120CAT02 – PYTHON PROGRAMMING

- To know the basics of algorithmic problem solving
- To read and write simple Python programs.
- To develop Python programs with conditionals and loops.
- To define Python functions and call them.
- To use Python data structures -- lists, tuples, dictionaries.
- To do input/output with files in Python.

UNIT - I DATA, EXPRESSIONS, STATEMENTS   9

Python interpreter and interactive mode; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; modules and functions, function definition and use, flow of execution, parameters and arguments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

UNIT - II CONTROL FLOW, FUNCTIONS   9

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search.

UNIT - III LISTS, TUPLES, DICTIONARIES   9

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing - list comprehension; Illustrative programs: selection sort, insertion sort, merge sort, histogram.

UNIT - IV FILES, MODULES, PACKAGES   9

Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file.

UNIT - V OOC AND DB INTEGRATION IN PYTHON   9

Python Basics - Introduction to OOC – Classes and Instances – Static and Class Methods – Composition – Inheritance – Built-in Functions – Integrated Web Applications in Python - Python and MySQL Database Integration: Connect Database – Create and Insert Operations – Parameter Passing – Retrieving data from Database. Case Study on SciPy, Django, Open CV.

Total No. of Hours: 45

Course Outcomes:

CO1. Develop algorithmic solutions to simple computational problems

CO2. Read, write, execute by hand simple Python programs.

CO3. Structure simple Python programs for solving problems.

CO4. Represent compound data using Python lists, tuples, dictionaries.

CO5. Read and write data from/to files in Python Programs.

REFERENCES

1. Fabrizio Romano,"Learn Python Programming", Second Edition, Paktr Publication, 2018

2. Ashok Namdev Kamthane, Amit Ashok Kamthane,"Python programming", McGraw Hill Publication,2018

3. Brian Draper, "Python Programming -A Complete Guide for Beginners to Master and Become an Expert in Python Programming Language", CreateSpace Independent Publishing Platform,2016

4. John M. Stewart, "Python for Scientists", Cambridge University Press, 2015.

5. Mitch Garnaat, "Python and AWS Cookbook", First Edition, O'Reilly Media, Inc., 2012.

6. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers, 2016

7. Guido van Rossum and Fred L. Drake Jr. —An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011.

120CAP06 – PYTHON PROGRAMMING LAB

Course Objectives

- To Understand fundamental statement of python programming
- To enable knowledge of Dictionaries and tuples
- Practice of an Exception Handling
- Ability to gain knowledge on Inheritance
- To Deploy web application with MySQL Database

LIST OF EXPERIMENTS

1. Write a python program to implement a module to find distance between two points

2. Develop a user defined function to exchange the value of two variables.

3. Write a python program to implement any five string functions.

4. Python Program to develop a fruitful function.

5. Implement a python program with tuples

6. Write a python program to use Dictionaries with appropriate data.

7. Implement file concept with various operation

8. Practice Exception handling in python

9. Design and develop a python program using Inheritance.

10. Integrate Web Application in Python Using MySQL Database.

Total No. of Periods: 45

Course Outcome

CO1. Getting Practice with decision and branching statement
CO2. Knowledge about dictionaries and tuples
CO3. Create an exception handling application with inheritance
CO4. Able to develop a web application with MySQL database

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120CAE07 - BUSINESS PROCESSES

Course Objectives

- An organization must carefully analyze and document their business processes
- Continuously assess the efficiency and effectiveness of these processes to minimize cost and maximize value creation.
- Cognize the interactions between human behavior and process design.
- Managing Change in the Global Environment-BPR
- Organizational Frame Work and Implementation of business processes

UNIT 1: ORGANIZATIONAL STRUCTURE 9

Types of Business Organizations-Organizational Structures-Definition-Complexity-Formulization-Size-Technology-Culture-Forms and Outcomes-Explanations of Structures-IT Industry and Organizational Structures

UNIT 2: ORGANIZATIONAL OUTCOMES 9

Organizational Power and Power Outcomes-Leadership and Decision Making-Communication and Organizational Change-Organizational Environments and Effects-Inter and Intra organizational Relationships-Organizational Effectiveness

UNIT 3: BUSINESS PROCESS RE-ENGINEERING 9

Introduction to Business Process Re-engineering (BPR)-Meaning-Types-Process-Impetrative for Survival-Strategic Approach-Implementing Business Process Re-engineering-Methodology and Steps-Indian Scenario of Implementing BPR

