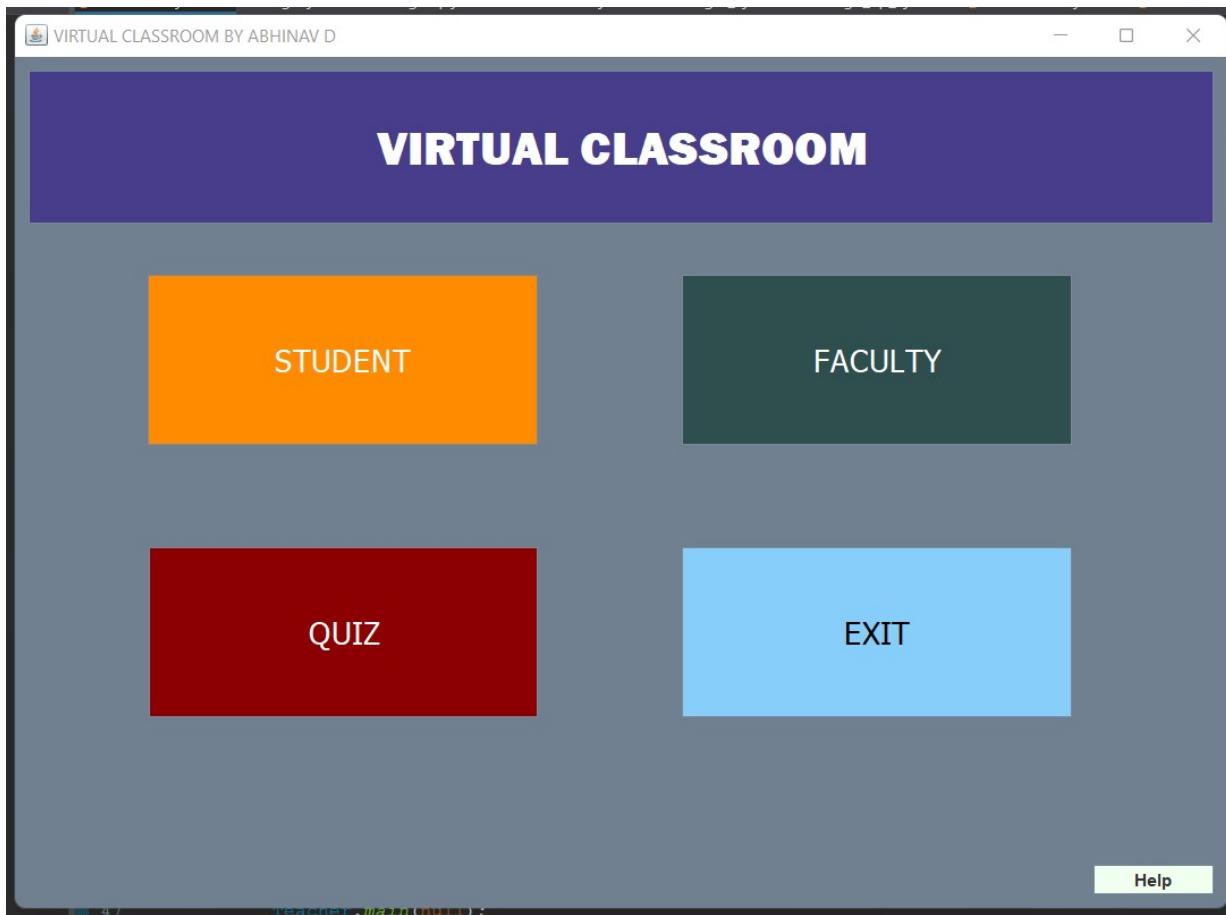
}

}
```

```
}
```

```
class MessagesThread extends Thread {  
    public void run() {  
        String line;  
        try {  
            while(true) {  
                line = br.readLine();  
                taMessages.append(line + "\n");  
            }  
        } catch(Exception ex) {}  
    }  
}
```

RESULT



