115CAL02 – OBJECT ORIENTED PROGRAMMING LAB USING C++

LIST OF EXPERIMENTS

1. Program to practice Class creation, method definition and method invocation

2. Implement Constructor concept through simple programs

3. Practice the concept of function overloading

4. Write a C++ program to demonstrate unary operator overloading and binary operator overloading.

5. Practice function template with simple example.

6. Implement template and overloading concept through C++ programming.

7. Practice types of inheritance with suitable example

8. Create a text file and perform all the file operations.

9. Implement some of STL algorithms through C++ programming.

10. Implement exception handling mechanism.

Total No. of Periods: 45

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115CAL03 - OFFICE AUTOMATION LAB

LIST OF EXPERIMENTS

MS-WORD

1. Creating and Formatting a Simple Document (Using Bulleted and Numbered List, Adding Headers, Footers and Page Numbers).
2. Create a Simple Document (Use Page Setup, Navigate with Document Map).
3. Create tabular data in word and insert graph to represent data.

MS-EXCEL

4. Formatting the Worksheets (Formatting the Cells, Rows and Columns, Adding Row Repeat, Merge and unmerge the cells, Freeze and Unfreeze the Column).
5. Working with Functions and Formulae.
6. Presenting Data with Charts.
7. Performing What-If Analysis with Data Table.
8. Summarize the data using pivot table.
9. Create a simple worksheet form using Macros.
10. Simple graph generation using Macros.

MS-POWERPOINT

11. Creating, Saving, Hiding and Showing, Animating the Slides and Changing Slide Layout.
12. Presentation using Graph, Images, Media Files.

MS-ACCESS

13. Creating a Database (Create a Table, Setting Field Properties and Setting the Key).
14. Develop an Application using Forms.
15. Retrieving Data from more than One Related Table using Queries (Using Query Wizard).
16. Generating Report using Report Wizards.

OUTLOOK EXPRESS

17. Mail Merge for mass mailings using Outlook Express.
18. Condition al and Scheduling mailing using Outlook Express.

Total No. of Periods: 45

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215CAT02 INTERNET AND JAVA PROGRAMMING

UNIT - I MARKUP LANGUAGE (HTML)   9

Introduction to HTML and HTML5 - Formatting and Fonts -Commenting Code – Anchors – Backgrounds – Images – Hyperlinks – Lists – Tables – Frames - HTML Forms.

UNIT – II CASCADING STYLE SHEET (CSS)   9

The need for CSS, Introduction to CSS – Basic syntax and structure - Inline Styles – Embedding Style Sheets - Linking External Style Sheets – Backgrounds - Manipulating text - Margins and Padding - Positioning using CSS.

UNIT - III INTRODUCTION TO JAVASCRIPT   9

Introduction - Core features - Data types and Variables - Operators, Expressions, and Statements - Functions - Objects - Array, Date and Math related Objects - Document Object Model - Event Handling - Controlling Windows & Frames and Documents - Form handling and validations

UNIT – IV JAVA FUNDAMENTALS   9

Java features – Java Platform – Java Fundamentals – Expressions, Operators, and Control Structures – Classes, Packages and Interfaces – Exception Handling.

UNIT – V SWING   9

Introduction to Swing - Swing Features-Component and Container – Swing Control-Swing JFrame Class- GUI Component –JLabel-Event Handling: Text Field-Command Button-Radio Button-Checkbox - List –Combo Boxes.

Total No. of Periods : 45

REFERENCE BOOKS

1. Achyut S Godbole and AtulKahate, "Web Technologies", Second Edition, Tata McGraw Hill, 2012.
2. Thomas A Powell, Fritz Schneider, "JavaScript: The Complete Reference", Third Edition, Tata McGraw Hill, 2013.
3. David Flanagan, "JavaScript: The Definitive Guide, Sixth Edition", O'Reilly Media, 2011
4. Herbert Schildt, The Complete Reference – Java 2, 4 th Edition, Tata McGraw Hill, 2001
5. Joyce Farrell, "Java Programming", Cengage Learning, Sixth Edition, 2011
6. C. Xavier, "Java Programming: A Practical Approach", Tata McGraw Hill, 2011
7. Herbert Schildt, "Swing –A Beginner Guide", Tata McGrawHill, 2010.

215CAE08 - ACCOUNTING AND FINANCIAL MANAGEMENT

UNIT – I INTRODUCTION TO ACCOUNTING   9

Meaning and Scope of Accounting – Principles – Concepts – AccountingStandards – Final Accounts –Trial Balance – Trading Account – Profit and Loss Account – Balance Sheet.

UNIT –II MARGINAL COSTING   9

Meaning – Objectives – Elements of Cost – Cost Sheet – Marginal Costing and Cost Volume Profit Analysis – Break Even Analysis – Applications – Limitations.

UNIT – III BUDGETS AND BUDGETING CONTROL   9

Budgets and Budgetary Control – Meaning – Types – Sales Budget – Production Budget – Cost of Production Budget – Flexible Budgeting – Cash Budget – Master Budget - Zero Base Budgeting.

