Maret Web Project Assessment Validation Script

Charles Massey Griffin

Professional Software Developer

CompTIA Security+ Certified

cmg1229@gmail.com

I.   Problem Description

The lack of any client-side or server-side user input validation on the Maret Web assessments website causes users to restart assessments after failing to answer any one or multiple questions on an assessment page.

II.   Developed Solution

A script has been developed that can be added to the current assessment pages that will prevent users from continuing to further portions of the assessment without having answer all questions, thus eliminating the problem of submission without all questions being answered. NOTE: This script assumes that all multiple choice answers are required, and does not currently allow for optional questions.
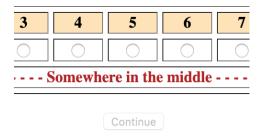
This is a client-side solution is written in javascript, and can be installed very easily to each assessment page with a single added HTML element (Instructions to follow) and will not affect the server processes in any way. The script itself is well documented, so that any developer could look at it and easily modify it to suit new requirements.

This solution has been developed and debugged with two types of assessment pages:

- 1 Multiple Choice Question Per Page (cbt.html)

- Many Multiple Choice Questions Per Page (hoi.html)

III.   Functionality

- As a fresh exam page is loaded, the 'Continue' or 'Finish Exam' button is disabled (as illustrated in the figure below. If the user holds his pointer over the continue button for more than 3 seconds, a message appears informing the user of the unanswered question(s).

- When the user completes all questions on the page, the button will be re-enabled and the user will be allowed to continue.

IV.   Installation

Package Contents

Package contents can be viewed and downloaded at https://github.com/cmg1229/maretwebscript. The package contains 4 relevant files.

- Maret_Web_Script_Documentation.pdf: This document.
- validate.js: The developed javascript.
- hoi.html: Demonstration page that shows the script working in a manner where many multiple choice questions are presented. Based on the Home Inventory Assessment. Note: Continue button does nothing after enabled.
- cbt.html: Demonstration page that shows the script working in a manner where a single multiple choice question is presented. Based on the CBT Client Assessment.
- LICENSE: Standard MIT license file. Allows free-use privately and commercially, free-modification, and free distribution of all source files with the exception of hoi.html and cbt.html which are not the original intellectual property of Charles Massey Griffin.

Instructions

Installation of this script is quite simple, and does not require restarting your server or any of its services.

1. Copy validate.js to a web-reachable location on your server and note the external facing url of the script itself. This should be something like:
   https://maretwebproject.com/users/clientmain/validate.js

2. For each PHP exam page, add the following just before the ending </HTML> tag, replacing the sample URL from above with the real external URL of the script. Testing can and should be performed after saving each php file after the addition of this element. Note: All files to be modified should be backed up before continuing.

   ```
   <script type="text/javascript"
   src="https://maretwebproject.com/users/clientmain/validate.js"></script>
   ```

Uninstallation of this script is also extremely simple as all you have to do is delete the text entered into the php page.

V.   Notices

- This software has been written and provided at no charge to the Maret Web Project and Charles Massey Griffin is not under contract to provide development services or support. This software can be copied, modified, and distributed freely, as long as Charles Massey Griffin maintains an original or, if heavily modified, a contributing author credit.

- Client-side solutions, such as javascripts, are widely used and are compatible with all mainstream web browsers (including smartphone and tablet based browsers). However, these scripts can be bypassed, locally manipulated, or turned off completely by the user or the user's security settings or security software. While not posing a danger to the web server itself, or any other users utilizing the web application, the use of scripts may not provide the same results for all users.

- The implementation of user input validation is extremely important in many aspects, not just user interaction. It provides an overall more robust and secure means of communication between clients and server. While client-side input validation is important, it is advised that input validation be implemented both on the client-side as well as the server side to maximize the overall effectiveness of the concept.