TKO5110 - Web Programming

Pilvi Rajala, 507068

HTML exercises

1. **HTML5 has two ways of drawing graphics directly on web page. What are those methods and how do they differ from each other?**

   HTML5 allows drawing graphics either with the HTML <canvas> element or with SVG within the HTML <svg> element. The <canvas> element is a container for graphics and the actual drawing of the graphics happens on the fly with JavaScript. On the other hand, SVG is an XML-based language for describing 2D graphics. Rendering canvas happens pixel by pixel and once the graphic is drawn the browser forgets about it. If for example the position or size of the graphic needs to be change, the entire scene and any objects covered by the graphic has to be redrawn. However, in SVG each element is nested within SVG DOM and remembered as an object. If the attributes of an SVG object are changed, the browser can automatically re-render the shape.

2. **What are HTML5's semantic elements? What is their purpose?**

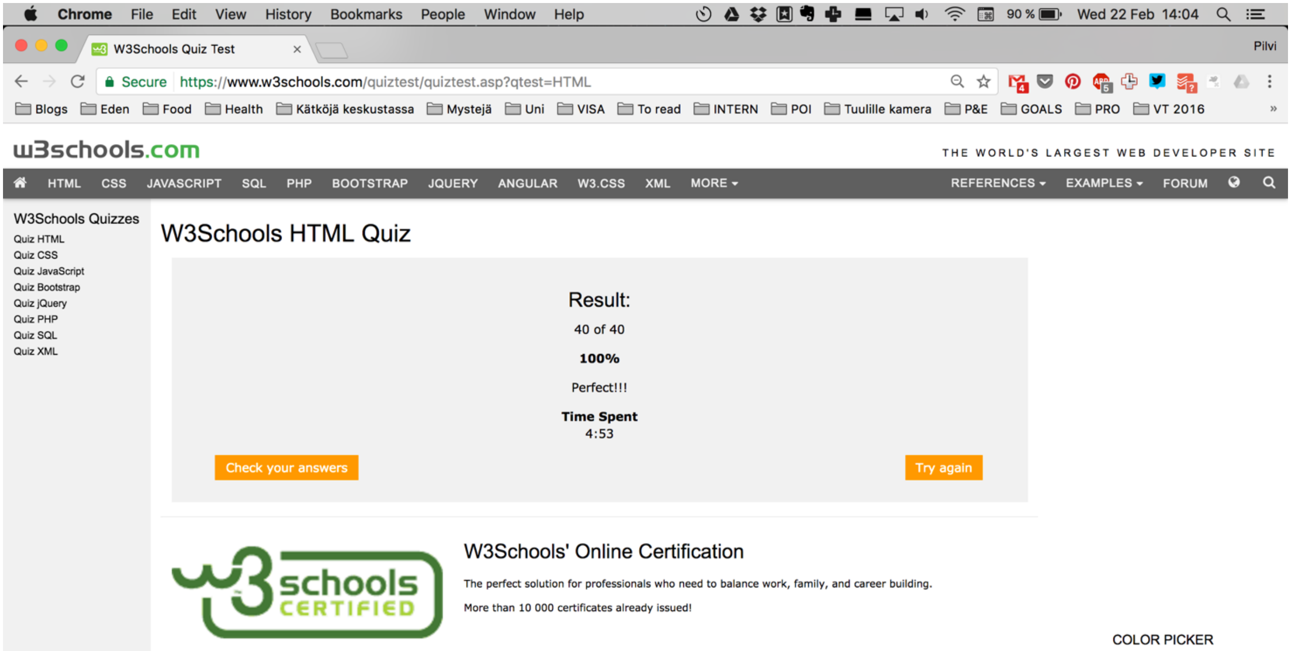
   Semantic elements are HTML5 elements that clearly describe their role on the webpage. Examples of semantic elements are <article>, <footer>, <section> and <nav>. Each of these elements clearly defines what type of content it supposedly holds while non-semantic elements like <div> and <span> give no indication about their content. Semantic elements have intrinsic meaning that they convey to both the browser and the developer.

   The purpose of HTML5 semantic elements is to help the developer to structure the code they create better. This make the code both more readable and also easier to maintain. HTML5's semantic elements push developers to learn the meaning behind different elements and think about the structure of website more. They also help to separate markup used for only for the layout from the semantic elements.

