



## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA

KAKINADA – 533 003, Andhra Pradesh, India

### DEPARTMENT OF INFORMATION TECHNOLOGY

II Year – II Semester		L	T	P	C
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<b>JAVA PROGRAMMING LAB</b>					

#### Course Objectives:

The aim of this lab is to

- Practice programming in the Java
- Gain knowledge of object-oriented paradigm in the Java programming language
- Learn use of Java in a variety of technologies and on different platforms

#### Course Outcomes:

By the end of the course student will be able to write java program for

- Evaluate default value of all primitive data type, Operations, Expressions, Control-flow, Strings
- Determine Class, Objects, Methods, Inheritance, Exception, Runtime Polymorphism, User defined Exception handling mechanism
- Illustrating simple inheritance, multi-level inheritance, Exception handling mechanism
- Construct Threads, Event Handling, implement packages, developing applets

#### Exercise - 1 (Basics)

- Write a JAVA program to display default value of all primitive data type of JAVA
- Write a java program that display the roots of a quadratic equation  $ax^2+bx=0$ . Calculate the discriminant D and basing on value of D, describe the nature of root.
- Five Bikers Compete in a race such that they drive at a constant speed which may or may not be the same as the other. To qualify the race, the speed of a racer must be more than the average speed of all 5 racers. Take as input the speed of each racer and print back the speed of qualifying racers.

#### Exercise - 2 (Operations, Expressions, Control-flow, Strings)

- Write a JAVA program to search for an element in a given list of elements using binary search mechanism.
- Write a JAVA program to sort for an element in a given list of elements using bubble sort
- Write a JAVA program to sort for an element in a given list of elements using merge sort.
- Write a JAVA program using StringBuffer to delete, remove character.

#### Exercise - 3 (Class, Objects)

- Write a JAVA program to implement class mechanism. – Create a class, methods and invoke them inside main method.
- Write a JAVA program to implement constructor.

#### Exercise - 4 (Methods)

- Write a JAVA program to implement constructor overloading.
- Write a JAVA program implement method overloading.

#### Exercise - 5 (Inheritance)

- Write a JAVA program to implement Single Inheritance
- Write a JAVA program to implement multi level Inheritance
- Write a java program for abstract class to find areas of different shapes

#### Exercise - 6 (Inheritance - Continued)

- Write a JAVA program give example for “super” keyword.



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- b) Write a JAVA program to implement Interface. What kind of Inheritance can be achieved?

#### Exercise - 7 (Exception)

- a) Write a JAVA program that describes exception handling mechanism  
b) Write a JAVA program Illustrating Multiple catch clauses

#### Exercise – 8 (Runtime Polymorphism)

- a) Write a JAVA program that implements Runtime polymorphism  
b) Write a Case study on run time polymorphism, inheritance that implements in above problem

#### Exercise – 9 (User defined Exception)

- a) Write a JAVA program for creation of Illustrating throw  
b) Write a JAVA program for creation of Illustrating finally  
c) Write a JAVA program for creation of Java Built-in Exceptions  
d) Write a JAVA program for creation of User Defined Exception

#### Exercise – 10 (Threads)

- a) Write a JAVA program that creates threads by extending Thread class .First thread display “Good Morning “every 1 sec, the second thread displays “Hello “every 2 seconds and the third display “Welcome” every 3 seconds ,(Repeat the same by implementing Runnable)  
b) Write a program illustrating **isAlive** and **join ()**  
c) Write a Program illustrating Daemon Threads.

#### Exercise - 11 (Threads continuity)

- a) Write a JAVA program Producer Consumer Problem  
b) Write a case study on thread Synchronization after solving the above producer consumer problem

#### Exercise – 12 (Packages)

- a) Write a JAVA program illustrate class path  
b) Write a case study on including in class path in your os environment of your package.  
c) Write a JAVA program that import and use the defined your package in the previous Problem

#### Exercise - 13 (Applet)

- a) Write a JAVA program to paint like paint brush in applet.  
b) Write a JAVA program to display analog clock using Applet.  
c) Write a JAVA program to create different shapes and fill colors using Applet.

#### Exercise - 14 (Event Handling)

- a) Write a JAVA program that display the x and y position of the cursor movement using Mouse.  
b) Write a JAVA program that identifies key-up key-down event user entering text in a Applet.