Apache Cordova Cross-Platform Mobile Application Development

Duration: 3 Days *(Face-to-Face & Remote-Live)*, or 21 Hours *(On-Demand)*

Price: $1695 *(Face-to-Face & Remote-Live)*, or $1495 *(On-Demand)*

Discounts: We offer multiple discount options. Click here for more information.

Delivery Options: Attend face-to-face in the classroom or remote-live attendance.

Students Will Learn

- The jQuery Mobile Toolkit
- Style Class Manipulation
- DOM Manipulation
- Introduction to Ajax
- Using jQuery Mobile Lists, Forms, Buttons and Themes
- Overview of Geolocation
- Introduction to Apache Cordova (PhoneGap)
- Using the Contacts Database API
- Using the the Cordova File API
- Accessing the Camera with Cordova
- Using the Accelerometer

Course Description

Apache Cordova (formerly PhoneGap) is an open-source is a mobile application development framework. It utilizes HTML5, CSS3 and JavaScript to create apps for a variety of mobile platforms. Students will learn how to build applications using jQuery Mobile and Apache Cordova that run on a variety of mobile platforms including iOS, Android and Windows Mobile. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites

Knowledge of HTML and JavaScript equivalent to attending the Website Development with HTML5, CSS and Bootstrap and JavaScript Programming courses.

Course Overview

The Mobile Landscape

- Devices Types

Technology Stack

- HTML5 Main Objectives
- Browser-Side Data Storage

    - Smartphones
    - Tablets
- Device Convergence
- Platform Comparison
- Three Types of Mobile Applications
    - Native Mobile Applications
    - Mobile Web Applications
    - Hybrid Mobile Applications
- Mobile Web Development
- Apache Cordova (PhoneGap) Overview
- Building with Cordova

- Declaring HTML5
- Detecting Support for HTML5
- The Document Object Model
- CSS Overview
- Class and ID Attribute Selectors
- Working with JavaScript
- Detecting a Feature with JavaScript
- Using JavaScript Libraries
- jQuery Mobile Tooling Support

jQuery Overview

- What Is jQuery?
- Benefits of Using a JavaScript Library
- How to Use jQuery
- DOM Ready Events
- The jQuery Function Object
- The jQuery Wrapper
- The jQuery Wrapper as an Array-Like Object
- `innerHTML` vs. `html()`
- jQuery Wrapper Chaining
- API Function Notation
- Handling DOM Ready Events

Selectors

- Background: The Sizzle Selector Engine
- Selecting Elements by Attribute
- Pseudo-Selectors
- Selecting Elements Using Relationships
- Selecting Elements Using Filters
- Chaining Using `end()`
- Testing Elements
- Iterating Through Selected Elements Using `each()`
- JavaScript Methods
- JavaScript `"this"`
- Function Context
- The Function `call()` Method

Style Class Manipulation

- Specifying Style Properties
- Setting Style Properties
- Using `addClass()` and `removeClass()`
- Defining a Stylesheet
- Setting and Getting Dimensions
- Attributes

DOM Manipulation

- The `$` Function Revisited
- Getters and Setters
- The `text()` Element Method
- Appending DOM Elements
- Removing DOM Elements
- DOM Performance

Introduction to Ajax

- What is Ajax?
- Creating the `XMLHttpRequest` Object
- The `XMLHttpRequest` Object Basics
- The Browser and the Server
- Ajax Requests and Responses
- Sending an Ajax Request With jQuery
- Data Types
- The `data()` Method
- Using `serialize()`
- Get vs. Post
- `ajaxStart()` and `ajaxError()`

JSONP

- JSONP - JSON with Padding
- Same-Origin Policy
- The `<script>` Tag
- Best Practices

The jQuery Mobile Toolkit

jQuery Mobile Lists

- Overview of jQuery Mobile
- Downloading and Using jQuery Mobile
- The Anatomy of a Page
- Page Segments
- Theming
- Creating a List View
- Decorating List View Rows
- Implementing Master Detail Navigation Patterns
- Create a Tabbed View

jQuery Mobile Buttons

- jQuery Mobile Buttons
- Creating Buttons
- Button Appearance
- Enabling and Disabling
- Button Groups
- Horizontal Button Groups
- Inline Buttons
- Highlighting Preferred Choice
- Icons
- Alternate Icon Display

jQuery Mobile Themes

- Overview of the jQuery Mobile Theming System
- Working with Themes
- Theme Examples
- Using ThemeRoller
  - Global Theme Settings
  - Downloading Themes
- Contents of the Theme Zip File
- Theme Images
- Editing Your Themes
- Custom Transitions in jQuery Mobile
- Custom Transitions Using CSS

Apache Cordova (PhoneGap)

- Introduction to Apache Cordova
- The Cordova Model
  - Usage
  - API
  - Features
- App Stores

- Overview of jQuery Mobile Lists
- Inset Lists
- Adding Links
- Numbered Lists
- Count Bubbles
- Formatting List Items
- Formatted List Source
- Filters
- Filtered List Source

jQuery Mobile Forms

- jQuery Mobile Forms
- Form Enhancements
  - Labels
  - Placeholders
- Client-Side Validation
- The `required` Attribute
- Patterns
- Widgets
- Input Types
  - Color
  - Date
  - Range
  - Select
  - Checkboxes
  - Horizontal Checkboxes
  - Radio Buttons
- Datalists
- Submitting Forms

Geolocation

- Overview of the Geolocation API
- Functions and Options
  - Success Function
  - Error Function
- Using the `watchPosition()` Method

Device and Contacts Information APIs

- Cordova Device Info Object
- Device Info Permissions
- The `cordova` and `uuid` Properties
- The `platform` and `version` Properties
- The `name` Property
- Contacts Database API

- Packaging Cordova Apps
- Adobe PhoneGap Build

Contacts Database Helper Objects
- Supported Platforms
- Contacts API Permissions
- Contact Properties
- Creating a New Contact
- Saving a Contact
- Deleting (Removing) a Contact
- Finding Contact(s)

The Cordova File API

- Accessing the Mobile File System with Cordova
- File API Permissions
- The Cordova File API
- Accessing the Device File System
- The `requestFileSystem()` Method
- The `File` Object
- The `FileEntry` Object
- The `DirectoryEntry` Object
- The `DirectoryReader` Object
- The `FileError` Object
- Writing Files with the `FileWriter` Object
- Reading Files with the `FileReader` Object

The Accelerometer

- Overview of the Accelerometer
- Supported Platforms
- Accelerometer Precision
- Accelerometer Detection
- Accelerometer Permissions
- The Accelerometer API
- The Acceleration Object
- The `getCurrentAcceleration()` Method
- The `watchAcceleration()` Method
- The `accelerometerSuccess` Call-Back Function
- The `clearWatch()` Method
- Device Shake Tracking Application Code

The Camera

- Accessing the Camera with Cordova
- Camera Permissions
- The Cordova Camera API
- The Camera Object
- The `getPicture()` Method
- The `cameraSuccess` Call-Back Function
- The `cameraError` Call-Back Function
- Camera Options
- The `cleanup()` Method

Best Practices

- jQuery Mobile Benefits
- Progressive Enhancement
- Common UI Guidelines
- Platform-Specific UI Guidelines
- Cordova Business Layer Initialization
- Business Layer Best Practices
- Cordova Domain Whitelist Guide
- Background Tasks
- Cordova Background Task API

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