

**Module 1****Chapter 1 : Web Essentials & Mark-up
Language - HTML 1-1 to 1-64**

Syllabus : The Internet, basic internet protocols, the World Wide Web, HTTP Request message, HTTP response message, web clients, web servers. HTML: Introduction, history and versions. HTML elements: headings, paragraphs, line break, colors and fonts, links, frames, lists, tables, images and forms, Difference between HTML and HTML5. CSS: Introduction to Style Sheet, CSS features, CSS core syntax, Style sheets and HTML, Style rule cascading and inheritance, text properties. Bootstrap.

1.1	Introduction to Web Technology	1-1
1.1.1	The Internet	1-1
1.1.2	Basic internet protocols	1-2
1.1.2(A)	TCP/IP	1-2
1.1.2(B)	Domain Name System	1-3
1.1.2(C)	Higher layer protocols	1-6
1.1.3	The World Wide Web	1-7
1.1.4	HTTP	1-7
1.1.4(A)	HTTP Commands	1-8
1.1.4(B)	HTTP Request Message	1-10
1.1.4(C)	HTTP Response Message	1-11
1.1.4(D)	Example of an HTTP Interaction	1-12
1.1.4(E)	HTTP GET Vs HTTP PPST	1-13
1.1.5	Web Clients	1-13
1.1.6	Web Servers	1-15
1.2	HTML	1-16
1.2.1	Introduction of HTML Document	1-16
1.2.2	History and Versions	1-17
1.2.3	HTML Elements	1-17
1.2.3(A)	Heading	1-17
1.2.3(B)	Paragraph	1-18
1.2.3(C)	Line Break	1-18

1.2.3(D)	Color and Font	1-19
1.2.3(E)	Links	1-20
1.2.3(F)	Frames	1-22
1.2.3(G)	List	1-25
1.2.3(H)	Tables	1-28
1.2.3(I)	Images	1-38
1.2.3(J)	Forms	1-39
1.2.3(K)	marquee	1-46
1.2.4	Difference between HTML and HTML5	1-46
1.3	CSS	1-47
1.3.1	Introduction to CSS	1-48
1.3.2	CSS Features	1-48
1.3.3	CSS selector	1-49
1.3.4	Style Sheet and HTML	1-51
1.3.5	Style rule cascading and inheritance	1-53
1.3.5(A)	Inheritance	1-54
1.3.5(B)	Cascade	1-54
1.3.6	text properties	1-55
1.4	Bootstrap	1-59
1.4.1	Understanding Bootstrap	1-59
1.4.2	Advantages of Using Bootstrap	1-60
1.4.3	Bootstrap Package	1-60
1.5	Miscellaneous	1-62
1.5.1	Technologies used in traditional web programming	1-63

Module 2**Chapter 2 : Client Side Technologies :
JavaScript and DOM 2-1 to 2-74**

Syllabus : JavaScript: Introduction to JavaScript, JavaScript in perspective, basic syntax, variables and data types, statements, operators, literals, functions, objects, arrays, built in objects, JavaScript debuggers. DOM: Introduction to Document Object Model, DOM history and levels, intrinsic event handling, modifying element style, the document tree, DOM event handling, jQuery, Overview of Angular JS.