UNIT 4: BPR AND IT INDUSTRY 9

BPR and Information Technology Process-People View and Perspectives-Empowering People through IT-Managing Change in the Global Environment-BPR Rediscovering Indian Paradigm-Need of Reengineering

UNIT 5: E-BUSINESS PROCESS 9

E-Business-Introduction-E-business vs. E-commerce-Execution of E-business-Trends-Design for Execution-Construction-Types-Organizational Frame Work and Implementation-E-business Application Areas(CRM,ERP,SCM and Selling)-E-business and India

Total No. of Periods: 45

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Course Outcomes:

CO1. Develop new or improved innovative business processes from gap analysis through process design in support of a company's strategic objectives in a socially responsible manner.

CO2. Analyze the key business processes that drive the value chain of an organization throughout the entire product life cycle.

CO3. Evaluate current global business issues and their impact on various enterprises.

CO4. BPR and Information Technology Process-People View and Perspectives

CO5. E-business Application in the areas of CRM,ERP,SCM and Selling

REFERENCES:

1. Richard H.Hall, Organizations-Structures, Processes and Outcomes", Pearson Education, 2015
2. M.S.Jayaraman et. Al. "Business Process Reengineering", Tata Mc Graw Hill Publications, 2015
3. Ravi Kalakota and Marcia Robinson, "E-Business: Roadmap for Success: Pearson Education, 2016
4. Gareth Jones, "Organizational Theory, Design and Change", Pearson Education, 4th Edition, 2017
5. Dave Chaffey, "E-business and E-Commerce" Pearson Education, 2nd Edition,2016

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220CAT02 OBJECT ORIENTED PROGRAMMING USING JAVA

Course Objectives

- Basic concepts of Java Fundamental
- Practice an Exception and Multithreading
- Provide a Knowledge about AWT
- To apply networking and SQL Packages
- Understand the Collection framework.

UNIT - I JAVA FUNDAMENTALS 9

Java Features – Java Platform – Java Fundamental – Expression – Operators – Control Structures – Classes and Object – Inheritance – Polymorphism – Abstract class – Interface – Packages – Inner Classes.

UNIT - II EXCEPTION AND MULTITHREADING 9

Exception Handling Fundamentals – Exception Types – Java Built in Exception – Creating Your Own Exception Subclasses – Chained Exceptions – The Java Thread Model – Thread Priorities – Creating Thread: Implementing Runnable interface - Synchronization – Interthread Communication- Using a Factory Method to create and start a thread.

UNIT - III AWT & EVENT HANDLING 9

AWT Classes-Windows Fundamentals-Working with Frame Windows-Working with Font-AWT Control Fundamentals-AWT Components-Understanding Layout Managers-Menu bars and Menus-Event Handling Mechanisms-Delegation Event Model-Event classes-Key Event class-Event Listener Interfaces.

UNIT - IV NETWORKING AND SQL PACAKAGES 9

Networking Basics-Networking Classes and Interface-InetAddress-Inet4 and Intnet6 Address-TCP/IP Client Socket-URL Connections-Cookies-TCP/IP Server Socket-Java Database Connectivity-Introduction JDBC Drivers-JDBC connectivity with MySQL/Oracle-Prepared Statement & Result Set.

UNIT – V COLLECTION FRAMEWORK 9

Collection Overview – The Collection Interface: List Interface-Set Interface –Sorted Set Interface – NavigableSet Interface – Queue and Deque Interface – The Collection Classes – ArrayList Class – LinkedList Class –HashSet Class- LinkedHashSet Class – TreeSet Class – The PriorityQueue Class – The ArrayDeque Class – The EnumSet Class- Accessing a Class via an Iterator

Total No. of Periods: 45

Course Outcomes :

- CO1. To apply the fundamental concept of JAVA.
- CO2. Implement Exception Handling and Multithreading
- CO3. Design an application using AWT.
- CO4. Gain Knowledge about Networking and packages
- CO5. Deploy Collection framework.

