

Web 2.0 and Rich Internet Applications

Subject Code: 07MCA556

Hours/ Week: 04

Total Hours: 52

IA Marks: 50

Exam Hours: 03

Exam Marks: 100

1. Introduction, Web Services

8 Hours

What is Web 2.0?, Folksonomies and Web 2.0, Software As a Service (SaaS), Data and Web 2.0, Convergence, Iterative development, Rich User experience, Multiple Delivery Channels, Social Networking.

Web Services: SOAP, RPC Style SOAP, Document style SOAP, WSDL, REST services, JSON format, What is JSON?, Array literals, Object literals, Mixing literals, JSON Syntax, JSON Encoding and Decoding, JSON versus XML.

2. Building Rich Internet Applications with AJAX

12 Hours

Building Rich Internet Applications with AJAX: Limitations of Classic Web application model, AJAX principles, Technologies behind AJAX, Examples of usage of AJAX, Dynamic web applications through Hidden frames for both GET and POST methods.

IFrames, Asynchronous communication and AJAX application model, XMLHttpRequest Object – properties and methods, handling different browser implementations of XMLHttpRequest, The same origin policy, Cache control, AJAX Patterns (Only algorithms – examples not required): Predictive fetch pattern, Submission throttling pattern, Periodic refresh, Multi stage download, Fall back patterns.

3. Building Rich Internet Applications with Flex

24 Hours

Flash player, Flex framework, MXML and Actionscript, Working with Data services, Understanding differences between HTML and Flex applications, Understanding how Flex applications work, Understanding Flex and Flash authoring, MXML language, a simple example.

Using Actionscript, MXML and Actionscript correlations. Understanding Actionscript 3.0 language syntax: Language overview, Objects and Classes, Packages and namespaces, Variables & scope of variables, case sensitivity and general syntax rules, Operators, Conditional, Looping, Functions, Nested functions, Functions as Objects, Function scope, OO Programming in Actionscript: Classes, Interfaces, Inheritance, Working with String objects, Working with Arrays, Error handling in Actionscript: Try/Catch, Working with XML

Framework fundamentals, Understanding application life cycle, Differentiating between Flash player and Framework, Bootstrapping Flex applications, Loading one flex application in to another, Understanding application domains, Understanding the preloader.

Managing layout, Flex layout overview, Working with children, Container types, Layout rules, Padding, Borders and gaps, Nesting containers, Making fluid interfaces.

Working with UI components: Understanding UI Components, Creating component instances, Common UI Component properties, Handling events, Button, Value selectors, Text components, List based controls, Data models and Model View Controller, Creating collection objects, Setting the data provider, Using Data grids, Using Tree controls, Working with selected values and items, Pop up controls, Navigators, Control bars
Working with data: Using data models, Using XML, Using Actionscript classes, Data Binding.

3. Building Advanced Web 2.0 applications

8 Hours

Definition of mash up applications, Mash up Techniques, Building a simple mash up application with AJAX, Remote data communication, strategies for data communication, Simple HTTPServices, URLLoader in Flex, Web Services in Flex, Examples: Building an RSS reader with AJAX, Building an RSS reader with Flex.

Text Books:

1. Nicholas C Zakas et al: Professional AJAX, Wrox publications, 2006.
(Chapters 1 to 4, Chapter 6 pp157-166, Chapter 7 pp191-196)
2. Chafic Kazoun: Programming Flex 2, O'Reilly publications, 2007.
(Chapters 1, Chapters 3 to 7, Chapter 12, Chapter 16 pp380-403)
3. Francis Shanahan: Mashups, Wrox, 2007.
(Chapters 1, 6)

Reference Books:

1. Thomas A. Powell: Ajax The Complete reference, McGraw Hill, 2008.
2. Gottfried Vossen, Stephan Hagemann: Unleashing Web 2.0 From Concepts to Creativity, Elsevier, 2007.
3. Colin Moock: Essential Actionscript 3.0, O'Reilly Publications, 2007.
4. Steven Holzner : Ajax Bible Wiley India , 2007.
5. Justin Gehtland et al: A Web 2.0 primer Pragmatic Ajax, SPD Publications, 2006.
6. Eric Van derVlist et al: Professional Web 2.0 Programming, Wiley India, 2007.