

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
Post Graduate Diploma in Computer Application
Semester - II
Effective from: July - 2012

Paper No. : 201

Paper Title : Object Oriented Programming

- 1. Procedure Oriented Programming Vs. Object Oriented Programming**
- 2. Object Oriented Programming Using VB.Net**
 - 2.1. Classes and Objects
 - 2.2. Encapsulation & Data Hiding
 - 2.3. Properties
 - 2.4. Constructors
 - 2.5. Finalize & Dispose
 - 2.6. Object Serialization
 - 2.7. Abstract Classes
 - 2.8. Delegates
- 3. Polymorphism**
 - 3.1 Functional Overloading & Overriding
 - 3.2 Dynamic Polymorphism
- 4. Inheritance**
 - 4.1 Types of Inheritance
 - 4.2 Inheritance Keywords
 - 4.3 Use of Constructor during inheritance
 - 4.4 Interfaces
- 5. Assemblies**

Reference Books:

1. Object Oriented Programming with Visual Basic .Net, J P Hamilon, O'reilly
2. Object Oriented Programming with Visual Basic .Net , Alistair McMonnies, Pearson
3. An introduction to Object Oriented Programming with Visual Basic .Net, Danier R Clark
4. Mastering Visual Basic .NET Database Programming - Bilgin - BPB Publication
5. Professional VB.NET, Fred Barwell, et al - Wrox Publication
6. Microsoft Visual Basic .NET Step By Step, Michael Halvorson, PHI

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Paper No. : 202

Paper Title : Open Source Web Based Programming

1. Introduction to Internet

2. Introduction to Web Technology

2.1. HTML

2.1.1. HTML tags

2.2. Javascript

2.2.1. Fundamentals of JavaScript

2.2.2. Syntax of JavaScript

2.2.3. Use of JavaScript in HTML

2.2.4. Validation using JavaScript

2.3. CSS

2.3.1. What is CSS?

2.3.2. Advantage & Disadvantage of CSS

2.3.3. Creating CSS

2.3.4. Use of CSS in HTML

2.3.5. Formatting HTML page using CSS

3. Introduction to PHP

3.1. Installation of PHP and mySql

3.2. PHP configuration in IIS & Apache Web Server

3.3. Features of PHP

4. Writing PHP

4.1. How PHP code is parsed

4.2. Embedding PHP and HTML

4.3. Executing PHP and viewing in Browser

4.4. Datatypes

4.5. Operators

4.6. PHP variables: static and global variables

4.7. Comments in PHP

5. Control Structures

- 5.1. Condition statements
 - 5.1.1. If..Else
 - 5.1.2. Switch
 - 5.1.3. ? operator
- 5.2. Loops
 - 5.2.1. While
 - 5.2.2. Break statement
 - 5.2.3. Continue
 - 5.2.4. Do..While
 - 5.2.5. For
 - 5.2.6. For each
- 5.3. Exit, Die, Return
- 5.4. Arrays in PHP

6. Working with Data

- 6.1. FORM element, INPUT elements
- 6.2. Validating the user input
- 6.3. Passing variables between pages
 - 6.3.1. Passing variables through a GET
 - 6.3.2. Passing variables through a POST
 - 6.3.3. Passing variables through a REQUEST

7. PHP functions

- 7.1. String Functions
- 7.2. Array Functions
- 7.3. Mathematical Functions
- 7.4. File System Functions
- 7.5. Date and Time Functions
- 7.6. Misc. Function

8. Handling sessions and cookies

- 8.1. Concept of Session
- 8.2. Starting session
- 8.3. Modifying session variables
- 8.4. Unregistering and deleting session variable
- 8.5. Concept of Cookies
- 8.6. Handling of Cookies

9. Object Oriented Features of PHP

10. Classes and Objects Use Of constructors Serialization

11. File and Directory Handling

12. MySQL Database Server

- 12.1. Configuring the MySQL Server
- 12.2. Starting MySQL Server
- 12.3. MySQL Tables
- 12.4. Displaying MySQL Database
- 12.5. Adding and removing user access
- 12.6. Checking and fixing database

13. Error Handling

Reference Books:

1. Beginning PHP, Apache, MySQL Web Development -Elizabeth Naramore, Jason Gerner , Yann Le Scouarnec, Jeremy Stolz,Michael K. Glass, Gary Mailer - By Wrox Publication
2. Beginning PHP and MySQL: From Novice to Professional, Third Edition - W. Jason Gilmore – Apress, 2008, ISBN : 1590598628
3. Beginning PHP 5.3 - by Matt Doyle - By Wrox Publication , ISBN: 978-0-470-41396-8
4. PHP and MySQL Bible – Tim Converse and Joyce Park with Clark Morgam By Wiley INDIA
5. Beginning Ajax with PHP -Lee Babin - Apress, oct 2006, ISBN 1590596676
6. PHP Object-Oriented Solutions - David Powers , Friends of ED, 2008
7. PHP MySQL Website Programming: Problem - Design - Solution - Chris Lea, Mike Buzzard, Jessey White-Cinis & Dilip Thomas - Apress, 2003, ISBN 1-59059-150-X
8. Beginning PHP 5, Apache, and MySQL Web Development - Elizabeth Naramore, Jason Gerner, Yann Le Scouarnec, Jeremy Stolz, Michael K. Glass-Wrox Press,ISBN 0-1308-8903-2
9. PHP MySQL Website Programming - Chris Lea, Mike Buzzard, Jessey White-Cinis & Dilip Thomas - Wrox Press Inc, ISBN 1-861008-27-9
10. SAMS Teach Yourself PHP MySQL and Apache in 24 Hours - Julie C Meloni-Sams, ISBN 067232489X
11. PHP manual : <http://www.php.net>
12. HTML, DHTML, Java Script, Perl & CGI, Ivan Bayross BPB Publication.
13. Internet and Web Design, Ramesh Bangia ,New Age International