UNIT– IV INVESTMENT DECISION AND COST CAPITAL   9

Time Value of Money Concepts – Capital Budgeting – Methods Of Appraisal – Cost of Capital Factors Affecting Cost of Capital – Computation for Each Source of Finance and Weighted Average Cost of Capital.

UNIT – V WORKING CAPITAL MANEGEMENT   9

Concepts of Working Capital – Working Capital Policies – Factors Affecting Working Capital – Estimation of Working Capital Requirements.

Total No. of Periods : 45

REFERENCE BOOKS

1. S.N.Maheshwari, "Financial and Management Accounting", Sultan Chand & Sons, 2003.
2. I.M.Pandey, "Finanacial Management", Vikas Publications, 4th Reprint, 2002.
3. S.P. Iyengar, "Cost and Management Accounting", Sultan Chand & Co.
4. I.M.Pandey, "Elements of Management Accounting", Vikas Publications House, 1993.
5. Ravi M. Kishore, "Financial Management", Taxman Publishers, 2013.

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215CAL02 - INTERNET AND JAVA PROGRAMMING LAB

LIST OF EXPERIMENTS

1. Create a web page with the following using HTML5

    (i) To embed an image map in a web page

    (ii) To fix the hot spots

    (iii) Show all the related information when the hot spots are clicked.

2. Create a web page with all types of Cascading style sheets.

3. Implement Client Side Scripts for Validating Web Form Controls using JavaScript.

4. Designing Quiz Application Personal Information System/ Using JavaScript

5. Write a JavaScript for Loan Calculation.

6. Develop and demonstrate a HTML file that includes JavaScript that uses functions for the following problems:

    a) Parameter: A string Output: The position in the string of the left-most vowel

    b) Parameter: A number Output: The number with its digits in the reverse order

7. Writing Java programs by making use of class, interface, package, etc for the following

    a) Uses of 'this' keyword

    b) Polymorphism

    c) Creation of user specific packages

8. Reading and writing text files

9. Writing window based GUI applications using Swing such as Calculator application, Fahrenheit to Centigrade conversion etc.,

10. Design GUI Application Using JFrame Class.

Total No. of Periods: 45

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315CAT01-ADVANCED JAVA PROGRAMMING

UNIT - I COLLECTION FRAMEWORK   9

Collection Interface: Collection – List – Set - Sorted Set. Collection Classes: ArrayList - Linked List - HashSet - Linked HashSet - TreeSet - Working with Map: Map Interface - Map Class. Collection Algorithms - Legacy Classes and Interface.

UNIT – II INTRODUCTIONT TO JSP   9

Introduction - Overview - Syntax and semantics - Development model - Components of JSP: Directives - Comments – Expression - Scriptlet - Declaration-Implicit Object – Standard Action - Tag Extension - Request Dispatching - Anatomy of Request Processing - The Include Directive - Request Dispatcher Object.

UNIT - III ELEMENTS OF JSP   9

Session Tracking-Session API – Cookies - Custom Tag: Introduction - Developing Custom Tag - Tag Libraries - Tag Handler API - Tag Handler File Handling - Defining Tag Attributes. Database Access with JDBC: Overview - JDBC Driver - Connecting to Database with Driver Manager - Database using JNDI Data Source - Statement Interface - ResultSet - Using Metadata.

UNIT - IV INTRODUCTION TO STRUTS2   9

Framework of Web Applications - Struts2 Framework - Declarative Architecture - Deploying sample applications - Struts2 Action: Introduction – Packaging- Implementation – Transferring data onto object-File Upload. Interceptor: Introduction in action – Declaring Interceptor - Building your own interceptor.

UNIT - V OGNL AND BUILDING VIEW   9

Data Transfer and Type Conversion - OGNL and Struts2 - Built in Type Converters - Customizing type conversion - Building a View tag-Data tag - Control tag - Miscellaneous tag - UI Components tag - Result in details.

Total No. of Periods : 45

REFERENCES

1. Herbert Schild, "The Complete Reference Java 2", Tata Mcgraw Hill Publication, fifth Edition.
2. Madhushree Ganguli, "JSP A Beginners Guide", Wiley Publication, First Edition 2005.
3. Phil Hanna, "The Complete Reference JSP 2.0", Tata Mcgraw Hill Publication, Edition 2003.
4. Kogent, "Struts 2 Black Book", Dreamtech Publishers, Reprint Edition 2010.
5. Donald Brown, Chad Michael Davis, Scott Stanlick, "Struts 2 in Action", Dreamtech Publishers, Reprint Edition 2010.

315CAT03 - C# & DOT NET PROGRAMMING

UNIT - I INTRODUCTION TO C#   9

Introducing C#, Understanding .NET, Overview of C#, Literals, Variables, Data Types, Operators, Expressions, Branching, Looping, Methods, Arrays, Strings, Structures, Enumerations.

UNIT - II OBJECT ORIENTED ASPECTS OF C#   9

Classes, Objects, Inheritance, Polymorphism, Interfaces, Operator Overloading, Delegates, Events, Errors and Exceptions.