REFERENCES

1. Herbert Schildt. The Java Complete Reference. 11th Edition. Tata McGraw Hill.,2018.
2. Mitsunori Ogihara. "Fundamentals of Java Programming", Springer Publication, 2018.
3. E. Balaguruswamy. "Programming with JAVA", 6th Edition. Tata McGraw Hill Publication. 2019.
4. Bart Baesens, Aimee Backiel. Seppe vanden Broucke. " Beginning Java Programming: The Object -Oriented Approach". Wiley Publication, 2015.
5. Wu Thomas. "Introduction to Object-Oriented Programming with Java", McGraw Hill Education. 2005

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220CAT03 CLOUD COMPUTING

Course Objectives

- To Understand the cloud architecture and model
- Learn about various services involved in cloud.
- Provide a knowledge about virtualization technology.
- Understand Cloud Infrastructure and mobility.
- Knowledge about security and standards in the cloud.

UNIT - I CLOUD COMPUTING FUNDAMENTALS   9

Cloud Computing definition. Types of cloud. Cloud services: Benefits and challenges of cloud computing. Evolution of Cloud Computing. Applications cloud computing. Business models around Cloud – Major Players in Cloud Computing - Issues in Cloud - Eucalyptus - Nimbus - Open Nebula, CloudSim.

UNIT - II CLUSTER – GRID COMPUTING AND CLOUD MODEL   9

Cluster Computing. Grid Computing. Grid Computing Versus Cloud Computing, Key Characteristics of Cloud Computing. Cloud Models: Benefits of Cloud Models. Public Cloud. Private Cloud. Hybrid Cloud. Community Cloud, Shared Private Cloud, Dedicated Private Cloud. and Dynamic Private Cloud.

UNIT- III CLOUD SERVICES AND FILE SYSTEM   9

Types of Cloud services: Software as a Service - Platform as a Service – Infrastructure as a Service - Database as a Service- Monitoring as a Service – Communication as services. Service providers- Google App Engine. Amazon EC2. Microsoft Azure. Sales force.

UNIT - IV VIRTUALIZATION   9

Basics of Virtualization - Types of Virtualization - Implementation Levels of Virtualization - Virtualization Structures - Tools and Mechanisms - Virtualization of CPU, Memory. I/O Devices - Virtual Clusters and Resource management – Virtualization for Data-center Automation. Introduction to MapReduce. GFS, HDFS. Hadoop Framework.

UNIT - V SECURITY IN CLOUD   9

Security Overview – Cloud Security Challenges and Risks – Software-as-a-Service Security – Security Monitoring – Security Architecture Design – Data Security – Application Security – Virtual Machine Security - Identity Management and Access Control – Autonomic Security.

Total No. of Periods: 45

Course Outcomes

- **CO1.** To gain the knowledge of cloud architecture and model.
- **CO2.** Idea about various services involved in cloud
- **CO3.** Gain the knowledge about virtualization technology
- **CO4.** Ability to deploy cloud infrastructure and mobility.
- **CO5.** Develop security and standards in the cloud.

REFERENCES

1. Anthony T. Velte, Toby J. Velte, Robert Elsenpeter, "Cloud Computing A Practical Approach" McGraw-Hill Publication , 2009.
2. Kai Hwang, Geoffrey C Fox, Jack G Dongarra, "Distributed and Cloud Computing, From Parallel Processing to the Internet of Things", Morgan Kaufmann Publishers, 2012.
3. John W.Rittinghouse and James F.Ransome, "Cloud Computing: Implementation, Management, and Security", CRC Press, 2010.
4. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing, A Practical Approach", TMH, 2009.
5. Kumar Saurabh, " Cloud Computing – insights into New -Era Infrastructure", Wiley India,2011.
6. Ronald L. Krutz, Russell Dean Vines, "Cloud Security – A comprehensive Guide to Secure Cloud Computing", Wiley – India, 2010.

220CAE05 - DATA MINING AND DATA WAREHOUSING

Course Objectives :

- To expose the concepts of Data warehousing Architecture and Implementation.
- To learn the association rule mining for handling large data.
- To understand the concept of classification for the retrieval purposes.
- To identify Business applications and Trends of Data mining.

UNIT – I INTRODUCTION   9

Relation to Statistics, Databases – Data Mining Functionalities – Steps in Data mining Process – Architecture of a Typical Data Mining Systems – Classification of Data Mining Systems – Overview of Data mining Techniques.

