Patterns and Frameworks for Rich Internet Applications

## Summary

The next major version of HTML introduces a number of new elements and attributes that reflects the typical usage of modern websites. In addition to the mark up enhancements, it also proposes a range of powerful APIs to be implemented by browsers that can aid the development of Rich Internet Applications (RIA) using open standards.

## Duration

3 Days

## Participants Feedback

“The session was well conducted and informative”

-Rohit Singh,

Honeywell, Bangalore

<http://speakerrate.com/talks/9251-html5-css3-jquery>

“It was great attending the HTML5, CSS3, jQuery training. Your presentation and delivery was excellent. I have got a very good confidence in entering HTML5 world.”

-Theiveegam

Honewell, Bangalore

<http://speakerrate.com/talks/9251-html5-css3-jquery>

## Course Details

Technologies covered:

HTML5

CSS3

jQuery

Backbone.js

Hardware requirements

Pentium Processor

2 GB RAM or greater

10 G Hard Drive or greater

Networked with TCP/IP (required)

Internet connection

Software requirements

Visual Studio 2010 with ASP.NET MVC 4.0

Windows XP Professional (SP2), Windows Vista, or Windows Server 2003 SP2 or 2008

IIS

Office System 2003 or 2007, or Microsoft Word reader

Adobe Acrobat Reader

Visual Studio 2008/2010

SQL Server 2005/2008

Chrome, Firefox

Course outline

# Advanced JavaScript (0.5 Days)

## Expressive JavaScript

The Flexibility of JavaScript

JavaScript as a Loosely Typed Language

Functions as First-Class Objects

Object Mutability

## Functions In Depth

Function Objects

Function Literal

Function Invocation Patterns

Augmenting Types

Recursion & Closures

Functions as Callbacks

Function Currying & Memorization

## Closures (Lab)

How Closures Work

Private Variables, Callbacks and Timers

Binding Function Contexts

Overriding Function Behavior

## Object Orientation With Prototypes (Lab)

Object Instantiation

Constructors

Inheritance and Prototype Chain

Extending Object

Extending Number

Instantiation Issues

Writing class-like code

## JavaScript Gotchas

Global Variables

Scope

Semicolon Insertions

Type Coercion

# Query (0.5 Days)

## Introducing jQuery

Unobtrusive JavaScript

jQuery fundamentals

The jQuery wrapper

Utility functions

The document ready handler

## Creating the wrapped element set

Selecting elements for manipulation

Using basic CSS selectors

Using child, container, and attribute selectors

Selecting by position

Using custom jQuery selectors

Generating new HTML

Managing the wrapped element set

Managing jQuery chains

## Manipulating page contents with jQuery

Manipulating element properties and attributes

Manipulating element properties

Fetching attribute values

Setting attribute values

Removing attributes

Cloning elements

Dealing with form element values

## Events

Understanding the browser event models

The jQuery Event Model

Binding event handlers using jQuery

Removing event handlers

Inspecting the Event instance

Affecting the event propagation

Triggering event handlers

Other event-related commands

## Animations and Effects

Showing and hiding elements

Implementing a collapsible list

Toggling the display state of elements

Animating the display state of elements

Showing and hiding elements gradually

Fading elements into and out of existence

Sliding elements up and down

# HTML 5 (1 Day)

## Overview of HTML5

New in HTML5

New DOCTYPE and Character Set

New and Depreciated Elements

Semantic Markup

Simplifying Selection using the Selectors API

JavaScript Logging and Debugging

Window.JSON

DOM Level 3

## Using HTML5 Today

Currently available features

Browser Support

Detective native availability of features

Working with emulation

## Understanding HTML5 Markup

HTML5 Page Structure

HTML5 DOCTYPE

HTML5 markup structural elements

Semantic elements

## HTML5 Forms

HTML Forms Vs XForms

Functional Forms

New Form Attributes and Functions

Placeholder Attribute

Autocomplete Attribute

Autofocus Attribute

List Attribute and datalist Element

Min and Max attributes

ValueAsNumber attribute

Required Attribute

Checking Forms with Validation

Validation Feedback

## HTML5 Audio & Video APIs

The Audio and Video Elements

Understanding Audio and Video

Working with Audio and Video Containers

Understanding Audio and Video Codecs

## HTML5 Canvas & SVG

Overview of Canvas Vs. SVG

Canvas coordinates

Context

Pixel Data

Working with Canvas APIs

Drawing Operations

Canvas Transforms

Understanding and Working with SVG

Using Raphael.js

Charts using gRaphael.js

## Server Sent Events (Lab)

Server Sent Events Support

Server Support

SSE Emulation

Broadcasting Information

Using the EventSource API

## WebSockets (Lab)

Realtime and HTTP

Understanding HTML5 Web Sockets

Using HTML5 WebSockets API

WebSocket Events

Sending and Receiving Messages using WebSockets

Overview of Pusher

## Web Workers (Lab)

Checking for Browser Support

Creating HTML5 Web Workers

Loading and Executing Additional JavaScript

Communicating with HTML5 Web Workers

Handling Errors

Stopping Web Workers

Using Timers

## Web Storage (Lab)

Overview of HTML5 Web Storage

Browser Support for HTML4 Web Storage

Using the HTML5 Web Storage

Checking for Browser Support

Setting and Retrieving Values

Plugging Data Leaks

## HTML5 Offline Web Applications (Lab)

Overview of HTML5 Offline Web Applications

Browser Support for HTML5 Offline Web Applications

Using HTML5 Offline Web Applications API

Creating a Sample Offline Application

Manifest Files

The applicationCache API

# CSS 3

## CSS 3.0

Introducing CSS3

CSS3 Colors, Gradients and Multiple Backgrounds

Rounded Corners and Border-Radius

CSS3 Transforms

Transitions

Animations & 2D Transformations

Web Fonts with @font-face

CSS3 Multicolumn Layouts

# Backbone.js (Lab) (1 Day)

## Introduction to Backbone.js

Need to organize UI code

Backbone Fundamentals

View

Model

Collection

Router

## Model Basics

Implement a simple Model

Modify Model attributes

Use a Model in the Console

## Common Model Methods

get(key)

set({key:value})

isNew()

toJSON()

## View Basics

Implement a simple View

Understanding template rendering

Using View in the console

Using HandleBar View Engine

## Collections Basics

Implement a collection

Use underscore methods to manipulate a collection

Understanding Collection Events

## Combining Models Views and Collections

Extend an existing View

Writing a template

Render Models in a Collection

Using jQuery sub-search in a View

Adding Content to the DOM

Render on the Collection’s reset event

## Routes

Constructor Route

Router Redirection

Evented Routes

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