PIT5I102 ADVANCED JAVA PROGRAMING

Module1:-
An introduction to Network Programming.
Basics of Networking, Introduction to Socket Programming, Remote Method Invocation, Java Mail API, A small chatting application using Network Programming.
Introduction to Web Application and its programming.
Description about Web application, Client, Server (Apache Tomcat/ WebLogic/ GlassFish), An Introduction to client side programming (HTML5/CSS3/JavaScript/JQuery), An Introduction to XML/JSON.

Module2:-
Basics of JDBC
Introduction to JDBC, Need of JDBC, JDBC Drivers (4 types), Architecture of JDBC, Components of JDBC (Classes and Interfaces).
Programming with JDBC
Creating a DATABASE (MS- ACCESS/ORACLE/MySQL (for Type-3 and Type-4 connection), First Program to connect to the DATABASE created, Loading the Driver, Establishing the Connection, Creating Statements (Statement/PreparedStatement/CallableStatement), Executing a SQL Query, Different types of SQL Queries, Simple Statement, Atomic Statement, Pre-Compiled Statement, SQL Statements for stored Procedures.
JDBC Program to retrieve data from DATABASE.
Introduction to Result Set, Result Set with Statement Interface, Result Set with Prepared Statment Interface, Bidirectional Result Set, Result Set Scroll ability Type, Result Set Updatabiltiy Type, Updating data to the database using Result Set, Result Set Metadata, Executing Stored Procedures Using Callable Statement.

Module3:-
Introduction to Servlets.
What is Servlet, Advantage of Servlet Over Applets and CGI, Strengths of Servlet, Architecture of Web Application, Web Servers and its Containers, Role of servlet in Web application development, Understanding servlet-api, Understating HTTP protocol and communication between HTML-SERVLET.
Getting Deep to Servlets.
Types of Servlet, Difference between HttpServlet and GenericServlet, Life cycle of Servlets and different life cycle methods, Difference between doGet() and doPost(), Servlet Generating Html output, Collecting Client submitted data in a Servlet.
Servlet communications.
Servlet to DBMS communication using type-4 connection, Servlet to DBMC communication using JDBC connection pooling, Servlet communication with other servlets (Servlet Chaining), Servlet communication with JSP or HTML page (sendRedirect(), Difference between sendRedirect() and RequestDispatcher forward(), Understanding ServletConfig.
Conclusion to Servlets.
Servlet Filters and wrappers, Servlet Listeners, Session Tracking, Cookies, HttpSession, HTML hidden form filed element, URL rewriting, Annotation based servlet programs, Web Security with servlets, Servlet code for file uploading and downloading, Servlet code for mailing.

Module4:-
Java Server Pages: -
Introduction to JSP, Scope of JSP, Anatomy of a JSP program, Execution of a JSP program, Significance of JSP Engine, Built in objects of JSP, Significance of JSP Elements, Scripting Elements, Scriptlets, Declaration, Expression, Directives and Action Elements, Page Directive, Include Directive, Taglib Directive, Forward action element, Include, Param, useBean with introduction to beans, setProperty, getProperty
Miscellaneous
Introduction to JNDI, Introduction to web services (SOAP/SOA), Rest API, An introduction to JSTL, CORBA Architecture, Facelets, JSF, AJAX Programming, Struts/Springs, Hibernates.

Text book:-
1. Advanced Java Programming, Uttam K. Roy, Oxford University Press.

Reference Book:-
1. Black book, Kogent Learning Solution Inc.
2. Java 2: The Complete Reference by Herbert Schildt, Fifth Edition Paperback.