UNIT – II DATA PREPROCESSING   9

Data Preprocessing – Data Cleaning, Integration, Transformation, Reduction, Discretization Concept Hierarchies – Concept Description: Data Generalization and Summarization based Characterization – Mining Association Rules: Apriori Algorithm, Partition Algorithm and FP-Tree Growth Algorithm.

UNIT – III CLASSIFICATION AND CLUSTERING   9

Classification and Prediction: Issues Regarding Classification and Prediction – Classification by Decision Tree Induction – Bayesian Classification – Other Classification Methods: Genetic Algorithms, Rough Set Theory and Fuzzy Set Approach - Prediction – Cluster Analysis: Types of Data in Cluster Analysis – Categorization of Major Clustering Methods: Partitioning Methods: K- Means and K- Medoids Methods – Hierarchical Methods: BIRCH, ROCK and CHAMELON.

UNIT – IV DATA WAREHOUSING   9

Data Warehousing Components – Multi Dimensional Data Model – Data Warehouse Architecture – Data Warehouse Implementation – Mapping the Data Warehouse to Multiprocessor Architecture – OLAP – Need – OLAP Operations – Categorization of OLAP Tools.

UNIT – V APPLICATIONS   9

Applications of Data Mining – Social Impacts of Data Mining - Tools – An Introduction to WEKA – DB2 – MOA – DBMiner - Python Libraries – Case Studies – Mining WWW – Mining Text Databases – Mining Spatial Databases.

Total No. of Periods: 45

Course outcomes :

- **CO1.** Preprocess the data for mining applications
- **CO2.** Apply data mining techniques and methods to large data sets
- **CO3.** Apply the association rules for mining the data
- **CO4.** Use data mining tools.
- **CO5.** Compare and contrast various classifiers

REFERENCES

1. Parteek Bhatia, "Data Mining and Data Warehousing Principles and Practical Techniques", Cambridge Publication, 2019.
2. Jiawei Han, MichelineKamber, "Data Mining: Concepts and Techniques", Morgan Kaufmann Publishers, 2002, 2nd Edition.
3. Alex Berson, Stephen J. Smith, "Data Warehousing, Data Mining,& OLAP", Tata McGraw- Hill, Edition 2011.
4. Dunham Margaret H . "Data Mining : Introductory and Advanced Topics" , Pearson Education, Inc., 2012.
5. Sean Kelly, "Data Warehousing in Action", John Wiley & Sons Inc., 2007.
6. David Hand, Heikki Mannila, Padharic Symth, "Principles of Data Mining",PHI,2009.
7. Arun K.Pujari,"Data Mining Techniques", University Press, 2013, 3rd Edition.

220CAE06 - DIGITAL MARKETING

Course Objectives

- Know the important and growing role of digital marketing plays in both consumer and organizational target markets.
- Discussing current issues in digital marketing and customer service strategies.
- It focuses on effective CRM: key service delivery elements; and service recovery strategies that lead to the successful implementation of a customer focus.
- The Course aims at developing understating about the concepts, strategies, various functions, operations, activities and problems of Retail business decisions.
- To enhance student's capability to identify and analyze business environment and its opportunities and limitations, Digital copy rights and Electronics commerce and Multimedia and digital video

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 – Mobile Marketing.

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

Course Outcomes:

CO1. Students would be familiar with digital business and the opportunities and obstacles.

CO2. Acquire clarity in digital management practices and Advertising on the search engines.

CO3. Students would be familiar with use of technology in retailing business.

CO4. Analyze and critically evaluate by adding social media and the practice of digital marketing.

CO5. Identify and analyses the different components of Computer based education and training in digital marketing.

REFERENCES

1. Dawn McGruer, "Dynamic Digital Marketing", Wiley Publication, 2020.
2. Damian Ryan , Understanding Digital Marketing : Marketing Strategies for Engaging the Digital Generation. Kogan Page publisher, 3rd Edition, 2014.
3. Ravi Kalakota and Andrew B.Whinston. 'Frontiers of Electronic Commerce'. Pearson Edu Inc.. 9th Ed. 2009.
4. Deepak Bansal. A Complete Guide To Search Engine Optimization, B.R Publishing Corporation. Ist Edition, 2009.
5. Grienstein and Feinman- 'E-commerce –Security. Risk Management and Control'. McGraw-Hill Inc..US. Ed 2. 2009.
6. Jonah Berger. Contagious Why Things Catch On. Simon & Schuster. 2013.
7. E-Marketing: The essential guide to marketing in a digital world. Rob Stokes. Quirk eMarketing (Pty) Ltd. 5th Ed. 2013.

