JAVA SCRIPT

The curriculum has been designed according to the leading worldwide JavaScript related courses and based on the experience gained form the two previous UNDP Training projects in Web Application Development.
Training is divided into the main modules, covering the key topics related to front-end web development based on JavaScript. Certain modules will overlap in order to better mix and connect knowledge acquired form different areas (e.g., HTML and CSS; HTML and JavaScript; JavaScript and libraries/frameworks, etc.).

Course Modules

- Module 1 (12 classes): **Web technologies basics**
  - Course introduction, e-learning platform, developer tools and platforms.
  - Web technologies basics, protocols, services, architecture.
  - Making personal presentation, using Sway, building and updating personal LinkedIn profile.
  - Managing communication in IT project teams, using Microsoft Office 365 service (Outlook, Calendar, Yammer, Teams, Planner, Azure DevOps).
  - Basics of project management and DevOps.
- Module 2 (28 classes): **HTML and CSS3**
  - HTML syntax, editors (Visual Studio Code – installing, customizing, plugins, updating, live server).
  - HTML elements and attributes.
  - HTML content – headings, paragraphs, lists, tables, comments, hyperlinks, tables, images, audio, video, HTML forms.
  - HTML styles, fonts, special characters, HTML entities, style attribute, color basics, backgrounds, borders, margins and padding, dimensions, Box model.
  - CSS selectors (tag, id, class), CSS styles, external CSS.
  - Colors (rgb, hex, HTML colors), advanced backgrounds (colors, gradients, images, CSS patterns).
  - Positioning and displaying content, overflow, display, float, position.
  - Fluid and responsive design, @media queries, HTML design.
  - HTML APIs.
  - Search Engine Optimization (SEO).
  - XML and JSON.
  - Bootstrap framework.
  - PROJECT example.
- Module 3 (32 classes): **JavaScript language – Introduction**
  - Editors, Interpreters, Syntax.
  - Variables and data types, variable mutation.
  - JavaScript operators.
  - Conditional statements – if-else.
  - Boolean logic and switch statements.
  - Statements and expressions.
  - Functions.
  - Grouping code, blocks and scope, hoisting.
  - Loops and iteration.
  - Built-in objects properties and methods.
  - PROJECT example.
- Module 4 (36 classes): **Intermediate JavaScript**
  - HTML Document Object Model (DOM).

- Math and Date objects.
- Functions and event handlers.
- Functional expressions, IIFE (Immediately-Invoked Functional Expressions).
- “this” keyword.
- Scoping Chain.
- First class functions, functions as arguments.
- Closure.
- AJAX – Asynchronous JavaScript Fetch API.
- Windows objects, screen, location, navigation.
- Regular expressions and RegEx objects.
- PROJECT example.

- Module 5 (36 classes): **Advanced JavaScript**
  - Object Oriented Programming (OOP) in JavaScript.
  - Prototypes and inheritance.
  - ES5 and ES6.
  - Custom (user created) objects.
  - JavaScript modules, import and export.
  - Execution stack and context.
  - Creation and execution phases, hoisting.
  - Hoisting in Practice.
  - JavaScript Parsers and Engines.
  - Error handling and debugging.
  - PROJECT example.
- Module 6 (32 classes): **Modern JavaScript**
  - From EcmaScript 6 (ES6 or EcmaScript 2015) to EcmaScript 2020, ES.Next.
  - Browser support for new features.
  - “let” and “const” keywords.
  - Blocks and IIFEs.
  - Strings in ES6.
  - Arrow functions.
  - Spread operator and rest parameter.
  - Default parameters.
  - Map, reduce and filter.
  - “Class” in JavaScript.
  - PROJECT example.
- Module 7 (16 classes): **jQuery library**
  - jQuery selectors and filters.
  - Accessing Parent and Child elements.
  - Manipulating CSS styles.
  - Checking element existence.
  - Adding, removing and appending elements.
  - Showing and hiding elements.
  - Animations and effects.
  - jQuery AJAX.
  - PROJECT example.
- Module 8 (16 classes): **Object oriented programming: Typescript**
  - Environment setup, basic syntax, types, variables, operators.
  - Basic principles of OOP: classes, interfaces, objects.
  - Advanced: namespaces, modules, tuples.
  - PROJECT example.
- Module 9 (32 classes): **Angular framework**
  - Introduction, environment setup, first project.

- Starting Angular app, architecture, displaying content.
- Starting application, architecture, data presentation.
- Using services, routing, HTTP requests.
- Dependency Injection, HttpClient module.
- Using 3rd party libraries with Angular (Bootstrap, FontAwesome).
- Angular translation.
- Advanced: interceptors, route guards, different types of modules.
- Unit testing with Karma and Jasmine.
- PROJECT: Real-world example.

- Module 10 (12 classes): **Final Project**
  - Planning, design and development of real-world web application using the learned programming concepts, technologies, development tools and project/collaboration tools.
  - Final quiz.