The screenshot shows a Java application window titled "Registration Form in Java". The title bar includes standard window controls (minimize, maximize, close). The main window has a teal header with the title "Sign Up". Below the header is a form with seven input fields:

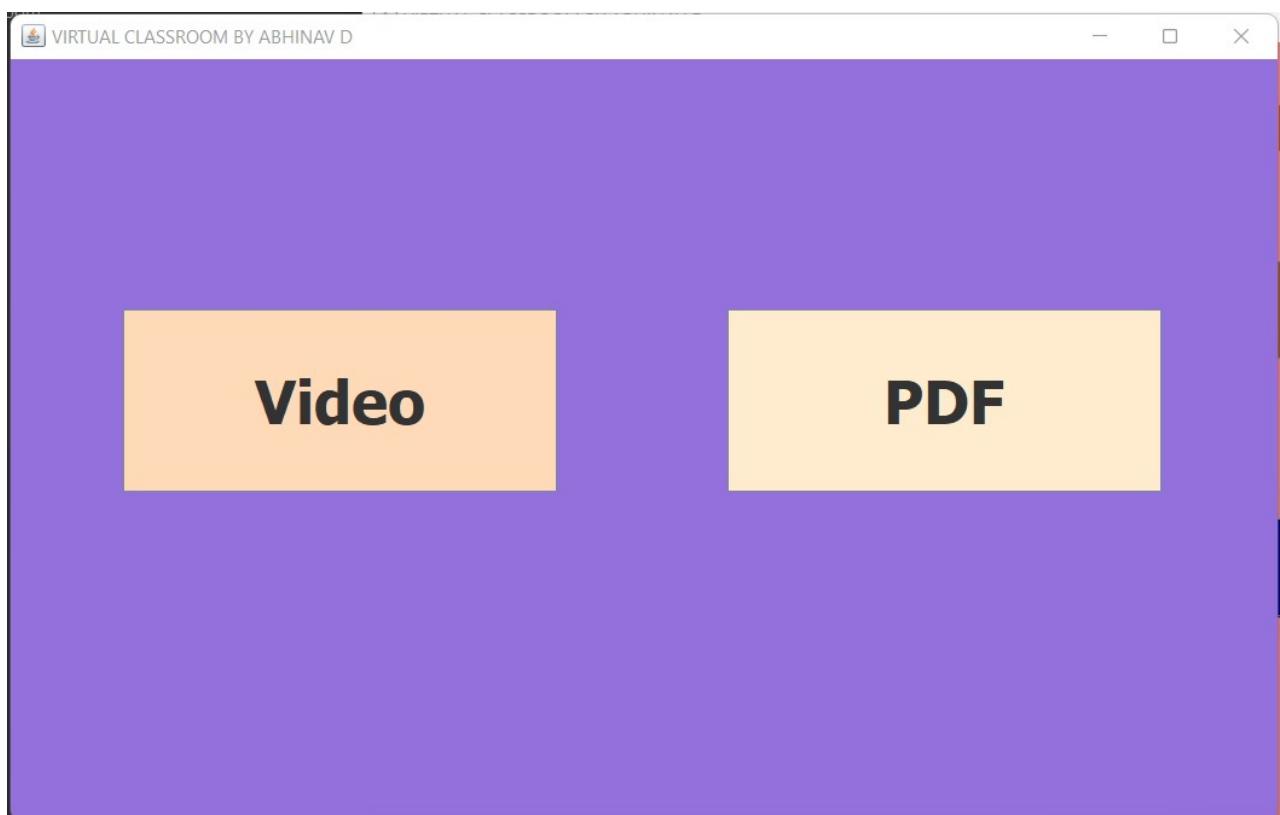
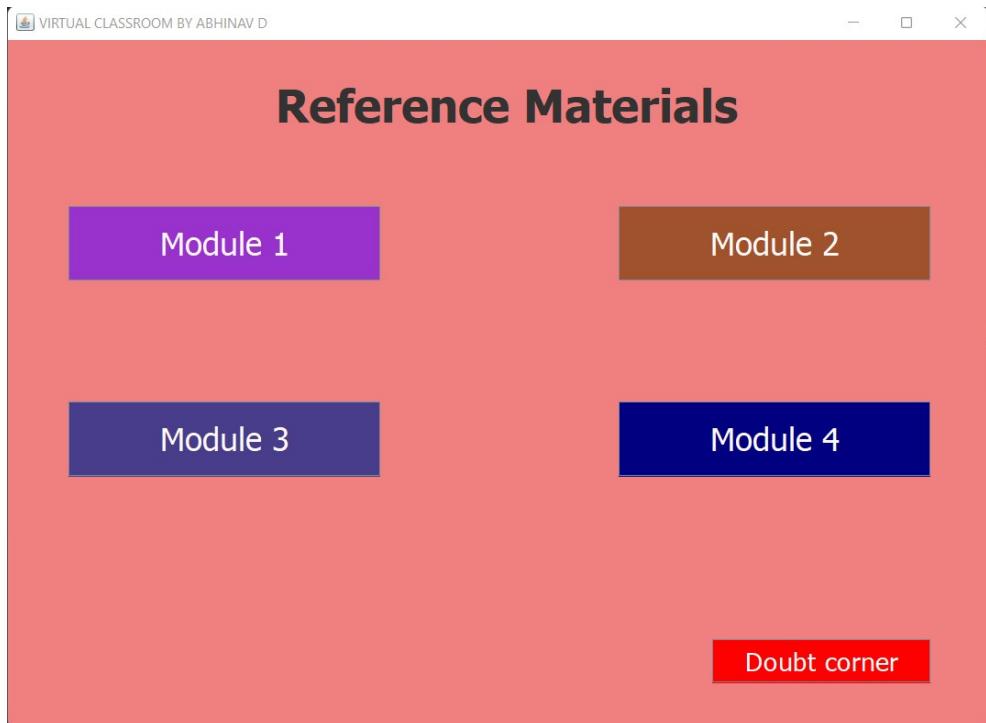
Name:	Abhinav
Email-ID:	abcd@gmail.com
