

BVSD 5.1: Java Programming

Unit I

Introduction, Operator, Data type, Variable, Arrays, Control Statements, Class, Objects Methods, Method Overloading, Method Overriding, Constructors Inheritance. String Handling, Package and Interface, Exception Handling, Multithread Programming, File Handling, Java Applet

Unit II

Event Handling, Adapter Classes, Introduction to AWT, AWT Controls, Layout Managers, Menus, Images, Graphics, Networking (Datagram Socket and TCP/IP Based Server Socket), Java.util Package: Collections and Maps

Unit III

Creating a Swing Applet and Application, Programming using Panes, Pluggable Look and feel, Labels, Text fields, Buttons, Toggle buttons, Checkboxes, Radio Buttons, View ports, Scroll Panes, Scroll Bars, Lists, Combo box, Progress Bar, Menus and Toolbars, Layered Panes, Tabbed Panes, Split Panes, Layouts, Windows, Dialog Boxes, Inner frame, JTable.

Unit IV

JDBC: The Connectivity Model, JDBC/ODBC Bridge, java.sql package, Connectivity to remote database, Navigating through multiple rows retrieved from a database.

Recommended Texts:

1. The Complete Reference JAVA2: Naughton, Schildt (TMH)
2. Programming in JAVA: Balagurusamy (TMH)
3. Java2 Black Book: Steven Holzner (Dreamtech)
4. Java Programming by Example: Sharma and Sharma (Cambridge University Press)
5. Java Programming-A Practical Approach : C.Xavier (TMH)

BVSD 5.2: Software Engineering

Unit I

Basics of Software Engineering; Software Estimation: Size, Effort, and Cost; Software Characteristics; Software Quality Attributes; Software Development Lifecycle; Models: Waterfall, Prototype and Spiral Model.

Unit II

Statement of System Scope; Isolation of Top Level Processes and Entities and their Allocation to Physical Elements; Refinement and Review.

Analyzing a Problem; Creating a Software Specification Document; Review for Correctness, Consistency, and Completeness.

Unit III

Basic Concept of Software Design; Application of Fundamental Design Concept for Data; Architectural and Procedural Designs; Object Oriented Design Paradigm; Top- down and Bottom-up Design; Coupling & Cohesion; Creating Design Document: Review of Conformance to Software Requirements and Quality. Relationship between Design and Implementation, Implementation Issues and Programming Support Environment, Coding the Procedural Design, Good Coding Style and Review of Correctness and Readability.

Unit IV

Testing Objectives; Types of Testing: Unit, Integration, Acceptance, and Structural Testing; Maintenance as Part of Software Evaluation; Reasons for Maintenance; Types of Maintenance (Perceptive, Adoptive, Corrective); Techniques for Maintenance; Overview of Case Tools.

Recommended Texts:

1. Software Engineering: K.K.Aggarwal&Yogesh Singh(New Age International)
2. Software Engineering: I.Sommerville(Addison Wesley)
3. Software Engineering-An Engineering Approach: James Peter, W. Pedrycz (John Wiley & Sons)
4. Essentials of Software Engineering: Tsui, Karam, and Bernal (Jones and Bartlett Learning)
5. An Integrated Approach to Software Engineering: PankajJalote (Springer)

BVSD 5.3: Data Warehousing and Mining

Unit I

Introduction, Relational Databases, Data Warehouses, Transactional databases, Advanced database Systems and Application, Data Mining Functionalities, Classification of Data Mining Systems, Major Issues in Data Mining.

Unit II

Introduction, A Multidimensional data Model, Data Warehouse Architecture, Data Warehouse Implementation, Data Cube Technology, From Data warehousing to Data Mining.

Unit III

Data Cleaning, Data Integration and Transformation, Data Reduction, Discretization and concept Hierarchy Generation. Data Mining Primitives, DMQL, Architectures of Data Mining Systems.

Unit IV

Association Rule Mining, Single – Dimensional Boolean Association Rules, Multilevel Association Rules from Transaction Databases, Multi Dimensional Association Rules from Relational Databases, From Association Mining to Correlation Analysis, Constraint – Based Association Mining.

