

Technical Disclosure Commons

Defensive Publications Series

October 01, 2018

Dynamic Visual Indicators for Indicating Destinations of Web Links

Spencer Johnson

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Johnson, Spencer, "Dynamic Visual Indicators for Indicating Destinations of Web Links", Technical Disclosure Commons, (October 01, 2018)

https://www.tdcommons.org/dpubs_series/1542



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

Dynamic visual indicators for indicating destinations of web links

ABSTRACT

Clicking on a web link sometimes takes the user to an unexpected destination or results in an unexpected operation, possibly exposing the user to undesirable content and resulting in a frustrating user experience (UX). This disclosure describes mechanisms that display visual indicators dynamically within a web browser to provide information about the nature of the resource expected upon activation of a given link. The indicators deliver corresponding information about the destination of a link while the user is likely considering activating on the link but is yet to do so. The indicators are rendered dynamically as the user moves a mouse pointer around within a page and hovers over any of the linked elements in the page.

KEYWORDS

- Web links
- Advertisements
- Visual indicators
- Mouse hovering
- Browser address bar
- Link destination

BACKGROUND

People navigate the web by typing URLs or activating links within content displayed on web pages, such as results from a search engine. Sometimes, clicking on a link takes the user to an unexpected destination or results in an unexpected operation, such as the start of a download, thus resulting in a frustrating user experience (UX).

For example, the user may click on an element within a page without realizing that it is pointing to an advertisement and may be surprised or annoyed upon being shown sponsored content or may miss the sponsored nature of the content altogether, thus considering the information in a manner similar to non-sponsored resources. In some cases, such experiences may even be malicious, leading the user to undesired and potentially harmful content, such as spam, malware, spyware, viruses, phishing sites, etc. The destination link is known to the web browser and is typically displayed to the user within a status bar of the browser. However, the user may not notice or understand the displayed link destination. Moreover, browser and scripting mechanisms may modify or obfuscate the text displayed as the link destination, thus making it unhelpful for indicating the resource targeted by the link.

DESCRIPTION

This disclosure describes mechanisms that utilize dynamic visual indicators within a web browser to provide users with information about the nature of the resource expected upon activating a given link. The mechanisms result in dynamic changes in visual elements within a browser when a user hovers over a linked element, thus signaling the nature of the resource that will be loaded as a result of the user clicking on the link. The visual changes may affect one or more elements within the browser display, such as the mouse pointer, the tooltip, the address bar, the window frame, etc. When a user hovers over a link within the page, the browser elements may change color or display relevant text, thus indicating the nature of the content expected at the destination of the link. For example, when a user hovers over an advertisement, the mouse pointer may turn red and the tooltip may include text such as “sponsored content” or when the link points to a trusted and secure destination, the address bar may turn green.

In addition to or instead of the above techniques, the visual indicators may be provided via additional browser areas allocated specifically for this purpose. For instance, lines of pixels along the edges of the browser window may be reserved for indicating link destinations. Depending on the nature of the content pointed to by the link of interest, these pixels may change colors or blink in a manner similar to the operation of blind spot indicators in an automobile. For instance, the edge pixel indicators may be triggered to warn the user that clicking on a link may result in a potentially unexpected operation, such as a file download. Further details regarding the nature and risk of a link may be delivered within a browser area, similar to a status bar, created specifically for the purposes of displaying destination information for a hovered link.

