



## Syllabus

### List of Experiments

1 Introduction To Swing, MVC Architecture, Applets, Application and pluggable Look and feel, Basic Swing components : Text fields, Buttons , Toggle Buttons , Checkboxes and Radio Buttons

2 Java database Programming, java.sql package , JDBC driver, Network programming with Java.net Package, Client and Server Program , Content and Protocol handlers

3 RMI architecture, RMI registry , writing distributed applications with RMI, Naming Services, Naming and directory services , overview of JNDI , object serialization and Internationalization

4 J2EE architecture, Enterprise application concepts , J2EE platforms , HTTP protocol, web application , web container and application server



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5

Server side programming with Java servlet, HTTP and Servlet, Servlet API, life cycle, configuration and context, request and response objects, session handling and event handling, Introduction to filters with writing simple filter application.

6

JSP architecture, JSP page life cycle, JSP elements, Expression language, Tag extensions API, Tag handlers, JSP fragments, Tag files, JSTL, Core Tag library, overview of XML Tag library, SQL tag library and functions tag library



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Course outcome

CO-SCS4-24-01 List all UI components and create UI widgets and apply event handling using abstract windowing Toolkit (AWT) & Swing.

CO-SCS4-24-02 Discuss and apply Java database Connectivity (JDBC) to access databases through Java programs

CO-SCS4-24-03 Analyze and formulate remote methods in an applications using remote method Invocation (RMI)

CO-SCS4-24-04 Select and create appropriate multi-tier approach from stateful, stateless and entity beans.

CO-SCS4-24-05 Build dynamic web pages using Servlets and JSP.



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Reference booksBook Title / Authors / Publications

- 1 The complete reference Java 2 : (10<sup>th</sup> edition)  
- Herbert Schildt, Tata MC Graw Hill.
- 2 Object-oriented Programming with C++ and Java  
: Debasis Samanta, Patience Hall of India
- 3 James Keogh "Complete reference J2EE",  
Tata MCGraw Hill
- 4 Black Book, "Java server programming  
J2EE", First edition, Dream tech publisher
- 5 Kathy Sierra, "The J2EE Tutorial",  
First E D, Addison Wesley publisher
- 6 Jeff Linwood and Dave Minter, "Hibernate"  
Second editor , Apress
- 7 Maydene Fisher, Jon Ellis, Jonathan Bruce Addison  
Wesley, "JDBC API tutorial and reference" third edition  
Guilherme Zambon, Apress
- 8 Page No. ....



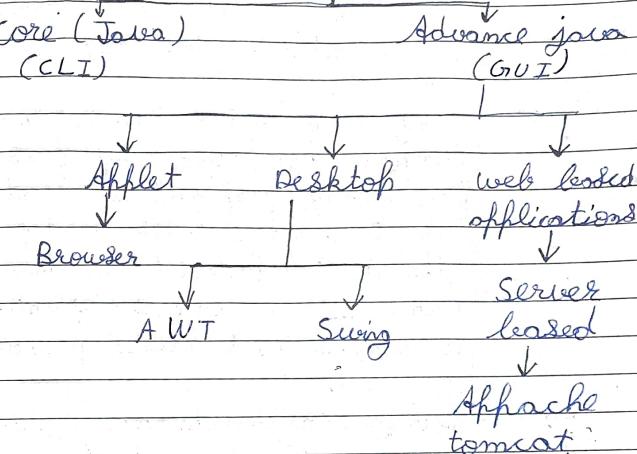
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Class hierarchy diagramJava application

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Q 1 what is swing explain in detail with example ( write a java program to create a button, text field, radio button toggle button and combobox )

→ Swing is a part of Java's standard library that provides a set of components for building graphical user interfaces (GUI). It's built on top of the AWT (Abstract Window Toolkit) and offers a more sophisticated set of widgets and better performance.

→ Swing components are lightweight meaning they are not dependent on native system's GUI toolkit, allowing more consistent look and feel across different platforms.

sample A JButton is a clickable graphical component that allows users to perform an action such as submitting a form



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Swing components

Object

J Text

J Text Field

Component

J Combobox

J Text Area

Container

J Label

Window J Container

J List

Frame J Dialog

J Menu Bar

J Frame J Dialog

J OptionPanel

J Panel

J Scroll Bar

Abstract Button

J Button



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key features of swing

- (1) Lightweight component unlike AWT component which are heavyweight and depends on native system's graphics, swing components are lightweight and drawn entirely by Java.
- (2) Pluggable look and feel: Swing allows developers to customize the appearance of their applications through different look and feel option.
- (3) Rich set of component: Swing provides wide range of UI components, including buttons, text fields, tables and more.
- (4) Event handling: Swing has a robust event handing model allowing easy interaction for user.

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Java program for implementing basic swing component

```
import java.awt.*;
```

```
public class Assignment {
    public static void main (String [] args) {
        JFrame f = new JFrame ("User registration
form by Nitaj");
        f.setSize (400, 400);
        f.setLayout (null);
```

```
JLabel l = new JLabel ("Name:");
l.setBounds (20, 20, 100, 30);
```

```
JTextField nf = new JTextField (15);
nf.setBounds (120, 20, 200, 30);
```

```
JRadioButton b1 = new JRadioButton ("Male");
b1.setBounds (120, 60, 100, 30);
```

```
JRadioButton b2 = new JRadioButton ("Female");
b2.setBounds (220, 60, 100, 30);
```

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Button Group gender Group = new  
 JButtonGroup();  
 genderGroup.add(lb1);  
 genderGroup.add(lb2);

JToggleButton sb = new JToggleButton  
 ("Accept");  
 sb.setBounds(110, 150, 80, 30);  
 sb.setSelected(false);

String[] roles = {"Admin", "user", "Guest"};

JComboBox < String > role = new  
 JComboBox(<>(roles));

role.setBounds(80, 100, 200, 30);  
 f.add(l);  
 f.add(nf);  
 f.add(lb1);  
 f.add(lb2);  
 f.add(sb);  
 f.add(role);  
 f.setVisible(true); };



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OUTPUT



user registration Form by Nitaj

Name

 Male Female

Admin



Select