[Do not rely on user memory for information] - WCAG 2.2 Success criterion

**Do not rely on user memory for sequential input**

The text aimed at the WCAG 2.2 specification is:

Information needed later on in activities that require sequential input should be stored, or displayed, as the user proceeds through required tasks. Similarly, contents that are labeled with instructions, and/or sample text, should visibly display that information at all times.

Alastair suggests breaking it into two separate SCs, making them true/false statements, and more focused on the content requirement:

**Information in steps:** Information provided to or obtained from a user in a multi-step process does not need to be re-entered in a subsequent step unless re-entry is essential[, or required to ensure the security of the content - others?].

**Persistent labels:** Inputs with labels or instructions display the labels or instructions at all times.

**Persistent labels:** Each input has a persistently visible label.

**Persistent labels:** Labels are provided when content requires user input and labels remain visible.

Reminder about the essential definition:

if removed, would fundamentally change the information or functionality of the content, and information and functionality cannot be achieved in another way that would conform.

**Plain English summary**

Navigating processes, filling out forms, and performing tasks, where steps rely on contents that need to be recalled, by the users memory, from preceding screens, can strain a user’s cognitive resources, and cause mental fatigue. Mental fatigue impairs the human ability to learn, and remember information, while stress blocks the brain from generating cells necessary to form new memories. This creates insurmountable barriers to users, regardless of cognitive ability. <http://jonlieffmd.com/blog/stress-causes-many-kinds-of-neuroplasticity>

**Priority Level (A/AA/AAA)**

What priority level should this SC be considered for? See the [discussion of previous level assignments](https://www.w3.org/WAI/GL/wiki/WCAG_2.x_Priority_levels_discussion) for guidance.

Level A

**Principle / guideline**

**What Principle and Guideline should this SC fall within? (Or suggestion for new guideline).**

**How it helps**

Providing users access to previously selected and/or entered information that is necessary to proceed through a process reduces mental fatigue. It reduces the probability of incorrectly entering that information again, if needed. Thus, it reduces the likelihood of errors that might prevent a user from completing an intended action, activity, or task.

Users often experience distractions while completing web-based activities. When entering information in form fields, a brief distraction that draws a user’s attention away from the task at hand can cause a lapse in working memory. If all identifying, and instructional information in the form field the user has activated disappears, users with cognitive disabilities may be unable to recall its purpose. This causes mental stress that fatigues the user. As these stressors mount up, a complete cognitive breakdown is likely to occur.

Test procedure

 **Simple internal review of wireframes.**

**Manually complete all activities available and check for conformance.**

Description of how this SC can be tested (like the procedure from a technique).

Technique 1

A technique description for how the SC can be fulfilled.

Technique 1: Place labels, and/or sample text adjacent to form fields (above, below, or next to) so that they remain visible at all times.Do not rely on placeholder text within form fields that disappear when a user activates them. (also a failure of 3.3.2 Labels of Instructions)

Technique 2: Auto fill information that has been entered into previous screens, and/or previous selections that have been made (checked boxes, selected items, etc.).

Example(s)

At least one example (or link to an example) of content that passes the criteria in order to assess the criteria. (This will not be part of the final documentation.)

Example 1:  

Example 2: A corporation offers a vendor portal to solicit contracts with diverse suppliers (minority-owned businesses). The portal requires the vendor representative to provide information on the types of activities it performs, and the industries that it is applicable to [(NAICS codes)](https://www.naics.com/search/). Rather than requiring users to navigate to the NAICS code search page, search for the applicable codes, then return to the vendor portal to enter the information, the vendor portal has imported those codes and provides a mechanism that enables the user to click a link, button, etc. that auto fills the applicable information in every field that it’s necessary.

Glossary definitions

Suggested glossary definitions are:

 [DF1]I propose changing this to: “Do not require users to remember information

 [DF2]I originally had this at the beginning of the plain English summary. I kind of feel it fits better here though. I’m open to discussing.

 [DF3]I realize this isn’t actually a test procedure, but it gives an idea of how easily this can be audited.

**Information in Steps - WCAG 2.2 Success criterion**

Information provided to or obtained from a user in a multi-step process does not need to be recalled from memory, or re-entered, in order to complete a subsequent step in that process. When information from a previous step is required to be input, or relied upon, in order to complete a proceeding step, one of the following are true:

The necessary  information is displayed again, at its point of use

The information is automatically input in the required fields

A mechanism is provided to retrieve the information for input in the required fields, without navigating away from the current step in the process.

Exception: Recalling the information from memory  is essential, or required, to ensure the security of the content.