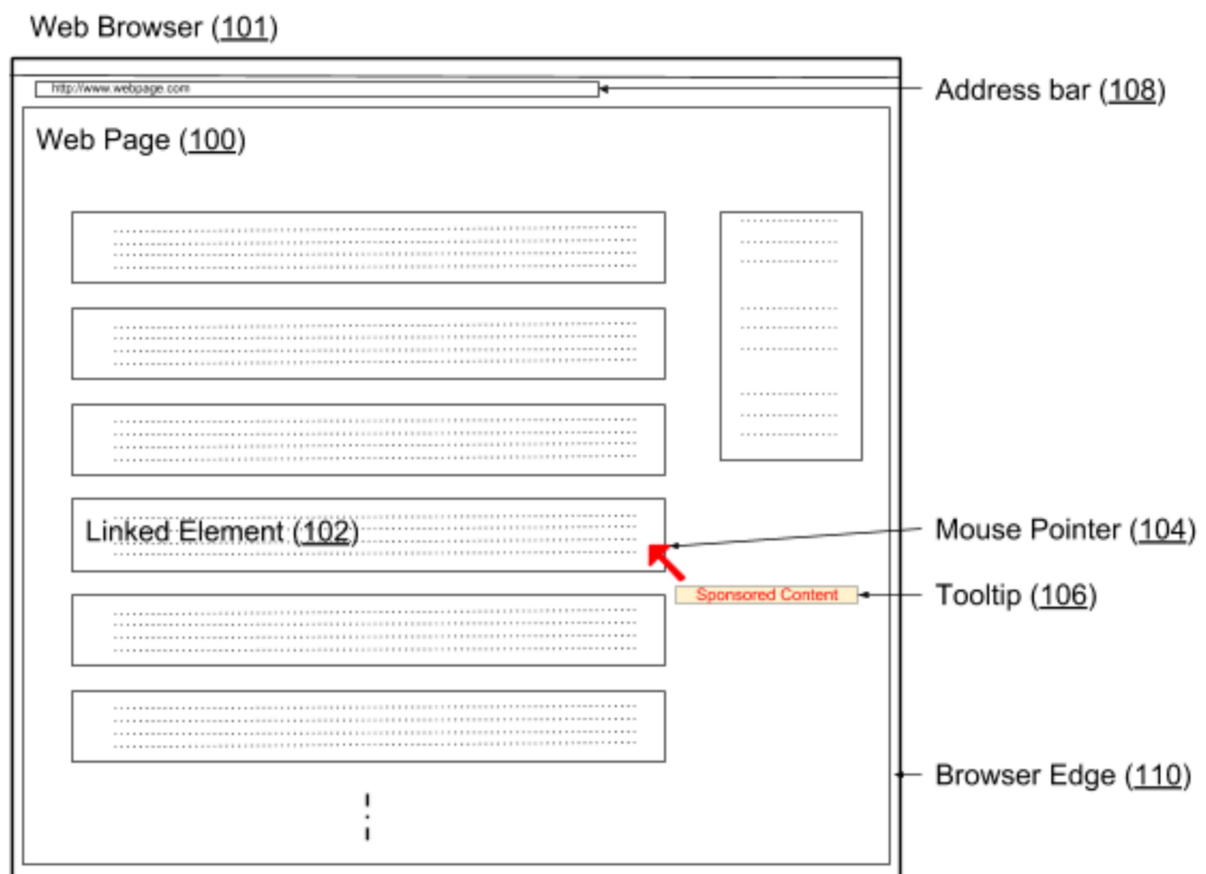


Fig 1: Providing information regarding link destinations via visual indicators

Fig. 1 shows an example of a web browser (101) with implementation of the techniques of this disclosure. A user hovers the mouse pointer (104) over a linked element (102) within a web page (100). In this instance, the linked element is an advertisement. To indicate that clicking on the link will take the user to the advertiser's page, the mouse pointer turns red and a tooltip (106) is displayed next to the mouse pointer with the text "Sponsored Content." These indicators convey to the user that the expected destination of the link is a page controlled by an advertiser, thus potentially avoiding annoyance or misunderstanding resulting from expecting non-sponsored content due to the failure to notice that the link is an advertisement. As described above, the browser address bar (108) and the browser edges (110) may also be used for display of visual indicators.

The one or more visual indicators described in this disclosure are rendered dynamically as the user navigates within the page, e.g., moves the mouse around within the page and hovers over any of the linked elements. Thus, the user may learn about the various link included within the page content by moving the mouse around and hovering over the various linked elements within the page. Notably, the goal of the indicators is to deliver the corresponding information about the destination of a link while the user is likely considering clicking on the link but is yet to do so. As such, the indicators serve to set user expectations regarding content or operation invoked by clicking on the link, thus helping the user decide whether to follow the link and, in turn, minimizing the likelihood that the user is surprised, frustrated, deceived, or harmed as a result of the click.

Based on the source of the displayed page, the text of the uniform resource locator (URL) of every link is available to the browser. The destination of the links may be characterized by the presence of known string patterns within the parsed text of the URL. For instance, links for

advertising networks typically contain known text patterns within their URLs. Additionally, well-known and trusted repositories that maintain information about nature and trustworthiness of sites may be accessed to characterize the destination URL regarding aspects such as safety, risk, content type, etc.

The visual indicators proposed in this disclosure provide the user with information about the destination of a link and facilitate better alignment between user expectations and actual operation when the link is clicked. Such an alignment serves to improve the browser UX and can keep users from navigating to undesirable content.

CONCLUSION

This disclosure describes mechanisms that display visual indicators within a web browser to provide information about the nature of the resource expected upon clicking a given link. The dynamic visual indicators are displayed using one or more visual elements within the browser window, such as the mouse pointer, the tooltip, the address bar, the window frame, etc. In addition to or instead of the above techniques, the visual indicators may be provided via additional browser areas allocated specifically for this purpose. The indicators provide the user with information about the destination of a link and facilitate better alignment between user expectations and actual operation when the link is clicked, thus improving the browser UX and keeping users from clicking on undesirable content.