**HTML5**

**Duration: 2 days**

**Pre requisite: Good knowledge of Javascript OOPS,DOM,HTML & CSS**

**would be helpful but not mandatory**

**Please Strike of topics not required :**

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**Day - 1 :**

**Introduction:**

**Overview of HTML5**

**History of HTML5**

**Who Is Developing HTML5?**

**A New Vision**

**Compatibility and Paving the Cow Paths**

**Utility and the Priority of Constituencies**

**Interoperability Simplification**

**Universal Access**

**A Plugin–Free Paradigm**

**What’s In and What’s Out?**

**What’s New in HTML5?**

**New DOCTYPE and Character Set**

**New and Deprecated Elements**

**Semantic Markup**

**Simplifying Selection Using the Selectors API**

**JavaScript Logging and Debugging**

**window JSON**

**DOM Level 3 – Selectors API – Faster DOM manipulation than jquery.**

**Using WAI-ARIA with HTML5 for Accessibility**

**CANVAS API:**

**Overview of HTML5 Canvas**

**Canvas Coordinates& registering the Canvas dimensions**

**Drawing on Cavas with paths & curves**

**Composite operations**

**Working with Solid colors,Gradients & Transparancy**

**Cropping an image**

**Copying and pasting sections of the canvas**

**Getting image data**

**Introduction to pixel manipulation: inverting image colors**

**Converting image colors to grayscale**

**Converting a canvas drawing into a data URL**

**Saving a canvas drawing as an image**

**Loading the canvas with a data URL**

**Creating a pixelated image focus**

**Importing External Images & Setting the background**

**Geometrical transformations**

**Creating text,graphs & charts**

**Animating a Vertical Bar-Chartwith fine tuning.**

**Canvas – Events & Interactions with regions.**

**CSS and Canvas**

**Create High-Res, Retina-Display-Ready Media with Canvas**

**Clipping Cavas drawings & saving them to a file.**

**When Not to Use Canvas**

**Fallback Content**

**Implementing Canvas Security**

**Implementing techniquesfor Backward compatibility**

**Canvas vs. CSS3 transitions and animations**

**Canvas performance on mobile devices**

**Building an Application with HTML5 Canvas**

**GEOLOCATION:**

**Geolocation Now**

**The Basics**

**Ways to Locate**

**Global Positioning System (GPS)**

**IP Address**

**GSM/CDMA Cell IDs 1**

**WiFi and Bluetooth MAC Address**

**Location and Location-Based Services (LBS)**

**Geolocation Today**

**Latitude and Longitude**

**Getting you current location**

**Monitoring the current position – without polling.**

**Browser compatibility & Fallbacks.**

**Reverse geocoding & Mapping location**

**Getting Distance & Directions between two places.**

**Following a moving location**

**Combing geolocation with google maps**

**ArcGIS JavaScript API**

**Adding Geolocation to Esri Maps**

**Triggering the Privacy Protection Mechanism**

**Implementing techniques for Backward compatibility.**

**Alternative open source & commercial libraries when Native Geolocation fails**

**Building a Real-Time Application with HTML5 Geolocation & External API’s – Movie search Location based search app.**

**MEDIA API (video & audio):**

**Flash V/s HTML5 video**

**Adding Video & Audio to a page**

**Supported Audio & Video formats& Codecs**

**Lossy & Lossless compression**

**Media specific attributes Vs Global attributes**

**Deployment challenges on Mobiles**

**Encoding Audio & Video to supported formats using open source & commercial software**

**Custom Controls,Seekbar,Progressbar with Javascript & CSS**

**Applying CSS skins & transforms**

**Working with multiple tracks,Subtitles & Captions with Captionator,Playr & the Leanback Player**

**Integrating Video with Canvas & SVG**

**Applying Visual filters using Canvas & SVG**

**Inverting video colors**

**Smoother animation & video playback with slow/variable bandwidth - Request Animation Frame ( ).**

**Debuggin,Browser support &Licensing issues.