**Intent of this Success Criterion (Information in Steps)**

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The intent of this Success Criterion is to ensure that all users can successfully navigate processes that require repetitious swaths of information in order to proceed through required steps. Information that is required to be remembered for input in a proceeding task, or series of tasks can pose a significant barrier to users with cognitive disabilities, and memory difficulty. All users experience a natural gradual mental fatigue as they proceed through steps in a process. This fatigue is accelerated by the stress of rapidly recalling information from short-term, working, memory. This stress blocks the human brain from producing cells necessary to generate new memories. Users with learning, and cognitive disabilities are highly susceptible to mental fatigue.

Sustained stress can also trigger depression, post-traumatic stress disorder, psychosis, and psychotic episodes amongst users diagnosed with vulnerable conditions. These effects significantly impair those users executive functioning.

**Specific Benefits of Success Criterion 1.4.1:**

* Users with cognitive disabilities often experience short-term, working, memory difficulty.
* Sustained tress experienced while navigating through sequential processes fatigues the mental processing of all users, which impairs executive functioning, and increases the likelihood of mistakes.
* Users that experience difficulty forming new memories, recalling information, and other functions related to cognition, can complete processes without having to unnecessarily rely on their memory.
* Mitigates the probability of triggering depression, post-traumatic stress disorder, psychosis, and psychotic, episodes by reducing sustained stress.

**Examples**

Example: A corporation offers a vendor portal to solicit contracts with diverse suppliers (minority-owned businesses). The portal requires the vendor representative to provide information on the types of activities it performs, and the industries that it is applicable to North American Industry Classification System (NAICS) codes. Rather than requiring users to navigate to the NAICS code search page, search for the applicable codes, then return to the vendor portal to enter the information, the vendor portal has imported those codes and provides a mechanism that enables the user to click a link, button, etc. that auto fills the applicable information in every field that it’s necessary.

**Techniques**

* Information that is required to be entered into form fields is automatically input into corresponding fields, where it is necessary, in proceeding steps of a sequential process.
* Radio buttons, combo boxes, and other like or similar elements that are required to be selected, are automatically selected in proceeding steps of a sequential process.
* Information from previously selected radio buttons, combo boxes, and other like or similar elements, that is required to be input in a different format in proceeding steps of a sequential process is automatically formatted and entered into the required element in its proper, necessary, required presentation, without any further action required by the user.

**Persistent Labels - WCAG 2.2 Success criterion**

Elements, and content, that are labeled with instructions, including sample text, visibly displays that information after a user begins interacting with those elements, or content adjacent (above, below, next to) to its point of use, without disrupting the users ability to perform the instructed actions.

**Intent of this Success Criterion (Persistent Labels)**

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The intent of this Success Criterion is to ensure that all users can successfully perform the actions required of any content, or elements, that they may interact with. Information that is required to be remembered to interact with an element, or add content into a field can pose a significant barrier to users with cognitive disabilities, and memory difficulty.

Users with short-term memory difficulty may not retain the instructions necessary to interact with an element, or content, after its label instructions disappear. All users experiencing the stress of prolonged interaction with elements, and content, also experience a drastic decline in memory, and executive functioning due to mental fatigue. This reduces the likelihood that they will remember instructions labeled after they disappear.

Sustained stress from prolonged, repeated, interaction with elements, and content, due to lapses in memory the can also trigger depression, post-traumatic stress disorder, psychosis, and psychotic episodes amongst users diagnosed with vulnerable conditions. These effects significantly impair those users executive functioning.

**Specific Benefits of Success Criterion ?:**

* Users with short-term memory impairments can understand  the actions required of a particular element at the same time that they are interacting with that element.
* Users with cognitive disabilities often experience short-term, working, memory difficulty.
* Users with cognitive disabilities can experience lapses in memory when labels of information, including sample text, disappear after they select an element.
* Sustained stress experienced by the necessity to repeat actions due to lapses in memory fatigues the mental processing of all users, which impairs executive functioning, and increases the likelihood of mistakes.
* Users that experience difficulty forming new memories, recalling information, and other functions related to cognition, can complete the actions required of an element without having to unnecessarily rely on their memory.
* Mitigates the probability of triggering depression, post-traumatic stress disorder, psychosis, and psychotic, episodes by reducing sustained stress.

**Examples**

Example: A form field contains sample text “Enter password here” within the input field that requires a user’s password. When a user selects the input field to enter their password the label instruction “Enter password here” moves just above, below, or next to, the selected input field. This clears the user’s field of view, so as not to disrupt their ability to enter in text, that might be obstructed by overlaying the sample text, and still provides the necessary information.



**Techniques**

* Place labels, and/or sample text adjacent to form fields (above, below, or next to) so that they remain visible at all times. Do not rely on placeholder text within form fields that disappear when a user activates them. (a failure of 3.3.2 Labels of Instructions).