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Paper No. : 203

Paper Title : Relational Data Base Management System

1 Overview of Database Architecture : Oracle

- 1.1 Introduction to Database and Instance
- 1.2 Database Structures: Tablespace, Data Files, Control Files and Redo Log Files
- 1.3 Database Instance : Memory structure & Process Architecture
- 1.4 Database schema and schema objects

2 SQL Commands

- 2.1 DDL statements : CREATE TABLE, ALTER TABLE, DROP TABLE
- 2.2 DML statements: SELECT, INSERT, UPDATE, DELETE, TRUNCATE
- 2.3 CREATE SEQUENCE, ALTER SEQUENCE, DROP SEQUENCE,
- 2.4 CREATE INDEX, ALTER INDEX, DROP INDEX,
- 2.5 ROLLBACK, COMMIT, SAVEPOINT
- 2.6 CREATE VIEW, DROP VIEW

3 Built-in Functions & Group Functions in Oracle

4 PL/SQL:

- 4.1 Data types in PL/SQL
- 4.2 User-defined RECORD data type
- 4.3 Control statements: IF, LOOP, WHILE, FOR
- 4.4 Cursor: Explicit & implicit cursor, Passing parameter to cursor, Declaring cursor variables, Cursor for loop
- 4.5 Exception Handling
- 4.6 Stored Procedures, Local Procedures & Functions,
- 4.7 Packages
- 4.8 Triggers

Reference Books:

- 1. Oracle: A Beginner's Guide - Michael Abbey, Michael J. Corey - Oracle press
- 2. Oracle essential - Rick Greenwald, Robert Stackowiak, Jonathan Stern - O'Reilly Media
- 3. Database Systems Using Oracle: A Simplified Guide to Sql and Pl/Sql - Nilesh Shah – PHI
- 4. SQL & PL/SQL Programming Language of Oracle – IVAN BAYROSS -
- 5. Oracle PL/SQL Programming – Feuerstein & Pribyl, O'Reilly
- 6. Database System Concepts - Henry F. Korth & Abraham Silberschatz - McGraw-Hill

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Paper No. : 204

Paper Title : Software Engineering

1. Introduction to software engineering.

- 1.1. Software, software characteristics, software engineering
- 1.2. Software development phases -Requirement analysis, design, coding, testing
- 1.3. Role of Software Engineer/Analyst/Users in various phases of SDLC
- 1.4. Software maintenance
- 1.5. Effort distribution
- 1.6. Software development process models: Waterfall model, prototyping, RAD,
- 1.7. Evolutionary software process models

2. Requirement Analysis

- 2.1. Study of requirements
- 2.2. Fact finding tools & techniques
- 2.3. Structured analysis
- 2.4. Data modeling using ER Model
- 2.5. Process modeling using Data flow diagrams
- 2.6. Concept of OO modeling through STD (State transition diagram)
- 2.7. Data dictionary

3. Requirement specifications

- 3.1. Characteristics and Components of SRS
- 3.2. Requirement specification document

4. System Design

- 4.1. Design methodology: Structured design, OO Design
- 4.2. UML tools and techniques for web-based/OO Applications
- 4.3. Class hierarchy diagram, Use-Case diagram, Sequence Diagram
- 4.4. Design documentation
- 4.5. Concept of Reverse engineering

5. Testing & Implementation

- 5.1. Testing fundamentals
- 5.2. Functional and Structural testing
- 5.3. Testing process
- 5.4. Implementation process

6. Software Reliability & Quality

Case studies may be carried out at appropriate stages of the course.

Reference Books:

1. Software engineering - A Practitioner's Approach - Roger S Pressman - McGrawth Hill Intl.
2. Software Engineering – Ian Sommerville
3. An integrated approach to software engineering - Pankaj Jalote - Narosa Publication
4. Fundamentals Of Software Engineering - Rajib Mall - PHI
5. Elements of system analysis - Marvin Gore - Galgotia Publicatio

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Paper No. : 205

Paper Title : Practical - IV

Practical based on Paper No. 201 (C++)

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Paper No. : 206

Paper Title : Practical - V

Practical based on Paper No. 202 (PHP)

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Paper No. : 207

Paper Title : Practical - VI

Practical based on Paper No. 203 (Oracle)

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Paper No. : 208
Paper Title : Project

Project work of 3 months duration.