**

**Implementing techniques for Backward compatibility.**

**Taking advantage of web workers for Video**

**Alternative Content Technologies**

**Media Accessibility and Internationalization**

**Creating a Video Frame Grabber application.**

**WEB FORMS API:**

**HTML forms fundamentals:**

**Introduction**

**Form Basics**

**Form Basics**

**Form Settings**

**Form Settings**

**HTML form inputs:**

**Introduction**

**Text inputs**

**Selections**

**Input attributes**

**Input commands**

**Organizing HTML forms:**

**Introduction**

**Labels**

**Fieldsets**

**Tab index**

**Access keys**

**HTML form scenarios:**

**Introduction**

**Scripting forms**

**Handling multiple forms**

**Uploading files**

**Form Validation**

**WEB WORKERS API:**

**What are web workers ?**

**Possibilities & Limitations of web workers**

**Inline,Dedicated & Shared Workers**

**Creating a worker,Assign roles & Deploying the same.**

**Leveragin a Shared Worker**

**Worker support in modern browsers**

**Managing multiple workers**

**Parsing data with workers**

**Perform Heavy array computations**

**Using timers in conjunction with worker**

**Work with pixel manipulations**

**Make twitter JSONP requests**

**Introducing the new Service worker**

**Connect to share workers at same time with multiple browser windows**

**Transferable objects**

**Debuging Your Workers**

**Implementing techniques for Backward compatibility.**

**Building an Application with HTML5 Web Workers API**

**Day - 2 :**

**CROSS DOCUMENT MESSAGING API:**

**Understanding Origin Security**

**Browser Support for Cross Document Messaging**

**Building an Application Using the postMessage API**

**XMLHttpRequest Level**

**Cross-Origin XMLHttpRequest**

**Progress Events**

**Browser Support for HTML5 XMLHttpRequest Level 2**

**Structured Data & Framebusting**

**Implementing techniques for Backward compatibility.**

**Building an Application with HTML5 CDM**

**WEB SOCKET API:**

**Introduction to HTML5 WebSocket:**

**Applications of WebSocket**

**Related Technologies**

**Server-Sent Events**

**SPDY**

**Web Real-Time Communication**

**WebSocket API:**

**Overview of the WebSocket API**

**Getting Started with the WebSocket API**

**The WebSocket Constructor**

**WebSocket Events**

**WebSocket Methods**

**WebSocket Object Attributes**

**WebSocket Object Attribute: bufferedAmount**

**Putting It All Together**

**Checking for WebSocket Support**

**Using HTML5 Media with WebSocket**

**WEB STORAGE & Indexed DB & File System API:**

**Introduction:**

**Technology Landscape**

**Tradional storage mediums Vs the new Web Storage**

**Practical Uses**

**Narrowing Down the Scope**

**Development Environment**

**Browser Support**

**Web Storage:**

**Introduction**

**What's in a Name?**

**What is Web Storage?**

**Capacity**

**Testing Capacity**

**Features**

**Browser Support**

**Fallbacks and Polyfills**

**Caveats**

**Getting and Setting Values**

**Remove Item**

**Keys and Length**

**Clear**

**Session Storage**

**Exceed Quota**

**Storage Event**

**Persistent Form**

**HTML Markup**

**localDataService JavaScript Module**

**viewModel JavaScript Module**

**Stepping Through the Code**

**Building an Application with HTML5 local/session storage**

**Working with Indexed DB:**

**Concepts Immediately Invoked Function Expressions**

**Concepts $$result Module**

**Concepts mockJSON**

**Introduction and Concepts:**

**Introduction**

**What is IndexedDB?