sages

Course code:	**HTML5/ANG**
Course title:	**Effective development of Web applications using AngularJS, HTML5 and JavaScript**
Days:	5

Description:

Course intended for:

The course is intended for programmers having the basic knowledge in HTML and JavaScript, who want to develop their skills in the field of development of interactive Web applications.

Course objective:

The training objective is to get the participants familiar with the theoretical and practical issues of HTML 5, JavaScript and the AngularJS network, allowing for effective development of Web applications.

The training participants will learn how to:

1. Create pages and forms in HTML 5, also in the manner ensuring portability,

2. Use the CSS 3 style to format pages and create graphic effects,

3. Use the advanced HTML 5 functionalities, such as file operations, drag & drop, server communication or embedding of multimedia,

4. Create any graphic effects thanks to the new HTML 5 components,

5. Use JavaScript language to solve frequently encountered problems,

6. Implement the Model-View-Controller architecture in the Web application thanks to AngularJS.

This knowledge will allow the participants to create advanced Web application interfaces, using the popular standards.

Requirements:

The participants are required to be familiar with HTML, XML, HTML DOM standards and with

basics of Web application development. Basic ability to program in JavaScript or a different script language will make it easier to grasp the training material.

Course parameters:

5*8 hours (5*7 net hours) of lectures and workshops (with a visible emphasis on workshops).

Group size: no more than 10 participants.

Course curriculum:

1. HTML 5
    I. Basics of HTML 5, CSS and JavaScript
        i. Page development and application of basic styles
        ii. The strengths of HTML 5. Comparison with HTML 4
        iii. Browser support for HTML 5
        iv. A review of the most important new structural tags in HTML 5
        v. Introduction to JavaScript and a review of syntax
        vi. Introducing JavaScript in the structure of HTML DOM
        vii. Management of input events
        viii. Creation of form and validation of input data using HTML 5 or JavaScript attributes
        ix. Exercises with data validation and forms
    II. JavaScript programming
        i. JavaScript code structure
        ii. Development and expansion of objects
        iii. Selected best practices
        iv. Exercises: inheritance from objects and code refactoring
    III. Programming interfaces in HTML 5
        i. Access to the file system, file operations
        ii. Drag & Drop
        iii. Multimedia embedding
        iv. Basics of Web Audio API
        v. Relocation API
        vi. Debugging and profiling of Web applications
        vii. Exercises in API HTML 5
    IV. Offline applications in HTML5
        i. Local data management
        ii. Local application buffering
        iii. Exercises: application and offline data
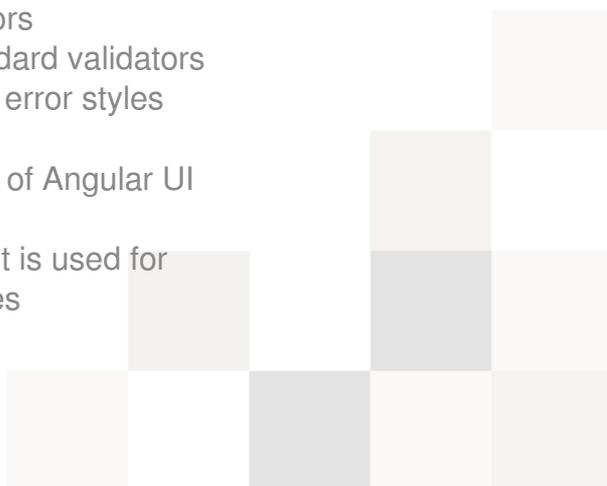   V. Customization of the application
        i. Development of a portable interface
        ii. Device detection and selection of the appropriate representation. CSS 3 Media Queries
        iii. Exercise: preparation of a page to be printed and displayed on a mobile device

Sages sp. z o.o., ul. Nowogrodzka 62c, 02-002 Warszawa
tel. +48 22 203 56 00 fax: +48 22 203 56 01
e-mail: office@sages.io web: www.sages.io

VI. Advanced graphic operations
  i. Interactive vector graphics using Scalable Vector Graphics
  ii. Drawing: Canvas
  iii. Exercises
VII. Use of CSS 3 in HTML 5 pages
  i. Using text styles
  ii. Application of styles to block components
  iii. CSS3 selectors
  iv. Enhancement of graphic effects using CSS3
  v. Exercise: header styling
VIII. Animations
  i. Fade-in effects in CSS3
  ii. Component transformation
  iii. Use of CSS Key-Frame animations
IX. Network communication between the application and the server
  i. Sending and receiving data using XMLHTTPRequest
  ii. Exercises: Marshalling and data exchange in a Web application
  iii. Introduction to Web Sockets
  iv. Sending and receiving data using Web Sockets
  v. xercises: Web Sockets
X. Web Messaging API
  i. Message exchange between documents
  ii. Domain authentication
  iii. Channels and ports
  iv. Exercises
XI. Web Worker Process
  i. Asynchronous operations and obtaining fast response of the application
  ii. Web Worker types
  iii. Browser support
  iv. Displaying of messages during processing of time-consuming operations
XII. Extra (optional)
  i. Native Web applications in Google Chrome: structure, development and portability (requires familiarity with C/C++ languages)

2. CSS 3: selected issues and exercises
 I. Use of fonts in Web applications using CSS3
 II. Text effects
 III. Document layout with many columns
 IV. Edge effect
 V. Color, transparency and gradient
 VI. 2D and 3D transformations
 VII. Fade-in effects and animations
 VIII. Box Layout – a flexible layout
 IX. Document background

3. JavaScript

I. Selected language issues
  i. Tables and other data structures
  ii. Functions as objects
  iii. Transmission of a variable list of arguments to the function
  iv. Function prototypes
  v. In-built prototypes
  vi. Function closure
  vii. Regular expressions

II. Selected problems and applications of JavaScript with Exercises
  i. JavaScript code launching from external locations
  ii. Mouse position interception
  iii. "Forward" and "Back" buttons
  iv. Development of alerts in JavaScript
  v. Browser recognition. Document type detection
  vi. Forwarding
  vii. Opening of new window
  viii. Date and time
  ix. Performance with a delay
  x. Image loading before displaying
  xi. Change of the button image after moving mouse over the button
  xii. Random number generator
  xiii. Operations on literals
  xiv. Formatting numbers to currencies
  xv. Memory leaks in JavaScript

4. Angular JS: MVVW in JavaScript
  I. What is MVVW and MVW pattern
      Development of applications based on Angular JS
      Angular Seed / Twitter Bootstrap
  II. Models in Angular JS
      Explanation of functioning of models in Angular JS
      Linking of models in two and in one direction
      Isolated $scope and its application
  III. Views and templates
      Discussing of the principle of functioning of views in Angular JS
      Repeaters
      CSS class switches, logic expressions
      Attaching of HTML codes of various templates
      Form validators:
        i. Use of in-built validators
        ii. Attaching of non-standard validators
        iii. Form and component error styles
      Event management
      Attaching of external libraries of Angular UI
  IV. Directives
      What is a directive and what it is used for
      Attaching of external directives

Sages sp. z o.o., ul. Nowogrodzka 62c, 02-002 Warszawa
tel. +48 22 203 56 00 fax: +48 22 203 56 01
e-mail: office@sages.io web: www.sages.io