

CAP615:PROGRAMMING IN JAVA

Course Outcomes: Through this course students should be able to

CO1 :: define the structure and model of the Java programming language

CO2 :: understand the accessibility of fields and methods of an object through String and StringBuilder classes

CO3 :: apply multithreading concepts to implement inter-process communication

CO4 :: analyze object serialization with file handling and exception handling to overcome run-time errors

CO5 :: develop applications using database connectivity to perform CRUD operations

Unit I

Introduction to Java : basic java concepts, JDK, JRE and JVM, wrapper classes, inner and nested classes, working with arrays and strings, String, StringBuffer and StringBuilder classes, access specifiers, inheritance

Unit II

Collection Framework : ArrayList class, ListIterator interface, LinkedList class, TreeSet class, PriorityQueue class, comparable and comparator, Properties class, Lambda expressions

Unit III

Multithreading : implementing multithreading, life cycle of a thread, thread communication, suspending, resuming, deadlock and stopping threads, thread synchronization, handling exceptions during multithreading

Unit IV

Swings and Layouts : JButton class, JRadioButton class, JTextArea class, JComboBox class, JTable class, JColorChooser class, JProgressBar class, JSlider class, layout manager, Border Layout, Grid Layout, Flow Layout, Box Layout, Card Layout

Unit V

Managing data using JDBC : introduction to JDBC, connectivity with database, CRUD operations, Connection interface, Statement interface, ResultSet interface, PreparedStatement, ResultSetMetaData, DatabaseMetaData

Unit VI

Network Programming : java network terminology, socket classes, server socket classes, URL class, URL connection class, datagram socket class, java socket programming

Text Books:

1. JAVA: THE COMPLETE REFERENCE by HERBERT SCHILDT, Tata McGraw Hill, India

References:

1. INTRO TO JAVA PROGRAMMING (COMPREHENSIVE VERSION) by Y. DANIEL LIANG, Pearson Education India
2. PROGRAMMING WITH JAVA by E BALAGURUSAMY, Tata McGraw Hill, India