Create Password:	***
Confirm Password:	***
Country:	India
State:	Karnataka
Phone No:	1234

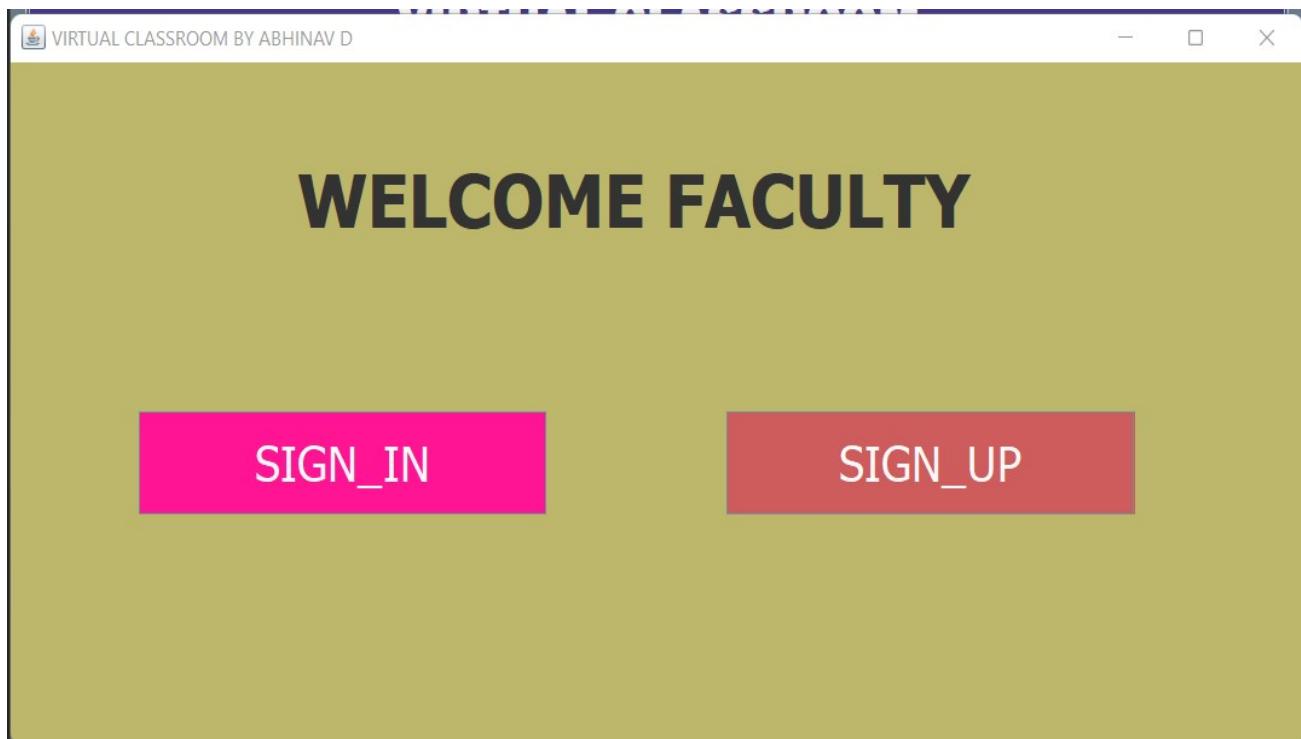
At the bottom left is a "Clear" button, and at the bottom right is a red "Submit" button. A message dialog box titled "Message" is displayed in the center, showing an info icon and the text "Data Saved Successfully" with an "OK" button.