UNIT - III APPLICATION DEVELOPMENT ON .NET   9

Building Windows Applications, Accessing Data with ADO.NET.

UNIT - IV WEB BASED APPLICATION DEVELOPMENT ON .NET   9

Programming Web Applications with Web Forms, Master pages, Programming Web Services.

UNIT - V REPORTING AND APPLICATION TOOLS   9

Reporting : Report viewer , Crystal Reports , Ajax Toolkit : Script Manager , timer, update panel, update process, calendar extender, password strength, Filtered text extender ,popup control extender, Tab Container, Textbox Watermark extender.

Total No. of Periods : 45

REFERENCES

1. E. Balagurusamy, "Programming in C#", 4th ed., Tata McGraw-Hill, 2011.
2. J. Liberty, "Programming C# 4.0 ", 4th ed., O'Reilly, 2010.
3. Herbert Schildt, "The Complete Reference: C#", Tata McGraw-Hill, 2012.
4. Robinson et al, "Professional C#", 4th ed.,WroxPress, 2014.
5. Andrew Troelsen, "C# and the .NET Platform", 3 Ed, AI Press, 2003.
6. S. ThamaraiSelvi, R. Murugesan, "A Textbook on C#", Pearson Education, 2003.

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315CAP06 – ADVANCED JAVA PROGRAMMING LAB

LIST OF EXPERIMENTS

1. Practice Simple Program using HashSet and Array List
2. Practice Simple Program using Map Interface and Map Class
3. Develop a simple program using Expression, scriptlet and Declaration.
4. Create an application using request processing.
5. Develop an application using session.
6. Develop a real-estate web application with n-tier architecture. Use JSP and JDBC. The application should be able to add and search all properties such as rental/own, individual/apartment and duplex/semi-duplex.
7. Develop a Simple Application using Struts2.
8. Create an application using action as Action Form.
9. Create Strut2 application Using OGNL.
10. Design a student identity management web application using struts framework. The application should be able to provide an identity such as student id, access to department assets with department id, access to lab assets with lab id.

Total No. of Periods: 45

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315CAE03 - ADVANCED DATABASE MANAGEMENT SYSTEMS

UNIT - I PARALLEL AND DISTRIBUTED DATABASES   9

Database System Architectures: Centralized and Client-Server Architectures – Server System Architectures – Parallel Systems- Distributed Systems – Parallel Databases: I/O Parallelism – Inter and Intra Query Parallelism – Inter and Intra operation Parallelism – Design of Parallel Systems Distributed Database Concepts - Distributed Data Storage – Distributed Transactions – Concurrency Control – Distributed Query Processing.

UNIT - II OBJECT RELATIONAL DATABASES   9

Concepts for Object Databases: Object Identity – Object structure – Type Constructors – Encapsulation of Operations – Methods – Persistence – Type and Class Hierarchies – Inheritance – Complex Objects – Object Database Standards, Languages and Design: ODMG Model – ODL – OQL – Object Relational and Extended .

UNIT - III INTELLIGENT DATABASES   9

Active Database concepts and triggers - Temporal Database - Spatial Databases- Multimedia Database – Deductive databases – Introduction to Database security – Challenges of database security.

UNIT - IV ADVANCED DATA MODELS   9

Internet databases – Digital libraries – Mobile Databases - Mobile Transaction Models - Information Retrieval- Data Warehousing architecture - Data Mining - Text Mining – Information retrieval.

UNIT - V EMERGING TECHNOLOGIES   9

XML Databases: XML-Related Technologies-XML Schema- XML Query Languages-Storing XML in Databases-XML and SQL- Native XML Databases- Web Databases- Geographical Information Systems- Biological Data Management.

Total No. of Periods: 45

REFERENCES

1. Thomas Cannolly and Carolyn Begg, "Database Systems, A Practical Approach to Design, Implementation and Management", Third Edition, Pearson Education, 2007.
2. R.Elmasri, S.B. Navathe, "Fundamentals of Database Systems", Fifth Edition, Pearson Education Addison Wesley, 2007.
3. R.Elmasri, S.B. Navathe, Database System Modles, Language, Design and Application Programming 6th Ed. Pearson Pub., 2016.
4. Henry F Korth, Abraham, Silberschatz, S Sudharshan "Database System Concepts", 6th ED McGraw-Hill 2011.
5. Raghu Ramakrishnan, Johannes Gehrke, "Database Management Systems", McGraw Hill, Third Edition 2004.

415CAT01 - WEB PROGRAMMING

UNIT - I INTRODUCTION   9

Getting PHP - Creating a First PHP Page - Printing Some Text - Working with Variables - Creating Constants - Understanding PHP's Internal Data types - Operators and Flow Control - String :String Functions - Formatting text Strings.

UNIT - II ARRAYS AND FUNCTIONS   9

Arrays: Handling Arrays with Loops - PHP Array functions-Converting String and Arrays - Sorting Arrays - Handling Multidimensional Arrays - Moving through Arrays – Splitting and Merging Arrays – Other Array functions – Functions: Creating function in PHP – Introduction to Variable Scope in PHP – Nesting Functions.

