



# Techno College of Engineering Agartala

An Engineering College Approved by AICTE, MHRD, Govt. of India

Affiliated to Tripura University (A Central University),

Department of Computer Science and Engineering



## List of Laboratory Experiments

Advanced Java Lab							
Course Code	Hours / Week				Maximum Marks		
PC CS 605	L	T	P	C	CIA	SEE	Total
	0	0	2	1	40	60	100
Number of classes: 24 Hours				Prerequisites: Java Programming Lab, Object Oriented Programming			
Branch: CSE				Semester: VI			
<b>Course overview:</b> This laboratory course focuses on the design and implementation of advanced Java applications, emphasizing practical skills in GUI development, client/server communication, distributed computing, and enterprise-level web solutions. Students will use essential Java frameworks and APIs such as Swing, AWT, Socket programming, RMI, JavaBeans, Servlets, JSP, and EJB. The course balances the development of standalone interfaces and distributed web applications, preparing learners for real-world programming challenges and enterprise-grade software systems.							
<b>Course objectives:</b> <ol style="list-style-type: none"><li>Design and construct user-friendly graphical user interfaces (GUIs) using Java's Swing framework and associated components.</li><li>Develop competent client/server network applications employing Java socket programming to facilitate real-time communication.</li><li>Build distributed systems leveraging object-oriented programming, using technologies such as Remote Method Invocation (RMI) and JavaBeans for modular and reusable software components.</li><li>Understand, implement, and explain advanced server-side programming through the use of Java Servlets, Java Server Pages (JSP), and Enterprise JavaBeans (EJB), covering key enterprise application patterns and practices.</li></ol>							
<b>Course outcomes:</b>							
CO Number	CO Description						K-level
CO-1	Design and Develop Swing-based GUI components						K-3
CO-2	Examine client/server applications using socket programming						K-4
CO-3	Develop distributed applications using RMI and component-based Java software using JavaBeans						K-3
CO-4	Explain server-side programs in the form of Servlets and enterprise applications						K-2/K-4
Sl. No.	EXPERIMENT NAME						CO
1.	Implementation of multithread application using Java						CO-1
2.	Create a full set of UI widgets and other components, including windows, menus, buttons, checkboxes, text fields, scrollbars and scrolling lists, using Abstract Windowing Toolkit (AWT) & Swings						CO-1
3.	Apply Event Handling on AWT and Swing components						CO-1
4.	Implementation of Socket program for chat application						CO-2



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5.	Invoke the remote methods in an application using Remote Method Invocation(RMI)	CO-3
6.	Develop java Applet program to accept two numbers from user and output the sum, difference in the respective text boxes	CO-1
7.	Servlet program to implement and demonstrate get () and post () methods (using HTTP Servlet class).	CO-4
8.	Session tracking for a hit count using Java Servlet	CO-4
9.	Establishing Communication between Applet and Servlet	CO-4
10.	Create three tier application using Servlet by incorporating Java Database Connectivity inside Servlet to save data in a table	CO-4
11.	Creating Jakarta (formerly Java) Server Pages (JSP) program to implement attributes of directive tags	CO-4
12.	Cookies and session management using Jakarta (formerly Java) Server Pages (JSP)	CO-4
13.	Create Model-View-Controller (MVC) application with Struts framework: using Servlet/JSP	CO-4
14.	Creating Stateless and Stateful Session Beans	CO-4
15.	Enterprise JavaBeans (EJB) Application that demonstrates Entity Bean	CO-4
16.	Enterprise JavaBeans (EJB) Application that demonstrates Session Bean	CO-4