220CAL01 - JAVA PROGRAMMING LAB

Course Objectives

- Understand the fundamental concepts of OOPs.
- Practice Interface, Abstract and Multithreading
- Knowledge in Window Based applications
- Understand Database Connectivity and Network Classes
- Knowledge about an application built using API.

LIST OF EXPERIMENTS

1. Practice Control Structure through simple program.

2. Program to implement interface and packages

3. Program to implement caught and uncaught exception

4. Program to implement Multithreading concept

5. Develop Window Based Application using Menu and Menu Bar.

6. Design an application based on event listener.

7. Develop a simple java database connectivity program.

8. Implement Network Classes and sockets.

9. Write a simple java program to implement Set and sortSet Interface

10. Design and Develop a Chat Application using Java API

Total No. of Periods: 45

Course Outcomes

CO1. Able to Know the fundamental concepts of OOPs.
CO2. To obtain the knowledge about Interface, Abstract and Multithreading Concepts.
CO3. Design and Develop a window based applications.
CO4. Deploy an application with database.
CO5. To Develop and Deploy an application with API.

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220CAL05 DATA MINING AND DATA WAREHOUSING LAB

Course Objectives :

- Practical exposure on implementation of well-known data mining tasks.
- Exposure to real life data sets for analysis and prediction.
- Practice data mining project for a given practical domain.

LIST OF EXPERIMENTS

1. Performing data pre-processing tasks for data mining in WEKA.

2. Implement the algorithm to generate a decision tree and convert it into "if –then – else rules"

3. Implement FP-Growth and Apriori algorithm.

4. Implement association rule mining.

5. Implement clustering algorithms

6. Implement Naïve Bayes classification.

7. Implement K- nearest neighbor classification

8. Implement Linear Regression

9. Implement defining subject area, design of fact dimension table.

10. Implement OLAP, roll up, drill down, slice and dice operation.

Total No. of Periods: 45

Course outcomes :

CO1. The data mining process and important issues around data cleaning, pre-processing and integration.

CO2. Practice the principle algorithms and techniques used in data mining, such as clustering, association mining, classification and prediction.

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320CAT01 – WEB PROGRAMMING

Objectives :

- To Understand the fundamental concept of PHP
- To identify the role of PHP Array and PHP Functions.
- To build an application with database and cookies.
- To understand the file handling and object oriented concepts.
- To Construct the Web Page using PHP Framework.

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 FILE HANDLING & OBJECT ORIENTED CONCEPTS 9

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 – Classes and Objects – Constructors and Destructors Inheritance – Overriding Methods – Overloading Methods.

UNIT – V PHP FRAMEWORKS 9

Frameworks Introduction – Types of Frame works – Codeignter Framework Installation – Query manipulations: Insert – Update – Retrieve – Delete -File Upload – Import / Export Excel – Laravel Framework view.

Total No. of Periods: 45

Course outcomes :

CO1: Ability to understand the fundamental concept of PHP
CO2: To Implement PHP Array and PHP Functions
CO3: Work with database and cookies for real time applications,
CO4: Work with Web application using File handling along with Object Oriented Concept.
CO5: Design and develop applications using advanced frameworks.

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, 2015.
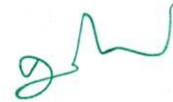
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320CAT02 – MOBILE APPLICATION DEVELOPMENT

Objectives :

- To learn the basic concept of Android features, tool and anatomy.
- To understand the functionalities of Activities, Intents and Components
- To Know the role of Views and Data Persistence
- To Build an Application with Messaging, Network and Location Based Services
- To learn the basic Concept of IoS.

UNIT - I INTRODUCTION   9

Introduction to Android- Features of Android – Architecture of Android – Android device in the market – Obtaining the required tools: Eclipse- Android SDK – Android Development tool(ADT) – Creating Android Virtual Devices- Creating your first application- Anatomy of an application

UNIT - II ACTIVITIES, INTENTS and COMPONENTS   9

Understanding Activities: Applying Style and Themes to Activity- Displaying a Dialog Window- Displaying a Progress Window-Linking Activities Using Intents – Calling Built in Application using Intents- Understanding the component of a screen- Adapting to display orientation- Managing changes to screen orientation.