   The semantic elements also help make the pages more accessible for assistive technologies such as screen readers and for machines like Google's spiders. While a sighted user can easily recognize different parts of a website such as headers, menus, footers, these usually visually conveyed semantics aren't that apparent to for example a screen reader and hence to a visually impaired user. While other tools such as WAI-ARIA exist, is a very effective way to improve the accessibility of the website (and should be utilized before using WAI-ARIA). For example, tagging a set of navigation links with <nav>, a sidebar with <aside> and a blog post with <article>, will help a screen reader to jump to the main content of a blog site.

   To summarize, HTML5 semantic elements can improve both the structure and accessibility of sites when used properly.

3. Run HTML5 quiz test. Send a screen capture of your result.


Chrome File Edit View History Bookmarks People Window Help
90 % Wed 22 Feb 14:04
W3Schools Quiz Test
Pilvi
Secure https://www.w3schools.com/quiztest/quiztest.asp?qtest=HTML
Blogs Eden Food Health Kätköjä keskustassa Mystejä Uni VISA To read INTERN POI Tuulille kamera P&E GOALS PRO VT 2016
w3schools.com
THE WORLD'S LARGEST WEB DEVELOPER SITE
HTML CSS JAVASCRIPT SQL PHP BOOTSTRAP JQUERY ANGULAR W3.CSS XML MORE
REFERENCES EXAMPLES FORUM
W3Schools Quizzes
Quiz HTML
Quiz CSS
Quiz JavaScript
Quiz Bootstrap
Quiz jQuery
Quiz PHP
Quiz SQL
Quiz XML
Check your answers
Try again
w3schools CERTIFIED
COLOR PICKER

W3Schools HTML Quiz

Result:

40 of 40

100%

Perfect!!!

Time Spent
4:53

W3Schools' Online Certification

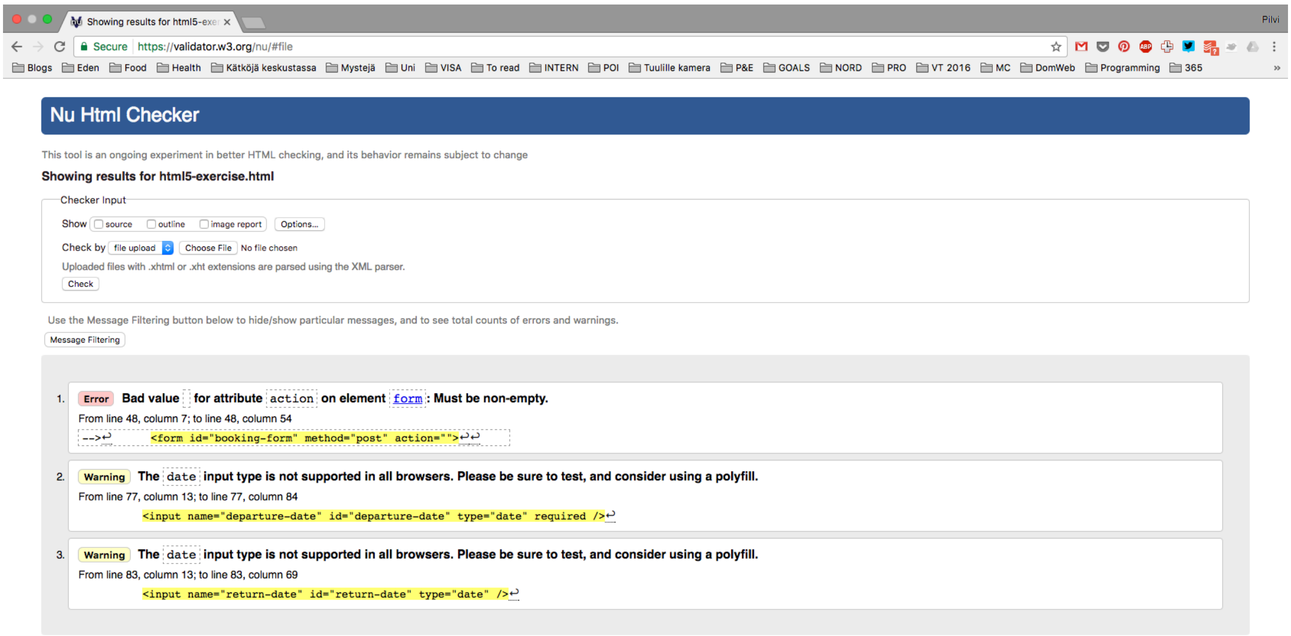
The perfect solution for professionals who need to balance work, family, and career building.