2.1	Introduction to JavaScript	2-1	2.14.4(A) Adding New Elements to DOM	2-34
2.2	JavaScript in Perspective	2-4	2.14.4(B) Getting or Setting HTML Contents to DOM.....	2-35
2.3	Basic Syntax	2-5	2.14.4(C) Removing Existing Elements from DOM.....	2-35
2.4	Variables	2-7	2.14.4(D) Replacing Existing Elements in DOM	2-36
2.4.1	JavaScript Variable Scope	2-7	2.15	DOM history and Levels,
2.5	Data types	2-8	2.16	Intrinsic event Handling
2.6	Statements	2-8	2.17	Modifying Element Style
2.6.1	Conditional Statements	2-8	2.17.1	Adding New Elements to DOM
2.6.1(A)	If Statement.....	2-8	2.17.2	Getting or Setting HTML Contents to DOM.....
2.6.1(B)	if...else Statement	2-8	2.17.3	Removing Existing Elements from DOM.....
2.6.1(C)	if...else if... Statement.....	2-9	2.17.4	Replacing Existing Elements in DOM
2.6.1(D)	Switch Case	2-9	2.18	The document tree
2.6.2	Loop Statements	2-10	2.19	DOM event Handling
2.6.2(A)	The while Loop	2-10	2.20	Form validation using java Script
2.6.2(B)	The do...while Loop	2-10	2.21	Solved Example
2.6.2(C)	The for Loop	2-11	2.22	jQuery
2.6.2(D)	For...in Loop	2-11	2.22.1	Features of JQuery.....
2.7	Operators	2-12	2.22.2	Loading JQuery
2.8	Literals	2-13	2.22.3	JQuery Selectors.....
2.9	Functions	2-14	2.22.4	Creating and Appending Element
2.10	Objects	2-15	2.22.5	Removing Element
2.11	Arrays	2-16	2.22.6	JQuery Event Handling
2.12	Built in Objects	2-18	2.23	Overview of Angular JS
2.12.1	Built in Objects	2-19	2.23.1	Features of Angular JS.....
2.12.2	Browser Objects	2-27	2.23.2	Advantages of AngularJS
2.13	JavaScript Debuggers	2-30	2.23.3	MVC Architecture
2.14	DOM: Introduction to Document Object Model	2-31	2.23.4	Directives
2.14.1	DOM Levels.....	2-31	2.23.4(A)	Syntax of AngularJS Directives
2.14.2	DOM Objects, their Properties and Methods	2-32		
2.14.3	DOM Events	2-34		
2.14.4	Manipulating DOM Elements in JavaScript.....	2-34		

Module 3

Chapter 3 : Java Servlets and XML 3-1 to 3-61

Syllabus : Servlet : Servlet architecture overview, A “Hello World” servlet, Servlets generating dynamic content, Servlet life cycle, parameter data, sessions, cookies, URL rewriting, other Servlet capabilities, data storage, Servlets concurrency, databases (MySQL) and Java Servlets.

XML : XML documents and vocabularies, XML declaration, XML Namespaces, DOM based XML processing, transforming XML documents, DTD: Schema, elements, attributes. AJAX: Introduction, Working of AJAX.

