

Course Number: IAC-SOFT-WDAD
Web Design and Application Development

Session 1 (10 Hours) Client Side Scripting	Session 2 (10 Hours) Server Side Scripting - I	Session 3 (10 hours) Database	Session 4 (10 hours) Server Side Scripting- II
<ol style="list-style-type: none"> 1. Structure of a web page 2. Basic and advanced HTML 3. Cascading Style Sheets (CSS) 4. JavaScript 5. DHTML 6. XML, XHTML 7. Document Object Model (DOM) 8. Project on Client Side Scripting 	<ol style="list-style-type: none"> 1. Introduction to Server side scripting 2. Installation and Configuration of PHP 3. Variables, Operators 4. Conditional Statement 5. Loop 6. Array, String 7. Functions 8. Forms 9. Classes and Objects 10. Project on basic PHP 	<ol style="list-style-type: none"> 1. Introduction to database (MySQL) 2. Tables, Fields, Records, Data type 3. MySQL Create, Insert 4. MySQL Update, Delete 5. MySQL Select, Where, Order by 6. Relational Database design and ER Diagram 7. MySQL Inner Outer Join, complex query, sub-query 8. PHP and MySQL 9. Project on database 	<ol style="list-style-type: none"> 1. Session variables, cookies 2. PHP date, PHP include 3. PHP file, file upload, File system, directory 4. PHP error, exception, filter 5. PHP and AJAX, XMLHttpRequest, AJAX Database 6. PHP HTTP, FTP, XML, libxml 7. PHP email, secure email 8. Final project on web application development.

Course Number: IAC-OS-LSASC
Linux System Administration and Server Configuration

Session 1 (10 hours)	Session 2 (10 hours)	Session 3 (10 hours)	Session 4(10 hours)
<ol style="list-style-type: none"> 1. Introduction to Multi user and Multi tasking OS, Introduction to Unix 2. Linux System Installation 3. Linux System Operation 4. Linux System Administration 5. Use of important commands, tar, gzip, unzip & scheduler 6. Linux file/directory owner's permission and attributes 7. Linux file system, mounting and un-mounting 8. Managing user account 	<ol style="list-style-type: none"> 1. Installation of Programs in Linux. 2. Introduction to Linux Servers 3. Samba Server Configuration 4. NFS Server Configuration 5. Telnet Server Configuration 6. SSH Server Configuration 	<ol style="list-style-type: none"> 1. FTP Server Configuration 2. Web Server (http) Configuration 3. PHP and MySQL Server Configuration 4. Squid Proxy Server Configuration 	<ol style="list-style-type: none"> 1. Mail Server Configuration and Web based Mail Server Configuration 2. DHCP Server Configuration 3. DNS Server Configuration

Course Number: IAC-DB-DMA
Database Management and Administration

Session 1 (10 hours)	Session 2 (10 hours)	Session 3 (10 hours)	Session 4 (10 hours)
<ol style="list-style-type: none"> 1. Introduction: Tables, Fields, Records, Data Types 2. SQL Commands: Create, Select, Insert, Update, Delete, Where, Order by, Aggregation 3. Closer look at String and Date functions 4. Sub-query 5. Join, Union, Intersection, Minus 6. Views, Clusters, Sequence 	<ol style="list-style-type: none"> 1. Relational Database Design and ER-Diagram 2. Introduction to PL-SQL 3. Executable commands, exception handling 4. Triggers 5. Procedures 6. Functions 7. Packages 8. Using Native Dynamic SQL and DBMS_SQL 	<ol style="list-style-type: none"> 1. Complex Queries 2. Text queries and text indexes, Index Sets 3. Oracle text for text-searches, Adding Text to the Databases 4. Backup and Recovery 5. Import, Export, Source View 6. Using SQL loader, 7. Working with table space 8. Encryption and Decryption 	<ol style="list-style-type: none"> 1. Basic Oracle Security 2. Users, Roles, Privileges 3. Granting Resources 4. Initial Security Configuration 5. Creating a Logon trigger 6. Creating a Security Policy and applying it to tables 7. Test VPD, Column-level VPD, disabling VPD 8. Using Policy Groups