UNIT – III WORKING WITH DATABASES AND COOKIES   9

Database Introduction – Creating MYSQL Database - Accessing database in PHP – Updating Databases – Inserting item into a Database – Delete Records. Setting a Cookie – Reading a Cookie – Session – Working with FTP – Downloading Files with FTP – Deleting a File with FTP.

UNIT – IV READING DATA IN WEB PAGES & FILE HANDLING   9

Setting up web pages to communicate with PHP – Handling Form Controls – Handling Hidden Controls – Image Maps – Handling file Uploads. File Handling: Opening Files – Closing a File – Reading and Writing to a File – Appending to File - Locking File.

UNIT – V OBJECT ORIENTED PROGRAMMING   9

Creating Classes – Creating Objects – Setting Access to Properties and Method – Constructors and destructors – Inheritance – Overriding Methods – Overloading Methods – Creating Static Methods – Creating abstract classes - creating Interfaces.

Total No. of Periods: 45

REFERENCES

1. Steven Holzner, PHP The Completer Reference, McGraw Hill Education, reprint 2013.
2. David Sklar and Adam Tracktenberg, PHP Cookbook, Oreilly, 2nd Edition, 2010.
3. Steve Suehring, Tim Converse Joyce Park, PHP 6 and MYSQL Bible, 2009.
4. Ed Lecky, Thompson, Steve D Nowicki, Professional PHP6, Wiley India, 2009.
5. Kevin Tatore, Peter MacIntyre and Rasmus Lerdorf, Programming PHP, O'Reilly, 2013.

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415CAT03 - MOBILE COMPUTING

UNIT - I INTRODUCTION 9

Mobile Computing – Mobile Computing Vs wireless Networking – Mobile Computing Architecture - Mobile Computing Applications – Characteristics of Mobile computing – Structure of Mobile Computing Application. MAC Protocols – Wireless MAC Issues – Fixed Assignment Schemes – Random Assignment Schemes – Reservation Based Schemes.

UNIT - II MOBILE INTERNET PROTOCOL AND TRANSPORT LAYER 9

Overview of Mobile IP – Features of Mobile IP – Key Mechanism in Mobile IP – route Optimization. Overview of TCP/IP – Architecture of TCP/IP- Adaptation of TCP Window – Improvement in TCP Performance.

UNIT - III MOBILE TELECOMMUNICATION SYSTEM 9

Global System for Mobile Communication (GSM) – General Packet Radio Service (GPRS) – Universal Mobile Telecommunication System (UMTS).

UNIT - IV MOBILE AD-HOC NETWORKS 9

Ad-Hoc Basic Concepts – Characteristics – Applications – Design Issues – Routing – Essential of Traditional Routing Protocols –Popular Routing Protocols – Vehicular Ad Hoc networks (VANET) – MANET Vs VANET – Security.

UNIT - V MOBILE PLATFORMS AND APPLICATIONS 9

Mobile Device Operating Systems – Special Constrains & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows Phone - Hybrid mobile applications – M-Commerce – Structure – Pros & Cons – Mobile Payment System – Security Issues.

Total No. of Periods: 45

REFERENCES

1. Prasant Kumar Pattnaik, Rajib Mall, "Fundamentals of Mobile Computing", PHI Learning Pvt. Ltd, New Delhi – 2012.
2. Raj Kamal, "Mobile Computing", Second Edition, Oxford University Press, 2012.
3. Himanshu Dwivedi, Chris Clark, David Thiel, "Mobile Application Security", Tata McGraw-Hill, 2010.
4. Wei-Meng Lee, "Beginning Andriod Application Development", Wiley India Pvt. Ltd, 2011.
5. Jochen H. Schiller, "Mobile Communications", Second Edition, Pearson Education, 2009.
6. http://ionicframework.com and https://onsen.io

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415CAP06 – WEB PROGRAMMING LAB

LIST OF EXPERIMENTS

1. Implement different types of array in PHP.

2. Implement

   a. String function

   b. Date function

   c. User Defined function

3. Design an User Registration Form and display the user information in another form (Use GET/POST)

4. Design any simple Web Application using PHP and MYSQL

5. Design a Responsive Web Page using PHP.

6. Set Cookies and Retrieve the same in another page.

7. Practice Session Handling in PHP.

8. Implement File Concept in PHP.

9. Implement

   a. Overloading Methods

   b. Overriding Methods

Total No. of Periods: 45

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415CAE03 - CLOUD COMPUTING

UNIT - I CLOUD ARCHITECTURE AND MODEL   9

Introduction – Essentials – Benefits – Cloud and Virtualization – Cloud services requirements – Cloud and dynamic infrastructure – Cloud Computing Characteristics – Measured Services – Cloud Deployment Models – Security in a public cloud – Cloud infrastructure self-services.

UNIT - II CLOUD AS SERVICE   9

Gamut of Cloud Solutions – Principal technologies – Cloud Strategy – Cloud Design and implementation using SOA – Conceptual Cloud Model – Cloud service defined. Cloud Solution: Cloud business process management – Cloud service management – Computing on demand.