**

**Event Lifecycle**

**Features**

**Capacity**

**Browser Support**

**Fallbacks and Polyfills**

**Caveats**

**IndexedDB Initialization & CRUD :**

**Introduction**

**Opening a Database**

**Deleting a Database**

**The db Model Object**

**Create Object (Insert)**

**Read Object**

**Update Object**

**Delete Object**

**IndexedDB Cursors, Indexes and Ranges :**

**Introduction**

**db Model for Cursor, Index and Range s**

**Cursor Concepts**

**Cursors - Selecting Sets of Data**

**Indexes - Selecting Individual Objects**

**Range Concepts**

**Numeric Range**

**String Range**

**Controlling Cursor Direction**

**IndexedDB Keys, Capacity, Performance and Versions:**

**Introduction**

**Unique Identifier (Keys) Concepts**

**Creating Object Store Keys**

**Loading 5,00,000 (5 lac) Objects into a Database**

**Detecting When a Cursor is 'Done'**

**Working with Large Sets of Data**

**Managing Database Versions**

**Capacity Capabilities**

**IndexedDB Abstractions & Implementing an Edit Screen:**

**Introduction**

**Introduction to the Homes List Screen**

**Homes List Markup**

**Homes List db Model**

**Abstracting IndexedDB - Error Handling**

**Abstracting IndexedDB - Delete and Open Database**

**Abstracting IndexedDB - Get All**

**Abstracting IndexedDB - Insert, Update and Delete**

**Homes List View Model**

**Stepping Through the Code**

**Building an Application with HTML5 Indexed DB API**

**File System Introduction, Concepts & Initialization:**

**Introduction**

**What is the HTML File System?**

**Features**

**Capacity**

**Browser Support**

**Fallbacks and Polyfills**

**Caveats**

**Storage Types**

**Initialization (Temporary Storage)**

**Initialization (Permanent Storage)**

**Wrapping Up Initialization Code**

**HTML File System Explorer (Chrome Extension)**

**File System Directories - Create, List, Delete, Move & Copy :**

**Introduction**

**Create and Read Directory**

**Create Sub Directories**

**List Directory Contents**

**Delete and Recursive Delete**

**Move, Copy and Rename**

**File System Building an Abstraction Layer over Directories :**

**Introduction**

**localFileSystem Module - Error Handling**

**localFileSystem Module - Request File System**

**localFileSystem Module - Create Directory**

**localFileSystem Module - Directory Exists**

**localFileSystem Module - Get Directory Entries**

**localFileSystem Module - Delete**

**localFileSystem Module - Move, Rename and Copy**

**File System Files - Create, Read, Write, Delete, Move & Copy :**

**Introduction**

**Create and Get File**

**Read, Write and Update File**

**Delete, Move, Rename and Copy File**

**File Abstractions Overview**

**localFileSystem Module - Create File**

**localFileSystem Module - Get and File Exists**

**localFileSystem Module - Read, Prepend and Append**

**localFileSystem Module - Delete and Replace File**

**localFileSystem Module - Move, Rename and Copy File**

**File System Testing Capacity Limits & Implementing a File Editor:**

**Introduction**

**File System Capacity Limits**

**File Editor**

**File Editor Markup**

**File Editor View Model**

**Libraries for File System:**

**Introduction**

**What is store.js?**

**store.js**

**What is amplify.js?**

**amplify.js**

**What is lawnchair.js?**

**lawnchair.js**

**Building an Application with HTML5 File System API**

**OFFLINE APPLICATIONS API:**

**Understanding Offline or Occasionally connected applications**

**Cache manifest - Cache,Network & fallback in detail**

**Create &Use the manifest to detect connectivity**

**Updating cache with the manifest**

**Application Cache API**

**Understading Events under the AppCache API :**

**i.e, load,checking,noupdate,downloading,progress,**

**cached,updated ready,obsolete & error events**

**Disk Space & Expiration**

**Deleting the local cache**

**Implementing techniques for Backward compatibility.**

**Building an Application with HTML5 Offline Applications API**

**Dealing with Backward compatibility & cross browser issues :**

**Need for the same ?**

**The Current State of Web Polyfills**

**Polyfilling: Past, Present, and Future**

**What Is a Polyfill (and What Is It Not)?**

**Types of Polyfills**

**Why Polyfills Still Matter**

**Implementing backward / cross browser compatibility for HTML5 API's :**