Syllabus for Fourth Semester

PROGRAMMING IN JAVA

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1. **Introduction to Java**
   - The Basics of Java-A brief history of Java, The Java, Architecture, Java Features. Importance of Java to the Internet. Java Applets and Applications, Fundamentals of Object programming, concepts of OOP, Benefits of OOP, Java and C++, Java Environment, Java Development kit, Application programming Interface (API), Getting started with JDK, Java program structure, Using Java with other Tools.

2. **Language Basics**
   - Java tokens, Java character set, keywords, Identifiers, Literals, Separators, constants, Variables. Data types, type Casting, Constants, Variables and their Scope, Operators and Expressions, Arithmetic Operators, Relational & Conditional Operators, Logical Operators, Assignment Operators, Increment & Decrement, Bitwise Operators, Special Operators, Precedence of Operators, Control Flow statements-If & If else statements, switch Statement, for loop, while do loop, Branching.

3. **Objects and Classes in Java**
   - Introduction to classes, defining a class. Creating objects, methods, Constructors and Access Specifies, Application of Constructor, Parameterized constructors, Overloading Methods and Constructors, Access control Modifiers: Public. Private, and protected, Static. Final and Abstract Modifiers, Inheritance and Method Overriding. Inheritance basics, Method overriding.

4. **Arrays, Strings and Vectors**
   - Arrays, One-dimensional array, Multidimensional array, Strings, String class, Working with Strings, String Buffer Class, Vector and wrapper class, Vector Constructors, Working with vector methods, Wrapper Class.

5. **Packages and Interfaces**
   - Using Java Interfaces, Defining and Interface, Implementing and Interface, Extending and Interface, Using Java Packages, Defining a Package, Brief discussion on CLASSPATH, Access Protection, Importing a package, Java API Package,

6. **Exception handling**
   - Introduction to Exception Handling, Why use Exception Handling, Fundamentals of Exception Handling, Exceptions & their types, Common Exceptions, Using Exception Handling, Using try and catch, Multiple Catch Statements, Nested try Statements, Methods available to Exceptions, Throwing your own Exception.

7. **Applet programming.**
   - Writing Applets, The Basics of Applets, Life Cycle of an Applet, Painting the Applet, The Applet Tag, Security Restrictions when using Applets, Taking, Advantage of the Applet API, Finding and Loading Data Files, Displaying short Status Strings. Displaying Documents in the Browser, Playing Sounds Defining and Using Applet Parameters.

8. Working in Graphics

- The Graphic class. java.awt.Graphics, Uses of classjava.awt.Graphics, Custom Painting, Drawing Lines, Drawing Lines, Drawing Rectangles. Drawing Ellipses and Circles, Drawing Arcs, Drawing Polygons.

Practicals :- Excercise Based on above theory concepts.

Reference Books

1. Programming in Java- Dr. Amita Dev, ISTE Publication.
2. Mastering Java 2   -   John Zukowski
3. Programming in Java-   E. Balaguruswamy
4. The Complete Reference Java 2- Herbert Schildt

Web Designing

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1. **The Need for XML Web Services:**

   a) Describing the evolution of distributed applications.
   b) Identifying the problems with traditional distributed application architectures and technologies.

2. **Web Service Architectures:**

   a) Identifying how Web service architectures are a type of service-oriented architecture.
   b) Describing the elements of a Web service architecture and explaining their roles.
   c) Describing the Web service programming model.

3. **The Underlying Technologies of XML Web Services:**

   a) Describing the structures of an HTTP request and response.
   b) Issuing HTTP POST and GET requests and processing the responses by using the .NET Framework.

4. **Consuming XML Web Services:**

   a) Explaining the structure of a Web Service Description Language (WSDL) document.
   b) Explaining the Web services discovery process.

5. **Implementing a Simple XML Web Service**

   a) Creating a Web service project.
   b) Implementing Web service methods, exposing them, and controlling their behavior.

6. **Publishing and Deploying XML Web Services**

   a) Explaining the role of UDDI in Web services.
   b) Publishing a Web service in a UDDI registry by using the UDDI SDK.

7. **Securing XML Web Services**

   a) Identifying the differences between authentication and authorization.
   b) Explaining how to use the security mechanisms that Microsoft Internet Information Services (IIS) and Windows provide for authentication.

8. **Designing XML Web Services**

   a) Identifying the restrictions that are imposed on data types by the various Web services protocols.

b) Explaining how the use of Application and Session state can affect the performance and scaling of Web services.

c) Explaining how to use output and data caching to improve Web service performance.

d) Implementing caching in a Web service.

Practicals:

1. Including java Applets
1. Adding java Applets to your pages
2. Providing Interactive content
3. Maintaining Security on Site

2. Using a Script Language
1. Inserting Scripts into HTML
2. Adding Data, Time and user information to a page
3. Using Scripts to interact with the user
4. Checking from a Mandatory Form field
5. Creating an interactive game.