Course Number: IAC-PROG-C#-ASP.NET

Application Development using C# ASP.NET

Session 1 (10 Hours) C# ESSENTIALS	Session 2 (20 Hours) .NET FRAMEWORK USING C#	Session 3 (10 hours) ASP.NET ESSENTIALS USING C#
<ol style="list-style-type: none">1. NET: What You Need To Know2. C# for the Sophisticated Programmer3. Object-Oriented Programming in C#4. C# and the .NET Framework5. Introduction to Windows Forms	<ol style="list-style-type: none">1. .NET Fundamentals2. Class Libraries3. Assemblies, Deployment and Configuration4. Metadata and Reflection5. I/O and Serialization6. .NET Programming Model7. .NET Security8. Interoperating with COM and Win329. Database Programming Using ADO.NET	<ol style="list-style-type: none">1. ASP.NET and Web Forms2. Web Applications Using Visual Studio3. Introduction to Web Services

Course Number: IAC-PROG-JAVA-WEB

Java Enterprise Web Programming: an Introduction to Java Programming and Web Development using Framework

Introduction

There are now billions of Java enabled devices worldwide and as skilled Java Programmers are now in demand. This course will enhance participants' basic Java skills which have been acquired through the completion of a standard Java course.

Course Content

Creating Java Applications:

Introduction to Java Applications, Displaying Text with printf, Variables and Introducing Arithmetic Operators, Equality and Relational Operators.

Using Classes and Objects:

Classes, Objects, Methods and Instance Variables, Declaring Class and Methods, Instantiating an Object of a Class, Declaring a Method with a Parameter, Instance Variables, set Methods and get Methods, Primitive Types vs. Reference Types, Initializing Objects with Constructors, Floating-Point Numbers and Type double, Creating Packages

Control Statements:

if Single-Selection Statement, if ... else Double-Selection Statement, while Repetition Statement, Counter-Controlled Repetition, Sentinel-Controlled Repetition, Nested Control Statements, Compound Assignment Operators, Increment and Decrement Operators, Primitive Types, Essentials of Counter-Controlled Repetition, for Repetition Statement, do ... while Repetition Statement, switch Multiple-Selection Statement, break and continue Statements, Logical Operators.

Methods:

Static Methods, static Fields, Notes on Declaring and Using Methods, Argument Promotion and Casting, Java API Packages, Generalized Scaling and Shifting of Random Numbers, Scope of Declarations, Method Overloading.

Arrays:

Declaring and Creating Arrays, Examples Using Arrays, Enhanced for Statement, Passing Arrays to Methods, Multidimensional Arrays

Classes and Objects:

Controlling Access to Members, Referring to the Current Object's Members with the this Reference, Overloaded Constructors, Default and No-Argument Constructors, Composition, Enumerations, Garbage Collection and Method finalize, final Instance Variables

Inheritance:

Superclasses and Subclasses, protected Members, Relationship between Superclasses and Subclasses, Creating an Inheritance Hierarchy, Using protected Instance Variables, Using private Instance Variables, Constructors in Subclasses, Software Engineering with Inheritance

Polymorphism:

Polymorphism Examples, Demonstrating Polymorphic Behavior, Abstract Classes and Methods, Polymorphic Processing, Operator instanceof and Downcasting, Allowed Assignments Between Superclass and Subclass Variables, final Methods and Classes, Creating and Using Interfaces, Declaring Constants with Interfaces, Common Interfaces of the Java API

Exception Handling:

Exception-Handling Overview, When to Use Exception Handling, Java Exception Hierarchy, finally Block, Stack Unwinding, printStackTrace , getStackTrace and getMessage, Chained Exceptions, Declaring New Exception Types, Assertions

Multi-threading

Basics of multi-threading, creating threads with Thread and Runnable, Synchronized blocks and synchronized methods, Thread join, sleep, yield, Timer class

MVC Architecture

What is MVC ?, Models, Views, Controllers, Routes

Jakarta Struts MVC Framework

Overview of 3 – tier Jakarta Struts Framework, Introduction to the framework components, How to configure Struts Framework

The Presentation Tier

Java Server Pages:

JavaServer Pages Overview, A First JavaServer Page Example, Implicit Objects, Scripting, Scripting Components, Scripting Example, Standard Actions, Action, Action, Action, Action, Directives, page Directive, include Directive, Custom Tag Libraries (Java beans and others), Creating a Custom Tag, Tag Attributes, Evaluating the Body of a Custom Tag

The Logic/Application Tier

Servlets:

Servlet Overview and Architecture, Interface Servlet and the Servlet Life Cycle, HttpServlet Class, HttpServletRequest Interface, HttpServletResponse Interface, Handling HTTP get Requests, Setting Up the Apache Tomcat Server, Deploying a Web Application, Handling HTTP get Requests Containing Data, Handling HTTP post Requests, Redirecting Requests to Other Resources, Session Tracking, Cookies, Session Tracking with HttpSession, Multi-tier Applications: Using JDBC from a Servlet, HttpUtils Class

The persistence Tier (Model)

Database and JDBC:

Structured Query Language (SQL), Basic SELECT Query, WHERE Clause, ORDER BY Clause, Merging Data from Multiple Tables: Joining, INSERT INTO Statement, UPDATE Statement, DELETE FROM Statement, Creating Database books in Cloudscape, Manipulating Databases with JDBC, Connecting to and Querying a JDBC Data Source, PreparedStatements, Transaction Processing, Stored Procedures, Batch Processing, Processing Multiple ResultSets or Update Counts, Updatable ResultSets, JDBC, DataSource, Connection Pooling, RowSets

Java Beans

Overview, Using Java Beans to create model objects and access database

Java Server Faces:

Java Web Technologies, Servlets, JavaServer Pages, JavaServer Faces, Web Technologies in Netbeans, Creating and Running a Web Application in Netbean, Examining a JSP File, Examining a Page Bean File, Event-Processing Life Cycle, Relationship Between the JSP and Page Bean Files, Examining the XHTML Generated by a Java Web Application, Building a Web Application in Netbeans

Ajax Enabled Java Server Faces:

Accessing Databases in Web Applications, Building a Web Application That Displays Data from a Database, Modifying the Page Bean File for the AddressBook Application, Ajax-Enabled JSF Components, AutoComplete Text Field and Virtual Forms, Configuring Virtual Forms, JSP File with Virtual Forms and an AutoComplete Text Field, Providing Suggestions for a AutoCompleteText Field, Google Maps Map Viewer Component

Course Number: IAC-PROG-ANDROID

Mobile Application Development in Android

Module 1: Android Overview

- Course objectives
- Development environment
- Android Markets
- Android Framework
- Core Applications
- Development options: native vs web
- Desktop vs Mobile
- Android SDK Overview
- Introduction and demo of “Android Virtual Device” (AVD)
- Introduction and demo of eclipse and ADT plugin
- Create “Hello, World” using eclipse and AVD

Module 2: Introduction to Java

- Object Oriented Concept
- Java Basics: Data Types, Conditions, Loops
- Classes and Objects
- Inheritances
- Basic GUIs
- Writing Java Applications

Module 3: Basic Building Blocks of an Android Application

- Component Introduction
- Activity, life cycle
- View
- Application/Task stack
- Intent
- Project organization (directories)
- Manifest
- Resource directories
- Trace logging
- Multiple activities
- Introduce “Android Debug Bridge” (ADB)
- Introduce Eclipse debugger

Module 4: Basic Android User Interface

- View/ViewGroup
- Styles/Themes

Layouts
Widgets: Button, TextView
Event listeners
SlidingDrawer
ScrollView
TabWidget
Screen Orientation (portrait vs landscape)
Screen Size
Drawables (introduction)
Screen Density
ImageView

Module 5: Advanced Android User Interface

OptionsMenu
Digital/Analog Clock
CheckBox
DatePicker/TimePicker
EditText
ImageButton
ProgressBar
RadioGroup/RadioButton
RatingBar
SeekBar
Toast
ToggleButton
WebView/WebViewClient
Dialog:Alert, Custom, List, Radio

Module 6: Advanced Android System Components

ComponentName (class)
Context
Application
Intent/Intent Filters
BroadcastReceiver
Activity/BroadcastReceiver
Threads (intro/review)
Handlers/Loopers/Message Queues
Main UI Thread
AsyncTask
Services (Local and Remote)

Module 7: SQL Database

Introduction to SQLite

Creating, opening, and closing a database

Working with inserts, updates, and deletes

Module 8: Networking

Network Services

HTTP review

REST

Security Certificate Management

JSON

XML

HTTP client

JSON parsing

XML parsing

ConnectivityManager

Module 9: Multimedia and Content Providers in Android

Simple media playback

Simple video playback

Content providers MIME types

Adding, changing, and removing content

Module 10: Mapping and Location Based Services

Using Location Based Services

Setting Up your Emulator with Location Based Services

Selecting a Location Provider

Finding Your Location

Using Geocoders

Creating Mapbased Activities