3.1 Introduction to Server-Side Programming3-1

3.1.1 Server-Side Scripting.....3-2

3.2 Servlet3-3

3.2.1 Functionality of Servlet3-3

3.2.2 Servlet Architecture Overview.....3-3

3.2.2(A) How Does Servlet Works.....3-4

3.2.2(B) Servlet API3-4

3.2.2(C) HttpServlet Request and HttpServlet Response Objects.....3-4

3.2.3 hello OM servlet3-6

3.2.3(A) Writing Servlet to display Hello OM3-6

3.2.4 Servlet Generating Dynamic Content3-6

3.3 Servlet Life Cycle.....3-7

3.4 Parameter Data3-8

3.4.1 Reading form Data from Servlet3-9

3.4.2 Get All Parameters From URL in Servlet3-10

3.5 Session Management.....3-11

3.5.1 URL Rewriting Example.....3-14

3.6 Other Servlet Capabilities3-15

3.6.1 ServletRequest Methods3-15

3.6.2 Servlet Response Methods.....3-15

3.7 Data Storage3-16

3.7.1 Java Database Connectivity Steps3-16

3.7.2 Examples3-19

3.8 Servlet Concurrency.....3-24

3.9 MSQL and Servlet.....3-25

3.10 XML3-27

3.10.1 Introduction3-27

3.10.2 Why XML.....3-27

3.10.3 Comparing XML with TTML3-29

3.11 XML documents and vocabularies.....3-30

3.11.1 XML syntax Rules.....3-30

3.11.2 Components of XML Document.....3-30

3.11.3 XML DTD3-32

3.12 XML Declaration and namespaces3-32

3.13 DOM based XML Processing3-33

3.13.1 Overview of SAX Processing.....3-35

3.13.2 DOM vs SAX3-36

3.14 Transforming XML Documents3-36

3.14.1 XSL Elements3-37

3.14.2 XSLT3-43

3.14.3 Differences between XML and XSLT3-44

3.15 DTD.....3-44

3.15.1 DTD Types3-45

3.15.2 XML Schema.....3-46

3.15.3 DTD elements3-48

3.15.4 DTD attributes3-50

3.16 Ajax.....3-51

3.16.1 Ajax Introduction.....3-51

3.16.2 Understanding the Technology behind AJAX.....3-52

3.16.3 Benefits of Ajax3-52

3.16.4 Working of ajax3-53

3.16.5 Understanding XMLHttpRequest3-53

3.16.6 Steps of AJAX Operation.....3-55

3.16.7 Coding Ajax Scripts3-58

Module 4

Chapter 4 : JSP and Web Services 4-1 to 4-54

Syllabus : JSP : Introduction to Java Server Pages, JSP and Servlets, running JSP applications, Basic JSP, JavaBeans classes and JSP, Support for the Model-View-Controller paradigm, JSP related technologies.

Web Services : Web Service concepts, Writing a Java Web Service, Writing a Java web service client, Describing Web Services: WSDL, Communicating Object data: SOAP. Struts: Overview, architecture, configuration, actions, interceptors, result types, validations, localization, exception handling, annotations.

4.1 Introduction to JSP4-1

4.1.1 Advantages of JSP4-1

4.1.2 Servlet and JSP.....4-2

4.1.3 Running JSP application4-3

4.1.4 Basic JSP.....4-4

4.1.4(A) Elements of JSP.....4-4

4.1.4(B) JSP lifecycle.....4-10

4.1.5 Java Beans classes and JSP4-11

4.1.6 Support for MVC Paradigm.....4-13

4.1.6(A) MVC architecture.....4-17

4.1.7 JSP Related Technologies4-18

4.2 Web Services.....4-18

4.2.1 Introduction to Web Services.....4-18

4.2.1(A) Characteristics of Web Services.....4-20

4.2.1(B) Types of Web Services4-21

4.2.1(C) SOAP vs Rest4-24

4.2.2 Web Service Concepts.....4-26

4.2.3 Writing Java Web Services4-27

4.2.4 Writing java Web Service Client4-30

4.2.5 Web Service Component.....4-31

4.2.5(A) Communicating Object data : SOAP4-31

4.2.5(B) Describing Web Service : WSDL.....4-32

4.2.5(C) UDDI (Universal Description Discovery and Integration)4-33

4.3 Struts.....4-33

4.3.1 Overview4-33

4.3.2 Architecture4-34

4.3.3 Configuration4-37

4.3.4 Actions4-40

4.3.5 Interceptors4-41

4.3.6 Result Type4-43

4.3.7 Validation4-44

4.3.8 Localization4-47

4.3.9 Exception Handling.....4-49

4.3.10 Annotations in struts 2.....4-52

Module 5

Chapter 5 : Server Side Scripting Languages 5-1 to 5-49

Syllabus : Introduction to PHP, uses of PHP, general syntactic characteristics, Primitives, operations and expressions, output, control statements, arrays, functions, pattern matching, form handling, files, cookies, session tracking, using MySQL with PHP, WAP and WML. Introduction to ASP.NET : Overview of the .NET Framework, Overview of C#, Introduction to ASP.NET, ASP.NET Controls, Web Services. Overview of Node JS.