3. Dynamically Changing page Content
1. Adding the change elements
2. Using Script to modify content
3. Handling Mouse Actions
4. Adding a Pull-down Menu
5. Drag Drop Contents
6. Animation

4. Active Server Pages and Server Side Scripting
1. Understanding Standards and Technology on the internet
2. HTML versions
3. Browser Technology
4. Web Server Technology
5. Understanding Microsoft Active Server
6. How Active Server work
7. Looking at client Server Processing
8. Comparing Active Server to Client Side Processing

5. VB Script
1. Using VB Script
2. Why use a Scripting language
3. VB Script language elements
4. Using forms with VB script
5. Using Active-x and include files with Active Server
6. Using Server Side includes
7. Inserting Active-x Controls

6. Manages States and Events with Application & session objects
1. Active server pages solves the problem of managing user session
2. Tracking user session: The web challenge.
3. Active server pages to the rescue.

REFERENCE BOOKS

1. Web development with visual basic - Davis Chapman
2. Programming in visual basic net - Julia casebradley,C.Millspaugh
3. Practical HTML - Lee Anne Phillips

NETWORK TECHNOLOGIES AND MANAGEMENT

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1.   Networks and Services

2.   Approaches to Network Design
   a)   Network function and network topology
   b)   Message, Packets, circuit switching
   c)   Internet and Packet switching

3.   The Company Network
   a)   Introduction
   b)   Linking to remote offices
   c)   Communication Data Processing

4.   Basic information theory
   a)   Data Compression
   b)   Huffman Coding
   c)   Basic Ziv-lemple Coding
   d)   Arithmetic coding
   e)   Entropy reduction
   f)   The Selection
   g)   Data Encipherment

5.   Network Management
   a)   Facilitating Installation
   b)   Monitoring the Network
   c)   Storage Management
   d)   Aspects of Security
   e)   Problem Management
   f)   Workload Management
   g)   Distributed System

6.   Application layer issues
   a)   Distributed operating System
   b)   Distributed database

REFERENCE BOOKS

1.   Computer networking - James F.kurose,Keith w.Ross
2.   Computer network - Andrew S. Tanenbaum
3.   Computer networks & Communications - V.K jain.Naveena bajaj
4.   Internetworking with TCP/IP.volume – I - Douglas E-coner

ENTREPRENEURSHIP DEVELOPMENT AND MANAGEMENT

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RATIONALE

Creating awareness regarding entrepreneurial traits entrepreneurial support system opportunity identification project report preparation & understanding of legal & managerial aspects can be helpful in motivation technical student to start their own small scale business/enterprise.

DETAILED CONTENTS

(1) Entrepreneurship
- Concept/Meaning
- Need
- Competencies/Qualities of an entrepreneur

(2) Entrepreneurial Support System
- District industry centers (DICs)
- Commercial banks.
- State Financial Corporation
- Small industries Service institutes (SISIs). Small industries development bank of India (SIDBI), National bank of agriculture and rural development (NABARD), National Small industries corporation (NSIC) and other relevant institution/organizations at state level.

(3) Market survey and opportunity identification (business planning)
- How to start a small scale industry.
- Procedures for registration of small scale industry.
- List of items reserved for exclusive manufacture in small scale industry
- Assessment of demand and supply in potential areas of growth.
- Understanding business opportunity
- Considerations in product selection.
- Data collection for setting up small ventures.

(4) Project Report Preparation
- Preliminary project Report
- Techno-Economic feasibility report
- Project Viability

(5) Business Organizations
- Salient features of sale proprietary ship
- Partnership private and public limited companies
- Cooperative societies and public sector
- Role of public and private sectors in growth of economy and their social obligations towards society.
- Monopoly and price restrictions.

(6) Managerial aspects of small business

- Principles of management (Definition, functions of management viz. planning, organization, coordination and control.)
- Operational aspects of production.
- Inventory management
- Basic principles of financial management
- Marketing techniques
- Personnel management
- Importance of communication in business

(7) Legal aspects of small business
- Elementary knowledge of income tax, sales tax, patent rules, excise duty.
- Factory act and payment of wages act.

(8) Environmental Considerations
- Concept of ecology & environment
- Factors contributing to air, water, Noise pollution.
- Air, Water & noise pollution standards & control

(9) Industrial Safety and House Keeping.
- Magnitude and cost of accident
- Causes of accidents
- Job safety analysis
- Safety planning and its implementation safety education instructions and visual aids
- Obligatory provisions
- First aid
- Investigations of accidents
- Fire fighting, BIS, Standards
- Security watch and ward.

(10) Miscellaneous
- Human relations & performance in organization
- Industrial relation & Disputes
- Relations with subordinates peers & superiors
- Leadership
- Labour Welfare
- Workers participation in management

(11) Motivation
- Factors determining motivation
- Characteristics of motivation
- Methods of improving Motivation
- Incentives-pay, promotion, rewards

REFERENCE BOOKS
(1) A hand book of Entrenpurship-B.S Rathore and Dr. J.S. Saini
(2) Environmental Development by CB Gupta and P. Srinivasan
(3) Environmental and pollution awareness Sharma BR
(4) Total quality management-Dr. D.D. Sharma

LANGUAGE LAB ENGLISH/FOREIGN LAB

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- Geographical expressions
- Sports and pastimes
- Food, eating habits
- Parts of body, ailments
- Housing
- Savings and expenses
- Daily routine, regular activities
- Preferences
- Describe self and family

Preferences
Time, days of the week, calendar
Weather, seasons
Shopping
Colors
Social relationships
Opinions
School activities
Personal information