More than 10 000 certificates already issued!

4. Design a HTML5 page containing at least anchor, table, list, image and a form with input elements. For example, a form, which can be used for ordering products from web store. You can leave the "action" attribute of the form undefined. You do not need to care about the styling yet. Use validator to validate your HTML code.

Answer in the file html5-exercise.html

Screenshot of the validation results:


Showing results for html5-exe
Pilvi
Secure https://validator.w3.org/nu/#file
Blogs Eden Food Health Kätköjä keskustassa Mystejä Uni VISA To read INTERN POI Tuulille kamera P&E GOALS NORD PRO VT 2016 MC DomWeb Programming 365
Show □ source □ outline □ image report Options...
Check by file upload Choose File No file chosen
Check
Message Filtering

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for html5-exercise.html

Checker Input

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Use the Message Filtering button below to hide/show particular messages, and to see total counts of errors and warnings.

1. Error **Bad value for attribute `action` on element `form`: Must be non-empty.**
   From line 48, column 7; to line 48, column 54
   ```
   -->↩        <form id="booking-form" method="post" action="">↩↩
   ```
2. Warning **The `date` input type is not supported in all browsers. Please be sure to test, and consider using a polyfill.**
   From line 77, column 13; to line 77, column 84
   ```
   <input name="departure-date" id="departure-date" type="date" required />↩
   ```
3. Warning **The `date` input type is not supported in all browsers. Please be sure to test, and consider using a polyfill.**
   From line 83, column 13; to line 83, column 69
   ```
   <input name="return-date" id="return-date" type="date" />↩
   ```

5. What is WAI-ARIA in HTML?

WAI-ARIA stands for "Web Accessibility Initiative – Accessible Rich Internet Applications" and it is, to put it simply, a set of attributes meant to enhance the semantics of a web site or a web application in order to assistive technologies such as screen readers to make sense of things that HTML doesn't natively express.

The information provided through WAI-ARIA ranges from telling what a certain element or set of element is to telling a screen reader that pressing a button just hid or showed a bunch of items on a page. These functionalities can be achieved by applying WAI-ARIA roles and state attributes to HTML markup. These additions don't change the layout or functionality of the page but they give assistive technologies additional information about page and can hence make the page more accessible.

WAI-ARIA can be very helpful especially when the page has a lot of dynamic content and more advanced user interface control created using for example JavaScript and Ajax. However, WAI-ARIA is not meant to replace the use of native HTML elements or attributes that convey semantic meaning. Actually the first rule explicitly advises against this: "If you *can* use a native HTML element [HTML51] or attribute with the semantics and behavior you require **already built in**, instead of re-purposing an element and adding an ARIA role, state or property to make it accessible**, then do so**." WAI-ARIA is meant to be used in addition to proper structuring and usage of native HTML semantics, not instead of them.

Sources

- W3School. HTML SVG [online tutorial]. Retrieved 6.3.2017 from https://www.w3schools.com/html/html5_svg.asp
- W3School. HTML Canvas [online tutorial]. Retrieved 6.3.2017 from https://www.w3schools.com/html/html5_canvas.asp
- Vincent Bidaux. The Webflow blog. HTML semantic elements Webflow: the essential guide [blog post]. Retrieved 18.3.2017 from **https://webflow.com/blog/html5-semantic-elements-and-webflow-the-essential-guide**
- W3school. HTML5 Semantic Elements [online tutorial]. Retrieved 18.3. 2017 from https://www.w3schools.com/html/html5_semantic_elements.asp
- Marco's Accessibility Blog. What is WAI-ARIA, what does it do for me, and what not? [Blog post]. Retrieved 21.3.2017 from https://www.marcozehe.de/2014/03/27/what-is-wai-aria-what-does-it-do-for-me-and-what-not/
- W3C. "Notes on Using ARIA in HTML". Retrieved 21.3.2017 from https://www.w3.org/TR/aria-in-html/#intro