Recommended Texts:

1. Jiawei Han & Micheline Kamber - Data Mining Concepts & Techniques Publisher Harcourt India. Private Limited.
2. G.K. Gupta – Introduction to Data Mining with case Studies, PHI, New Delhi – 2006.
3. A. Berson & S.J. Smith – Data Warehousing Data Mining, COLAP, TMH, New Delhi – 2004
4. H.M. Dunham & S. Sridhar – Data Mining, Pearson Education, New Delhi, 2006.

BVSD 5.4: E-Commerce & M-Commerce

Unit I

Meaning and concept of E-Commerce; History of E-Commerce; Traditional Commerce and E-Commerce; Different Types of E-Commerce – B2B, B2C, C2C, B2E, G2C; Need and Role of E-Commerce; Advantages and Disadvantages of Ecommerce, Impact of E-commerce on Business.

Unit II

Introduction to payment system; Online Payment System – prepaid e-payment service, postpaid e- Payment system; SET protocol; Operational, Credit & legal risk of repayment system. Smart card, credit card, magnetic strip card, E-Checks, Credit/Debit card based EPS, online Banking. Electronic Data Interchange, EDI and Paperless trading, EDI architecture, EDI standards. E-Commerce Threats; Security of Clients and sever; Security Issues on Web; Importance of Firewall; Components of Firewall; Security Threats; Transaction Security; Network Security.

Unit III

Growth of Mobile Commerce, Infrastructure of M-Commerce , Types of Mobile Commerce Services, Technologies of Wireless Business, Technologies for Mobile Commerce, Mobile Marketing & Advertisement, Wireless Applications , Wireless Devices For Mobile Commerce, Wireless Personal and Local Area Networks.

Unit IV

Wireless Application Protocol, WAP technology, Wireless Spectrum, WAP, Origins of WAP, WAP Architecture, Wireless Datagram Protocol (WDP), Short Message Services, General Packet Radio Service (GPRS), 3G & 4 G Wireless Technology.

Recommended Texts:

1. Electronic Commerce – Framework Technologies and Applications: Bharat Bhasker(TMh)
2. Doing Business on the Internet E-Commerce- Electronic Communication for Business: S. Jaiswal (Galgotia Publications)
3. Frontiers of Electronic Commerce: Kalakota et al (Addison Wesley)
4. E-Business and Commerce- Strategic Thinking and Practice: BrahmCanzer (Biztantra)
5. Frontiers of Electronic Commerce: Ravi Kalakota and Andrew Winston (Addison Wesley)
6. E-Commerce- The Cutting Edge of Business: Bajaj and Nag (TMh)

BVSD 6.1: Mobile Application Development using Android

Unit I

Introduction to Eclipse, IDEs and ADT plug-in; Using the Emulator; Android Stack; Different Android Versions; Installing Android SDK and Updating SDK Components; Android vs. Other Mobile Platforms.

Unit II

Application Development Life Cycle, Application Components, Activity life cycle, Manifest File, Layout XML Code, Java based layout vs. XML based layout.

Unit III

Using Different Layouts – Linear Layout and Table Layout etc., Drawable Resources, Resolution and Density Independence, Working with Common Widgets, Working with ListView and Adapters, Creating and using Option Menu, Working with Preferences, Working with Dialogs and Toasts, Working with Graphics and Animation. Introducing Intents: Intents, Intent filters, Invoking activities by class name and URI, working with Tabs and Fragments.

Unit IV

Using File System, Introducing SQLite on Android, Database Connectivity, Cursors and Content Values, Using ContentProvider to Share Data, Using Location based Services, Telephony and SMS services, Bluetooth, Network and WiFi, Multimedia and Camera, Accessing Internet and Web Services from Android App.

Recommended Texts:

1. Android Developer Tools Essentials: Mike Wolfson(Oreilly)
2. Learn Android app Development: Wallace Jackson (Apress)
3. Head First Android Development: Jonathan Simon (Oreilly)
4. SamsTeach Yourself Android Development: Darcey&Conder (SAMS)

BVSD 6.2: Advanced Java Programming

Unit I

Application Builder Tools, The Bean Developer Kit (BDK), JAR Files, Introspection, Developing a Simple Bean, Using Bound Properties, Index Properties, The Java Beans API, Session Beans, Entity Beans.