UNIT - III CLOUD VIRTUALIZATION TECHNOLOGY   9

Virtualization Defined – Virtualization Benefits – Server Virtualization – Storage Virtualization - Virtual Desktop Infrastructure – Virtualization for x86 Architecture – Hypervisor Management software – Virtual Infrastructure requirements.

UNIT - IV CLOUD INFRASTRUCTURE AND MOBILITY   9

Storage Area Networks – Network Attached Storage – Cloud Server Virtualization - Networking Essential to Cloud – SOA and Cloud – SOA and IAAS – SOA based Cloud Infrastructure steps. Mobile Enterprise Application Platform – Mobile Application Architecture Overview.

UNIT V SECURITY AND STANDARDS IN THE CLOUD   9

Cloud Security Challenges – Software as a service Security – Open Cloud Consortium – Distributed Management Task Force – Standards for Application Developers – Standards for Messaging – Standards for Security.

Total No. of Periods: 45

REFERENCES

1. Dr. Kumar Saurabh, Cloud Computing, Second Edition, Wiley – India, 2013.
2. Jhon W. Rittinghouse and James F. Ransome, Cloud Computing Implementation, Management, and Security, CRC Press Taylor & Francis Group, 2012.
3. Sanjiva Shankar Dubey, Cloud Computing and Beyond, I.K. International Publishing House Pvt. Ltd, 2012.
4. Anthony T. Velte, Toby J. Velte, Robert Elsenpeter, Cloud Computing : A Practical Approach, Tata McGraw Hill Edition, 2010.
5. Ronald L.Krutz and Russele Dean Vines, Cloud Security, Wiley India, First Edition, 2012.

415CAE08 - PROFESSIONAL COMMUNICATION

UNIT – I BASICS OF TECHNICAL COMMUNICATION   9

Technical Communication – features - Distinction between General and Technical communication - Language as a tool of communication - Levels of communication: Interpersonal, Organizational, Mass communication - The flow of Communication: Downward, Upward, Horizontal, Diagonal - Importance of technical communication - Barriers to Communication.

UNIT – II CONSTITUENTS OF TECHNICAL WRITTEN COMMUNICATION   9

Word formation - Synonyms and Antonyms – Acronyms – Homonyms - Word Power - Select vocabulary of about 500- 1000 New words – Odd man Out – Jumbled Words and Sentences-Creative and Critical Thinking - Requisites of Sentence Construction - Paragraph Development: Techniques and Methods - Inductive, Deductive, Spatial, Linear, Chronological etc: Essay Writing – Narrative – Argumentative - Reading and Interpretation.

UNIT – III FORMS OF TECHNICAL COMMUNICATION   9

Business Letters: Sales and Credit letters - Letter of Enquiry - Letter of Quotation, Order, Claim and Adjustment Letters - Job application and Resumes - Reports: Types – Significance – Structure - Style & Writing of Reports – Agenda – Minutes of Meeting – Advertisement – Fliers – Brochures – Faxes – Internet Websites – Intranet Websites – Extranet Websites – Blogging.

UNIT – IV PRESENTATION STRATEGIES   9

Defining Purpose Analyzing Audience & Locale - Organizing Contents - Modes of Delivery: Extemporaneous, Manuscript, Impromptu, Memorization - Kinesics – proxemics – Paralinguistics – Chronemics.

UNIT – V CAREER SKILLS   9

Transfer of Information: Pie Chart, Bar Chart, Flow Chart - Check List – Recommendation - Instruction - E-mail Writing – Verbal Analogy – HR Questions – Theme Detection – Deriving conclusions from Passages.

Total No. of Periods: 45

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REFERENCES

1. Effective Technical Communication by Barun K. Mitra, Oxford Univ. Press, 2006, New Delhi.
2. Business Correspondence and Report Writing by Prof. R.C. Sharma & Krishna Mohan, Tata McGraw Hill & Co. Ltd., New Delhi, 2002.
3. How to Build Better Vocabulary by M.Rosen Blum, Bloomsbury Pub. London, 1989.
4. Word Power Made Easy by Norman Lewis, W.R.Goyal Pub. & Distributors; Delhi, 2011.
5. Developing Communication Skills by Krishna Mohan, Meera Banerji- Macmillan India Ltd. Delhi, 2000.
6. Manual of Practical Communication by L.U.B. Pandey & R.P. Singh; A.I.T.B.S. Publications India Ltd., Krishan Nagar, Delhi, 2013.