5.1 Introduction and uses of PHP.....5-1

5.1.1 Common uses of PHP.....5-1

5.2 Features of PHP.....5-1

5.3 General Syntactic Characteristics.....5-3

5.3.1 Variable5-3

5.3.2 Keywords5-4

5.3.3 Comments.....5-4

5.4 Primitives /Data Types5-4

5.5 PHP Script Working5-7

5.6 PHP Syntax5-8

5.7 Expressions and Operation5-9



5.8	Output	5-9	5.19.1	Components of Microsoft.Net Framework Architecture	5-37
5.9	Control Statement	5-10	5.20	Introduction to c# language	5-38
5.9.1	Conditional Statements	5-10	5.21	Introduction to ASP.NET	5-39
5.9.2	Looping Statements	5-12	5.21.1	ASP.Net Page Lifecycle	5-40
5.10	Arrays	5-14	5.22	ASP.NET Server Controls	5-41
5.10.1	Indexed arrays.....	5-15	5.22.1	HTML Server Controls.....	5-41
5.10.2	Associative Arrays.....	5-15	5.22.2	Web Server Controls.....	5-42
5.10.3	Multidimensional Arrays	5-16	5.22.2(A)	Basic Web Controls.....	5-42
5.10.4	PHP Sorting Arrays Examples.....	5-17	5.22.2(B)	List Controls	5-42
5.11	Function	5-20	5.22.2(C)	Rich Controls.....	5-42
5.11.1	Creating PHP Function.....	5-20	5.22.2(D)	Validation Controls	5-42
5.11.2	PHP Functions with Parameters.....	5-20	5.22.3	Custom Controls	5-43
5.11.3	PHP Functions returning value	5-21	5.23	ASP.NET Web Service	5-43
5.11.4	Dynamic Function Calls.....	5-21	5.24	Overview of Node JS	5-47
5.12	Pattern Matching	5-21	Module 6		
5.13	Form Handling	5-22	<hr/>		
5.13.1	Building Web Applications Using PHP.....	5-23	Chapter 6 : Ruby and Rails 6-1 to 6-30		
5.14	Files	5-25	Syllabus : Introduction to Ruby : Origins & uses of Ruby, scalar types and their operations, simple input and output, control statements, fundamentals of arrays, hashes, methods, classes, code blocks and iterators, pattern matching. Introduction to Rails: Overview of Rails, Document Requests, Processing Forms, Rails Applications and Databases, Layouts, Rails with Ajax. Introduction to EJB.		
5.15	Cookies	5-26	6.1.	Introduction to Ruby	6-1
5.15.1	Creating Cookies.....	5-27	6.1.1	Origins and uses of ruby.....	6-1
5.15.2	Accessing Cookies	5-27	6.1.2	Scalar Types and Their Operations	6-2
5.15.3	Delete a Cookie.....	5-28	6.1.2(A)	Numeric and String Literals	6-3
5.16	Session	5-29	6.1.2(B)	String Methods	6-3
5.17	MySQL with PHP	5-30	6.1.3	Simple Input and output	6-4
5.17.1	CURD Operation Using PHP	5-32	6.1.4	Control Statements.....	6-5
5.18	WAP and WML	5-34	6.1.4(A)	Ruby If-else Statement.....	6-5
5.18.1	The WAP Architecture.....	5-35	6.1.4(B)	Ruby Case Statement	6-5
5.18.2	How WAP Model Works ?	5-35			
5.18.3	WAP Microbrowser.....	5-35			
5.18.4	Examples of WAP use.....	5-36			
5.18.5	Wireless Markup Language (WML)	5-36			
5.18.6	WAP Program Structure.....	5-36			
5.19	Overview of .Net framework	5-37			



6.1.4(C) Ruby Loop.....	6-6	6.2.4 Rails application and Databases	6-15
6.1.5 Fundamental of array	6-6	6.2.4(A) Configuring a Database.....	6-15
6.1.6 Hashes.....	6-7	6.2.4(B) Database Setup for PostgreSQL	6-16
6.1.7 Methods	6-8	6.2.4(C) Creating a database table	6-16
6.1.8 Classes	6-8	6.2.4(D) Retrieving multiple rows of data.....	6-17
6.1.9 Code Blocks	6-9	6.2.5 Layout	6-17
6.1.10 Iterators.....	6-10	6.2.6 Rails with Ajax.....	6-18
6.1.11 Pattern Matching	6-11	6.3 EJB	6-19
6.2 Rails	6-11	6.3.1 Advantages / Benefits of Enterprise Java Beans	6-20
6.2.1 Overview of Rails.....	6-11	6.3.2 EJB Types.....	6-20
6.2.2 Document Request.....	6-12	6.3.3 EJB Architecture	6-24
6.2.2(A) The Rails Request-Response Lifecycle	6-12	6.3.3(A) Scenerio of client accesing remote EJB	6-27
6.2.2(B) Hello World Example.....	6-13	6.3.3(B) Aspects for local and remote interface	6-28
6.2.3 Processing Form	6-14	6.3.4 JNDI Lookup	6-29