What is OWASP and what is its primary mission as described in the article?

Abbreviation of OWASP is Open Web Application Security Project, One of OWASP’s core principles is that all their materials be freely available and easily accessible on their website, making it possible for anyone to improve their own web application security.

Explain the concept of "Injection". Provide an example of how an injection attack could compromise a web application's security.

Injection attacks happen when untrusted data is sent to a code interpreter through a form input or some other data submission to a web application. For example, an attacker could enter SQL database code into a form that expects a plaintext username.

Explain two strategies to prevent Broken Authentication vulnerabilities.

an attacker can take a list containing thousands of known username/password combinations obtained during a data breach and use a script to try all those combinations on a login system to see if there are any that work.

Some strategies to mitigate authentication vulnerabilities are requiring two-factor authentication (2FA) as well as limiting or delaying repeated login attempts using rate limiting.

Describe the potential consequences of Insecure Deserialization in web applications. How can developers protect against such attacks?

If web applications don’t protect sensitive data such as financial information and passwords, attackers can gain access to that data and sellor utilize it for nefarious purposes.

\*Caching is the practice of temporarily storing data for re-use. For example, web browsers will often cache webpages so that if a user revisits those pages within a fixed time span, the browser does not have to fetch the pages from the web.

Briefly define Cross-Site Scripting (XSS) as outlined in the article and list two methods suggested in the article to prevent XSS attacks in web applications.

The best ways to prevent XEE attacks are to have web applications accept a less complex type of data, such as JSON\*\*, or at the very least to patch XML parsers and disable the use of external entities in an XML application.

\*XML or Extensible Markup Language is a markup language intended to be both human-readable and machine-readable. Due to its complexity and security vulnerabilities, it is now being phased out of use in many web applications.

For UXF - WCAG

Do this tutorial

Explain the importance of semantic elements in web development according to accessibility guidelines. Provide examples of at least two semantic HTML elements and clarify how they enhance accessibility for users with disabilities.

Give the user a good way to navigate and interact with your site. Make your HTML semantic. Semantics is about using the correct element in HTML. There are approximately 110 elements in HTML 5.

Two of them have no meaning – <div> and <span>.

Describe the significance of color contrast in web design concerning accessibility. How does adhering to color contrast guidelines benefit users with visual impairments, and what are the recommended contrast ratios as per WCAG standards?

Text and graphical components on a web page need good contrast so that we make sure that it is perceivable for users. Some of us have reduced vision. Others will be in a situation where contrast is important, like out in a bright sunlight. There is no perfect ratio. It is not always as high as possible, even though a high contrast is usually more readable than a low contrast. According to Apple, we should strive for a minimum of 4.5, although 7 is preferred.

Discuss the role of alternative text (alt text) for images in accordance with accessibility guidelines. Why is it crucial to include descriptive alt text, and how does this contribute to making web content more accessible? Provide examples to illustrate your explanation.

From the previous page, you learned that meaningful images need descriptive texts. In this page you will learn what to write. The alternative text for an image is for users that for some reason cannot view it. The reason can be a slow connection, an error with the image file, or if the user uses a screen reader.

Explain the purpose of landmarks in creating accessible web content. How do landmarks aid in navigation for users of assistive technologies, and can you provide examples of commonly used landmark elements in HTML?

With landmarks, blind users using a screen reader have the ability to jump to sections of a web page.

Ever since the landmarks were introduced to HTML, developers have been confused. Two of the elements that people find vaguely defined are <aside> and <section>. Let us try to clarify a bit. The big difference is that an <aside> is related to the main content and the <section> is not related.

Describe the significance of proper form labeling. Why is it important to label form elements, and what strategies can developers implement to ensure effective labeling for improved accessibility?

Labels are critical for blind users, user with low vision, users with mobility disabilities and users with memory loss. Missing labels will make a form inaccessible for many users. Each label must be programmatically associated with the form control or group of controls. Labels are not necessarily the <label> element.