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LAB ELECTIVE – IV

415CAL01 - XML AND WEB SERVICES LAB

LIST OF EXPERIMENTS

1. XML document creation.

2. Importing and Exporting XML document in database.

3. XSL Transformation

4. Internal and External DTD creation

5. XML Schema creation

6. Parsing XML document using DOM/SAX parser.

7. Web Service creation using JAX-WS

8. Web Service creation using JAX-RS

9. Web Service creation using .NET

10. JAXB Marshaling and Unmarshaling.

11. Implementation of RESTfull Web Services.

Total No. of Periods: 45

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415CAL05 – EXECUTIVE COMMUNICATION LAB

LIST OF EXPERIMENTS

1. **Introduction – Soft Skills**

Team Skills: Team Building and Leadership, Evolution of Groups into Teams, Group Dynamics, Emergence of Leadership, Intra-Group Dynamics, Inter-Group Dynamics, Stress Management, Inter Dependency, Assessment of Team-Based Projects.
Time Management: Goal Setting and Effective Time Management.
Interpersonal Skills: Negotiations, Conflict Management, Listening Skills, Social Skills, Assertive Skills and Cross-Cultural Communications
Leadership Skills: Concepts of Leadership, Leadership Styles, Insights from Great Leaders.
Soft skills: video clips and Organizing functions and Meetings

2. **Listening Comprehension**
   a) Phonetics
   b) Conversations – video clips
   c) Listening to Speeches & Short Conversations

3. **Reading Comprehension**

4. **Presentation Skills:** Video Clips, Preparing and Presenting PPTs
   Preparing for Effective Presentations, Presentation for Small Groups and Large Groups, Marketing and Business Presentations, Persuasive presentations

5. **Body Language:** Importance of Non-Verbal Communication

6. **Training in Group Discussion and Personal Interview**
   Practices in Group Discussion (GD), Interview Skills, Interview FAQ's and Mock Interview

7. **Résumé / Letter writing/E-Mail Etiquettes**

8. **Report Preparation:** Technical reports, Feasibility Reports and Business Progress Reports

9. **Grammar:** Concord, Error Correction, Editing, Verbal Analogy and Sequencing of Sentences

Total No. of Periods: 45

REFERENCE BOOKS

1. Andrea J. Rutherford, "Basic Communication Skills for Technology", 1st Edition, Pearson Education Asia (Singapore) Pvt. Ltd., Bangalore, 2001.
2. Bhatia R.C., "Business Communication", Ane Books India, New Delhi, 2008.
3. Raman, Meenakshi and Sangeetha Sharma, "Technical Communication – English Skills for Engineers", 2nd Edition, Oxford University Press, New Delhi, 2009.
4. Ashraf M Rizvi, "Effective Technical Communication", 5th Edition, The McGraw-Hill Publishing Company Ltd., New Delhi, 2007.
5. Mohan Krishna Banerjee Developing Communications Skills Macmillan India Ltd. 2009.
6. R S Aggarwal, "Objective English", Macmillan India Ltd. 2007.

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515CAT01 – INTERNET OF THINGS

UNIT I M2M to IoT 9

The vision – Introduction, M2M towards IoT - the Global context, a use case example, differing characteristics.

UNIT II M2M to IoT –A MARKET PERSPECTIVE 9

Introduction, some definitions, M2M Value chains, IoT value chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies – **An Architectural Overview** – Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.

UNIT III M2M and IoT TECHNOLOGY FUNDAMENTALS 9

Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a service (XaaS), M2M and IoT Analytics, Knowledge Management.

UNIT IV IoT ARCHITECTURE –STATE OF THE ART 9

Introduction, state of the art, **Architecture Reference Model** and architecture, IoT references Model – Functional View – Information View – Deployment and operational view.

UNIT V IoT REFERNCE ARCHITECTURE 9

Real – World Design Constraints – Introduction, Technical Design constraints – Data representation and visualization, interaction and remote control. - IoT Platform : Raspberry Pi Interface - **Commercial Building automation** - Introduction, case study: phase one – commercial building automation today, case study: phase two – commercial building automation in the future.

Total No. of Periods : 45

REFERENCES

1. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, "From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", 1st Edition, Academic Press, 2014.

2. Vijay Madisetti and Arshdeep Bahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014.

3. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", 1st Edition, Apress Publications, 2013

4. Samvel Greengard, The Internet of Things, MIT Press Esential Knowldege Series, Paperback,2015.

5. Olivier Hersent , David Boswarthick, Omar Elloumi , "The Internet of Things –Key applications and Protocols", Wiley, 2012

515CAT02 – MOBILE APPLICATION DEVELOPMENT

UNIT – I INTRODUCTION   9

Preliminary Considerations – Cost of Development – Importance of Mobile Strategies in Business World – Mobile Web Presence - Mobile Applications - Marketing – Web Services for Mobile Devices : Web Services - Creating Example Web Service - Debugging Web Service.

UNIT – II MOBILE USER INTERFACE DESIGN   9

Effective Use of Screen Real Estate – Understanding Mobile Application Users – Understanding Mobile Information Design – Understanding Mobile Platform – Using the Tool for Mobile Interface Design – Choosing a Mobile Web Option – Adaptive Mobile Web Site – Mobile Application with HTML 5.

UNIT-III ANDROID APPLICATION DEVELOPMENT   9

Getting to know the Android User Interfaces – Designing User Interface Using Views – Displaying Pictures and Menus with Views : Using Image Views to Display Pictures – Using Menus with Views – Data Persistence : Saving and Loading User Performances – Persisting data to files – Creating and Using Databases- Messaging and Networking.

