



BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)
DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

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II Year I Semester

OBJECT-ORIENTED PROGRAMMING THROUGH JAVA LAB
(23CS3L03)

Course Objectives:

The aim of this course is to

- Practice object-oriented programming in the Java programming language
- Implement Classes, Objects, Methods, Inheritance, Exception, Runtime Polymorphism, User Defined Exception Handling Mechanism
- Illustrate inheritance, Exception handling mechanism, JDBC connectivity
- Construct Threads, Event Handling, implement packages, Java FX GUI

Experiments covering the Topics:

- Object Oriented Programming fundamentals- data types, control structures
- Classes, methods, objects, Inheritance, polymorphism,
- Exception handling, Threads, Packages, Interfaces
- Files, I/O streams, JavaFX GUI

Sample Experiments:

Exercise – 1:

- 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

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discriminate D and basing on value of D, describe the nature of root.

Exercise - 2

- 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 using StringBuffer to delete, remove character.

Exercise - 3

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

Exercise - 4

- 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 - 5

- Write a JAVA program give example for "super" keyword.
- Write a JAVA program to implement Interface. What kind of Inheritance can be achieved?
- Write a JAVA program that implements Runtime polymorphism

Exercise - 6

- Write a JAVA program that describes exception handling mechanism
- Write a JAVA program Illustrating Multiple catch clauses
 - Write a JAVA program for creation of Java Built-in Exceptions

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- Write a JAVA program for creation of User Defined Exception

Exercise - 7

- 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)
- Write a program illustrating is Alive and join ()
- Write a Program illustrating Daemon Threads.
- Write a JAVA program Producer Consumer Problem

Exercise – 8

- Write a JAVA program that import and use the user defined packages
- Without writing any code, build a GUI that display text in label and image in an Image View (use JavaFX)
- Build a Tip Calculator app using several JavaFX components and learn how to respond to user interactions with the GUI

Exercise – 9

- Write a java program that connects to a database using JDBC
- Write a java program to connect to a database using JDBC and insert values into it.
- Write a java program to connect to a database using JDBC and delete values from it

Online Learning Resources:

- <https://academy.oracle.com/en/oa-web-overview.html>

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