UNIT - III VIEWS AND DATA PERSISTENCE   9

Basic Views- Picker Views- List Views – Using Images Views to Display Pictures – Using Menus with Views – Some Analog View: Analog Clock View-Digital Clock View –Web View- Saving and Loading User Preferences – Persisting Data to Files – Creating and Using Databases: insert, delete, update, search database –Building the database with applications.

UNIT – IV MESSAGING, NETWORKING AND LOCATION BASED SERVICES   9

Sharing data in android-Using a Content provider: Projection-Filtering-Sorting-Creating own content provider- SMS Messaging- Sending E-mail – Networking – Displaying Maps – Getting Location Data – Creating your own Services.

UNIT – V 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.

Total No. of Periods: 45

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Course Outcomes:

CO1: Gain Knowledge about Android features, tool and anatomy.
CO2: Design an application using activities, intent and components
CO3: Identified the role of View and Persistence
CO4: Implement Android Application using Messaging, Location Based Services
CO5: Gain Knowledge about IoS.

REFERENCES

1. Wei-Meng Lee, "Beginning Android Application Development", Wiley 2011
2. Jeff Mc Wherter and Scott Gowell, "Professional Mobile Application Development", Wrox 2012.
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.

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320CAT03 – BIG DATA MANAGEMENT

Objectives :

- To learn the basic concept of data and NoSQL Data Management.
- To understand fundamental of Hadoop.
- To build MAPREDUCE Applications.
- To compare the process of PIG, HIVE and HBASE.
- To understand data streaming and Hadoop Clustering

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

Course Outcomes:

CO1: Gain Knowledge about data and NoSQL Data Management
CO2: Ability to understand fundamental of Hadoop.
CO3: Design and Develop a simple Map Reduce Applications
CO4: Illustrate role of Pig, HIVE and HBase
CO5: Gain Knowledge on Data Streaming and Hadoop Clustering

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3. Tom White, "Hadoop: The Definitive Guide: Storage and Analysis At Internet Scale", Fourth Edition, Oreilly Media, 2015.
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5. Bill Franks, "Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics", John willey & sons 2012.

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320CAE03 - AGILE SOFTWARE DEVELOPMENT

Objectives :

- Know the basic Constructs of Agile Software Development
- Understand agile software development practices
- Demonstrate Agile development and testing techniques
- Know the benefits and pitfalls of working in an Agile team

UNIT – I FUNDAMENTALS OF AGILE   9

The Genesis of Agile, Introduction and background, Agile Manifesto and Principles, Overview of Scrum, Extreme Programming, Feature Driven development, Lean Software Development, Agile project management, Design and development practices in Agile projects, Test Driven Development, Continuous Integration, Refactoring, Pair Programming, Simple Design, User Stories, Agile Testing, Agile Tools

UNIT – II AGILE SCRUM FRAMEWORK   9

Introduction to Scrum, Project phases, Agile Estimation, Planning game, Product backlog, Sprint backlog, Iteration planning, User story definition, Characteristics and content of user stories, Acceptance tests and Verifying stories, Project velocity, Burn down chart, Sprint planning and retrospective, Daily scrum, Scrum roles – Product Owner, Scrum Master, Scrum Team, Scrum case study, Tools for Agile project management

UNIT – III AGILE TESTING   9

The Agile lifecycle and its impact on testing, Test-Driven Development (TDD), xUnit framework and tools for TDD, Testing user stories - acceptance tests and scenarios, Planning and managing testing cycle, Exploratory testing, Risk based testing, Regression tests, Test Automation, Tools to support the Agile tester

UNIT – IV AGILE SOFTWARE DESIGN AND DEVELOPMENT   9

Agile design practices, Role of design Principles including Single Responsibility Principle, Open Closed Principle, Liskov Substitution Principle, Interface Segregation Principles, Dependency Inversion Principle in Agile Design, Need and significance of Refactoring, Refactoring Techniques, Continuous Integration, Automated build tools, Version control

UNIT - V INDUSTRY TRENDS   9

Market scenario and adoption of Agile, Agile ALM, Roles in an Agile project, Agile applicability, Agile in Distributed teams, Business benefits, Challenges in Agile, Risks and Mitigation, Agile projects on Cloud, Balancing Agility with Discipline, Agile rapid development technologies