UNIT – IV IOS   9

Getting the Tools - iOS Project: Anatomy of an iOS App, Xcode ide - Debugging iOS App – iOS simulator – Debugging Code – Instruments - Objective C Basics – Simple App Development – Building the Derby App in iOS – Other Useful iOS things.

UNIT –V WINDOWS PHONE   9

Getting the Tools – Windows Phone 7 Project - Building the Derby app in Windows Phone 7 – Distribution other useful Window Phone Things – Case Study – Phone Gap – Titanium.

Total No. of Periods: 45

REFERENCES

1. Jeff Mc Wherter and Scott Gowell, "Professional Mobile Application Development", Wrox 2012.
2. Wei-Meng Lee, "Beginning Android Application Development", Wiley 2011.
3. Himansu Dwivedi, Chris Clark and David Thiel, "Mobile Application Security", Tata McGraw Hill Edition 2010.\
4. Paul Deitel, Harvey Deitel, Abbey Deitel and Michael Morgany, "Android for Programmers An App-Driven Approach", Pearson 2012.
5. Reto Meier, "Professional Android 4 Application Development", Wiley 2015.

515CAT03 – BIG DATA MANAGEMENT

UNIT I - BASICS OF DATA AND NOSQL DATA MANAGEMENT   9

Introduction - Big Data - Data-Data Storage and Analysis - Comparison with Other Systems - Convergence of Key Trends - Unstructured Data - Industry Examples of Big Data - Big Data Technologies - NOSQL Data Management - Introduction to NOSQL - Aggregate Data Models - Relationships - Graph Databases - Schemaless Databases - Materialized Views - Distribution Models - Version Stamps – Mapreduce - Partitioning and Combining - Composing Mapreduce Calculations.

UNIT II – HADOOP INTRODUCTION   9

Hadoop : History of Hadoop - Components of Hadoop -Application Development in Hadoop - Getting your Data into Hadoop - Other Hadoop Components - Basics of Hadoop - Data Format - Analyzing Data with Hadoop - Scaling out – DataFlow - Hadoop Streaming - Hadoop Pipes - Design of Hadoop Distributed File System - HDFS Concepts- Java Interface-Hadoop I/O.

UNIT III –MAPREDUCE APPLICATIONS   9

Map Reduce Applications - Mapreduce Workflows - Unit Tests With MRUnit - Test Data and Local Tests - Anatomy of Mapreduce Job Run - Failures in Classic Mapreduce and Yarn - Job Scheduling - Shuffle and Sort - Task Execution - Map Reduce Types.

UNIT IV – PIG, HIVE AND HBASE   9

Pig-Installing and Running Pig - An Example - Comparison with Databases - Pig Latin - Data Processing Operators – Hive - Installing Hive - An Example - Running Hive - Comparison with Traditional Databases – HiveQL - Tables - Querying Data – HBase – HBasics - Concepts - Installation – Clients - HBase versus RDBMS - Praxis.

UNIT V – DATA STREAMING AND HADOOP CLUSTERING   9

Mining Data Streams : Stream Data Model – Sampling Data in a Stream – Filtering Streams - Setting Up a Hadoop Cluster - Cluster Specification – Cluster Setup and Installation – Hadoop Configuration - Security - Benchmarking a Hadoop Cluster.

Total No. of Periods: 45

REFERENCES

1. Chandrakant Naikodi "Managing the Big Data", Vikas Publishing House Pvt Ltd.New Delhi 2015.
2. Chris Eaton, Dirk DeRoos, Tom Deutsch, George Lapis, Paul Zikopoulos, "Understanding Big Data: Analytic for Enterprise Class Hadoop and Streaming Data", McGraw-Hill Publishing, 2012
3. Tom White, "Hadoop: The Definitive Guide: Storage and Analysis At Internet Scale", Fourth Edition, Oreilly Media, 2015.
4. Anand Rajaraman and Jeffrey David Ullman, "Mining Massive Datasets", Cambridge University Press, 2012.
5. Bill Franks, "Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics", John willey & sons 2012.

515CAE02 – OPEN SOURCE TECHNOLOGIES

UNIT – I INTRODUCTION TO PYTHON   9

Python Basics: Statements and Syntax – Style Guidelines – Memory Management. Python Objects: Built-in and Internal types – Standard Type Operators and Built-in Functions – Categorizing the Standard and Unsupported Types. Numbers: Complex Numbers – Built-in and Factory Functions – Numeric Types.

UNIT – II SEQUENCES, CONDITIONALS, LOOPS AND FILE I/O   9

Sequences – Strings – Lists – Tuples – Conditional Statements and Expressions – File Objects – File Built-in Functions, Methods and Attributes – Standard Files – Command-Line Arguments – File System and Execution.

UNIT – III PYTHON NETWORK AND GUI PROGRAMMING   9

Network Programming in Python – SocketServer Module – Introduction to the Twisted Framework. GUI Programming – Tkinter and Python Programming – Tkinter Examples – Tour of other GUIs.