Unit II

Eclipse IDE, Net Beans, Introduction to Enterprise Java beans (EJB) and RMI (Remote Method Invocation), Simple Client-Server Application using RMI.

Unit III

Servlet basics, Servlet API Basic, Life cycle of a Servlet, Running Servlet, Debugging Servlets, Thread-safe Servlets, HTTP Redirects, Cookies.

Unit IV

Java Server Pages Overview, JSP Application Design, Tomcat Server, JSP Objects, Declaring Variables and Methods, Debugging, Sharing Data between JSP Pages, Session, Application: Data Base Action, Development of Java Beans in JSP. Planning and Designing of a Commercial Web Application Development.

Recommended Texts :

1. Java Servlet Programming: Jason Hunter (O'Reilly)
2. Inside Servlets: Dustin Callway (Addison Wesley)
3. Java Enterprise Edition: Mark Wutica (QUE)
4. Java2 Black book: Steven Holzner (Dreamtech)
5. Beginning Hibernate: Jeff Linwood & Dave Mintz (Apress)
6. Java Server Programming: Java EE5 Black Book: Kogent Solutions (Dreamtech)
7. Spring 3.0 Black Book: PrabhuSunderaraman (Wiley India)

BVSD 6.3: Network and Information Security

Unit I

Computer Security, Threats to Security, Computer System Security, Vulnerability and Threats: Viruses, Worms, Trojan Horse, Bombs, Trap Doors, Spoofs, Email Virus, Macro Viruses, Remedies, Intruders, Malicious Software, Firewalls, Network Denial of Service Attack.

Unit II

Network Topologies, Internet, Intranet, Network Architectures, Performance Issues, Scalability, Bridging and Routing, Cabling Infrastructure, Hubs, Traffic Management, WAN Structures, Packet Switching, Circuit Switching, Development of SMDS/ATM.

Unit III

Distributed Processing Systems, Distributed Applications and Distributed Data, Client/Server Architecture, Advantages and Disadvantages of Distributed Processing Systems.

Unit IV

Introduction, Concept of Backup, User Access, Control, Encryption, and Security Certificates, Digital Signatures, Electronic Payment Systems. Traffic Modeling and Congestion Control, Examples of Tools/Protocols for Network Management, Response and other Performance Issues.

Recommended Texts:

1. Cryptography and Network Security: Atul Kahate (McGraw Hill)
2. Cryptography and Network Security: Principles and Practice: Stallings (Prentice Hall)
3. Cryptography and Network Security: Behrouz A Forouzan (McGraw Hill)
4. Computer Networks: Andrew Tanenbaum (Pearson Publications)

BVSD 6.4: Software Testing & Quality Management

Unit I

Need of Software Testing; Basic Concepts – Errors, Faults, Defects, Failures, Test Bed; Levels of Testing; Top-Down versus Bottom-Up Testing; Types of Testing – Black Box, White Box, Gorilla, Beta, Field, Performance, Stress and Acceptance Testing.

Unit II

Boundary Value Testing, Equivalence Class Testing, Decision Table based Testing, Retrospection. Path Testing, Data Flow Testing, Retrospection

Unit III

Issues, Class Testing, Object Oriented Integration Testing, Object Oriented System Testing.

Unit IV

Introduction to Software Quality, Quality Attributes, Quality Assurance, Quality Control and Assurance; Methods of Quality Management; Cost of Quality; Quality Factor; Quality Management & Project Management; Software Quality Metrics-TQM, Six Sigma, ISO, SQA Model.

Recommended Texts:

1. Introducing Software Testing: Louise Tamres (Pearson Education)
2. Software Testing Techniques: Borris Beizer (Dreamtech Press)
3. Practical Software Testing: Burnstein (Springer Publication)
4. Software Testing- A Craftman's Approach: Paul C. Jorgensen (CRC Press)
5. Effective Methods for Software Testing: William Perry (Wiley Publication)
6. Software Testing: Ron Patton (Pearson Education)