Course Outcomes :

CO1: Understand Agile development using Test Driven Development
CO2: Understand the Agile Scrum framework.
CO3: Perform testing activities within an Agile project
CO4: Apply design principles and refactoring to achieve Agility
CO5: Deploy automated build tools, version control and continuous integration

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2. Agile Testing: A Practical Guide for Testers and Agile Teams By Lisa Crispin, Janet Gregory, Addison Wesley Publisher, 1st Edition, 2009.
3. Agile Software Development, Principles, Patterns and Practices By Robert C. Martin, Prentice Hall Publisher, 1st Edition, 2006.
4. Agile Software Development: The Cooperative Game By Alistair Cockburn Addison Wesley Publisher, 2nd Edition, 2008.
5. User Stories Applied: For Agile Software By Mike Cohn Publisher: Addison Wesley, 1st Edition, 2004.

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OPEN ELECTIVE – III

320CAE06 - PROFESSIONAL COMMUNICATION

Objectives :

- To facilitate students amplify suitable language skills for academic and professional purposes
- To inculcate and develop strategies to understand and to increase students' efficiency in their academic and general reading
- To strengthen students' vocabulary power
- To familiarize students with different functions of technical and scientific English
- To coach the students in augmenting the technical writing skills like writing letters and reports in formal and business situations
- To strengthen Students' Creative skill

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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Course outcomes :

CO1: The ability to strengthen technical writing and speaking
CO2: The ability to be proactively read, listen, speak and present facts in a persuasive manner in both oral and written medium
CO3: The ability to interact, translate and delegate information,
CO4: The ability to face various levels of competitive examinations to upgrade educational and career options
CO5: The ability to face any challenge in the work environment.

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.

320CAL02 - MOBILE APPLICATION DEVELOPMENT LAB

Objectives:

- To know about various Controls, Views and activity for developing mobile applications.
- To Implement various resources like video, image, mobile call, SMS etc.,
- To Deploy Database for Mobile Applications
- To Deploy interactive Mobile Application and MVC Framework

LIST OF EXPERIMENTS

1. Design a simple Mobile Application using Button Control
2. Design a User Registration Form
3. Implement built in application using intent
4. Display notification on the Status Bar
5. Design Image and video album
6. Design a simple application using database
7. Design an application using Menus with Views
8. Implement notification through

    a. SMS

    b. E–Mail

    c. Location based services
9. Display text using iOS.
10. Create an interactive iOS application.

Total No. of Periods : 45

Course outcomes :

  CO1: Getting Practices with controls, views and activities
  CO2: Knowledge about various resources
  CO3: Create application with database connection
  CO4: Be able to develop useful mobile applications for the current scenario.

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EMPLOYABLITY ENHANCEMENT COURSE

320CAL04 – EXECUTIVE COMMUNICATION LAB

Objectives :

- To equip students with effective receptive and productive skills in English.
- To help them develop their soft skills and interpersonal skills, which will make the transition from college to workplace smoother and help them excel in their job.
- To enhance the performance of the students at Placement Interviews, Group Discussions and other recruitment exercises.

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, Conflict Management, Inter Dependency, Assessment of Team-Based Projects.
Time Management: Goal Setting, Effective Time Management.
Interpersonal Skills: Negotiations, Listening Skills, Social Skills, Assertive Skills, Cross-Cultural Communications, Organizing functions and Meetings
Leadership Skills: Concepts of Leadership, Leadership Styles, Insights from Great Leaders.
Soft skills – video clips

2. Listening Comprehension:
   a) Phonetics
   b) Conversations – video clips

3. Reading comprehension:

4. Presentation skills – video clips
   Preparing For Effective Presentations,
   Presentation For Small Groups And Large Groups,
   Marketing And Business Presentations

5. Body language: Importance of Non-Verbal Communication

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

7. Resume / Letter writing/E-Mail Etiquettes

8. Report preparation

9. Grammar: Concord, Error Correction, Editing etc.,

Total No. of Periods: 45

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Course outcomes :

CO1: The ability to strengthen technical writing and speaking
CO2: The ability to be proactively read, listen, speak and present facts in a persuasive manner in both oral and written medium
CO3: The ability to interact, translate and delegate information
CO4: The ability to face various levels of competitive examinations to upgrade educational and career options

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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.
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