UNIT – IV PYTHON & AWS   9

Elastic Compute Cloud (EC2): Launching an Instance – Keeping Tracks of Instances with Tag – Accessing the Console – Uploading and Synchronizing SSH Keypair – Attach a Persistent EBS Volume and Back Up – Find All Running EC2 Instance – Monitoring the Performance of Instance. Simple Storage Service (S3): Create a Bucket in a Specific Location – Store Private Data and Metadata – Computing Total Storage Used by a Bucket – Find Out Who Is Accessing Data.

UNIT – V PYTHON FOR DATA ANALYSIS   9

Data Loading, Storage and File Formats: Reading and Writing Data in Text Format – Binary Data Formats – Interacting with HTML, Web APIs and Database. Plotting and Visualization: A brief matplotlib API Primer – Plotting Functions in pandas – Python Visualization Tool Ecosystem: Chaco and mayavi.

Total No. of Hours: 45

REFERENCES

1. Wesley J. Chun. "Core Python Programming", Second Edition, Pearson, 2007.
2. Mitch Garnaat. "Python and AWS Cookbook", First Edition, O'Reilly Media, Inc., 2012.
3. Wes Mckinney. "Python for Data Analysis", First Edition, O'Reilly Media, Inc., 2012.
4. John M. Stewart. "Python for Scientists", Cambridge University Press, 2015.
5. Allen B. Downey. "Think Python", First Edition, O'Reilly Media, Inc., 2012.

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515CAE09 – DIGITAL MARKETING MANAGEMENT

UNIT – I INTRODUCTION   9

Going Digital – The changing face of advertising – The Technology behind digital marketing – Strategic thinking: Why you need a digital marketing strategy – Defining your digital marketing strategy – Understanding the digital marketing strategy – Understanding the digital consumer – Mind your Ps – Your window to the digital world.

UNIT – II SEARCH ENGINE MARKETING   9

The search for success: Search: the online marketer's holy grail – About the engines – Optimizing your site for the engines – Advertising on the search engines – Black Hat, the darker side of search – Bringing in the pros – Universal search –more opportunities to rank – Website intelligence and return on investment.

UNIT – III MARKETING TRENDS   9

E-mail marketing: The new direct mail – what exactly is e-mail marketing – Planning your campaign – Dos and Don'ts of an e-mail marketing campaign – Measuring your success – Still a vital component of digital marketing – Social media and online consumer engagement: join the conversation – What is social media – The different forms of social media – The rules of engagement – Adding social media to your own site – Online PR and reputation management.

UNIT – IV AFFILIATE AND MARKETING ON INTERNET   9

Affiliate marketing and strategic partnerships: Recognizing opportunities for strategic partnership – What is affiliate marketing – The click that really counts – What advertisers should do – Digital media creative: Creative application of digital media – using an agency Digital creative: what works and what doesn't – The age of new information-Based marketing – Advertising on internet – Charting the on-line Marketing Process.

UNIT – V CONSUMER SEARCH AND RESOURCE DISCOVERY   9

Search and resource discovery paradigms – Information search and retrieval – Information filtering – On-demand education and digital copy rights: Computer based education and training – Digital copy rights and Electronics commerce – Multimedia and digital video: Key multimedia concepts – Desk top video processing – Desk top video conferencing.

Total No. of Periods: 45

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REFERENCES

1. Damian Ryan , Understanding Digital Marketing : Marketing Strategies for Engaging the Digital Generation, Kogan Page publisher, 3rd Edition, 2014.
2. Ravi Kalakota and Andrew B.Whinston, 'Frontiers of Electronic Commerce', Pearson Edu Inc., 9th Ed, 2009.
3. Deepak Bansal, A Complete Guide To Search Engine Optimization, B.R Publishing Corporation, 1st Edition, 2009.
4. Grienstein and Feinman- 'E-commerce –Security, Risk Management and Control', McGraw-Hill Inc.,US, Ed 2, 2009.
5. Jonah Berger, Contagious Why Things Catch On, Simon & Schuster, 2013.
6. E-Marketing: The essential guide to marketing in a digital world, Rob Stokes, Quirk eMarketing (Pty) Ltd. 5th Ed, 2013.

Lab Elective – V

515CAL01 – MOBILE APPLICATION DEVELOPMENT LAB

LIST OF EXPERIMENTS

1. Design a simple Mobile Application using Button Control

2. Design a User Registration Form

3. Implement View and Activity

4. Design Image and video album

5. Implement notification through

    a. SMS

    b. E –mail

    c. Mobile Calls

6. Create an address book using database.

7. Design a Game application.

8. Design student information using Framework.

9. Display text using iOS.

10. Create an interactive iOS application.

Total No. of Periods: 45

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515CAL02 – OPEN SOURCE TECHNOLOGIES LAB

LIST OF EXPERIMENTS

1. Implement File/Image uploading using Python Django.

2. Design login page using Python Flask web application.

3. Create a MDI GUI component using Python PyQt.

4. Create a QMessagebox using Python language.

5. Draw an API for geometric shapes using wxPython.

6. Performing basic cloud storage operations using python.

7. Explore the basic plot interface using MatPlotlib.

8. Performing data analysis using Pandas.

Total No. of Periods: 45

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