The screenshot shows a Java application window titled "VIRTUAL CLASSROOM BY ABHINAV D". The title bar includes standard window controls. The main window has a light brown header with the title "Sign In". Below the header is a form with two input fields:

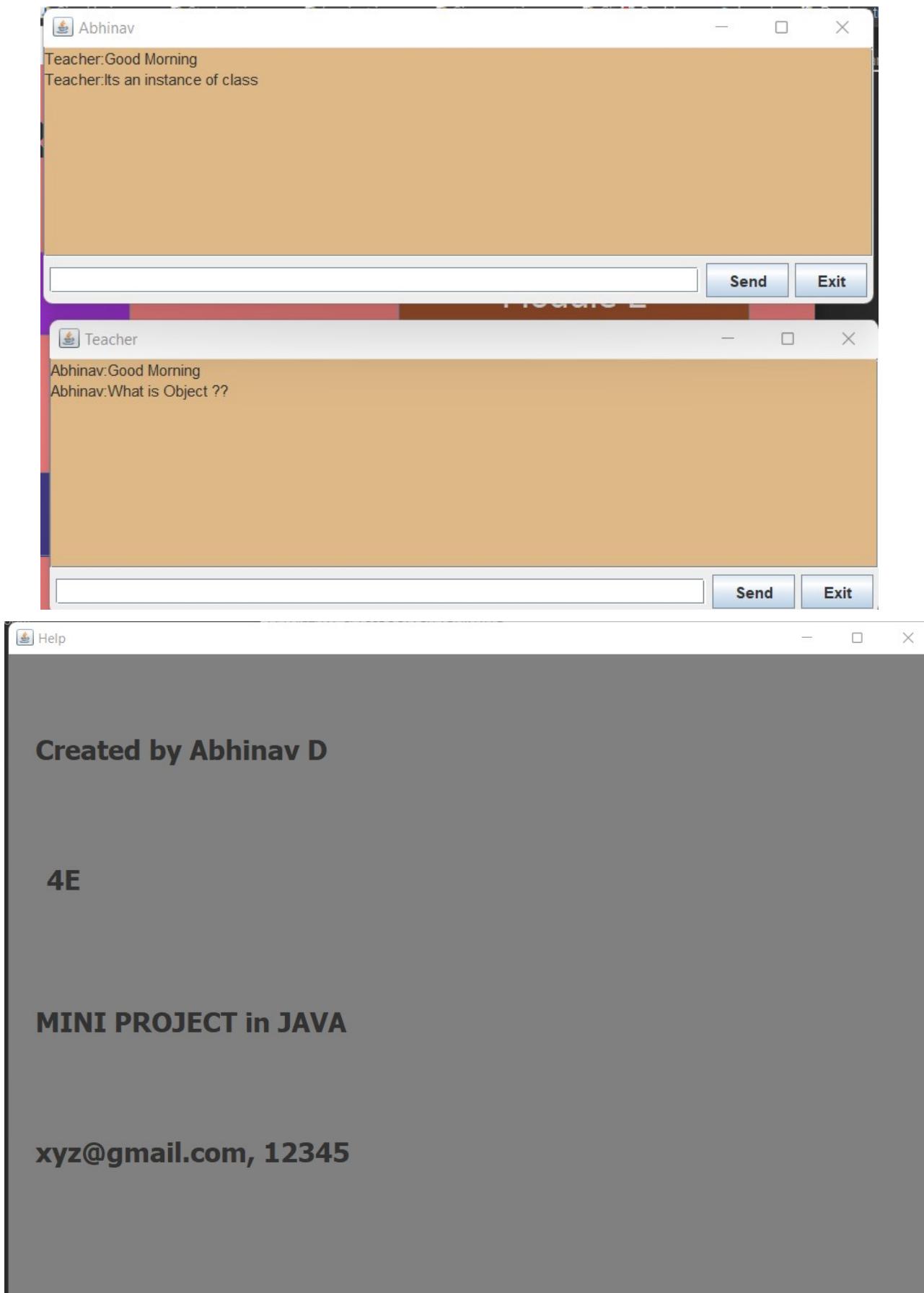
Enter Email:	Abhinav
Enter Password:	***

At the bottom right is an orange "Submit" button.





A screenshot of a Windows application window titled "Online Test Of Java". It displays a question: "Que10: Which of the following is used to find and fix bugs in the program?". Below the question are four options: "JDK", "JIT", "JDB", and "JVM". The "JDB" option has a radio button selected. A message box titled "Message" appears, containing the text "correct ans=10" and an "OK" button.



CHAPTER 7

CONCLUSIONS

Thus, this project titled “VIRTUAL CLASSROOM” has been successfully implemented using the concepts of OBJECT ORIENTED PROGRAMMING and the approach of using Swing features .The project achieves its aim to provide a virtual platform for both Students and Faculty. This project not only allowed me to apply the concepts of OOPS but also helped in gaining my knowledge about some advanced java concepts which will surely prove to be beneficial.

CHAPTER 8

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