Web Browser With Expandable Bar To Display A Timeline User Interface

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ABSTRACT

Users are often simultaneously engaged in a variety of online activities, requiring frequent switching between web pages, e.g., displayed in different tabs of a web browser application. Finding and navigating to a page from historical records can be slow and cumbersome, and it is not always possible to display pages in tabs when screen real estate is limited, e.g., when viewing web pages on a mobile device. Moreover, information on resources saved for later use is still present within the history and tab mechanisms, thus cluttering the user interface and making it more difficult to find the page of interest. This disclosure describes mechanisms to improve the UI and user experience to access previously visited web resources within a browser or app. To that end, the browser includes an expandable bottom bar that enables the user to display and filter pointers to browsed resources effectively and efficiently.

KEYWORDS

- Web browser
- Browser history
- Bookmarks
- Saved web pages
- Browser timeline

BACKGROUND

When browsing web pages, users are often simultaneously engaged in multiple online tasks. As a result, users often perform a variety of activities that switch between web pages, such as navigating back and forth among previously visited pages, closing unwanted pages, bookmarking pages for reference, searching for previously visited sites, etc. Browsers typically

provide a number of features to help users manage their navigation activities. For instance, users have the option to access a history of recently visited pages (saved with user permission) to find and open previously visited online resources. However, finding and navigating to a page from historical records can be slow and cumbersome.

To make it possible for a user to switch between pages more quickly as compared to accessing them via the saved history of recently accessed pages, many browsers (and other applications) include functionality to open multiple pages at the same time by creating a separate tab within which a single web page is displayed. However, owing to limited screen estate on mobile devices, it is typically not possible to display tabs when such devices are viewed in portrait mode which is the most frequently used mode.

While tabs and history are useful mechanisms to manage simultaneous multiple tasks, these mechanisms operate at the level of an individual web page. However, typical online tasks involve browsing activities connected to a series of pages that are accessed in a sequence. As a result, users often prefer saving an entire sequence navigated pages such that the task can be retrieved later. Such retrieval can also support suspending an ongoing task and resuming it at a later point without needing to go through the entire sequence of prior navigational activities. Many browsers and apps support bookmarking and/or downloading such navigational sequences for later reference and/or resumption.

Often times, pages or navigational sequences that have been bookmarked and/or downloaded to the device are no longer needed in the near future. The act of bookmarking and/or downloading signals that the user wishes to return to the corresponding task at a later time and would switch to other tasks during the current browsing session. Therefore, the bookmarked and/or downloaded resources are not required to be quickly accessible for subsequent immediate

online activities. Yet, information on these resources is still present within the history and tab mechanisms, thus cluttering the user interface (UI) with unneeded information and making it more difficult to find the resources of interest.

DESCRIPTION

This disclosure describes mechanisms to improve the UI and user experience (UX) when accessing previously visited web resources within a browser. To that end, the browser includes a bar-shaped display area at the bottom of the window. The bottom bar includes pointers to web pages visited previously by the user, stored and provided with user permission. Alternatively, or in addition, the pointers can include collections of pages representing specific tasks or navigational sequences. For example, a single pointer may refer to the task of making a hotel reservation, thus including all of pages encountered during the navigation sequence beginning with visiting a travel site, entering location and dates, filtering results, etc.

The resources in the bottom bar keep growing during a user's browsing activities as pointers keep getting added to the bar according to the user's navigation and task flows. The bottom bar is designed to be expandable upon being selected by the user. When expanded, the bar can use additional screen real estate in the user's focus of attention to display the pointers with greater detail. Moreover, the pointers can be displayed with appropriate UI mechanisms that provide an improved UX to search for specific resources within the collection of pointers. Specifically, with user permission, the pointers can be presented as a timeline of the user's web browsing activities by presenting pages or collection of pages in chronological order, thus allowing the user to scroll to locate and switch to a previous task. Such a chronological ordering provides an effective and efficient mechanism for switching between tasks compared to the tabs mechanism that lacks explicit temporal ordering.

By default, the pointers shown in the bottom bar include those that are marked explicitly by the user for later use via browser functionality that allows pages to be bookmarked and/or downloaded to be accessed at a more opportune time. After such explicit marking, the corresponding pages or collections of pages are likely not needed during online activities in the immediate future. Therefore, the expandable bottom bar provides a filtering option that enables users to filter out pages or collections of pages that have been bookmarked and/or downloaded to the local device for later use. If the user chooses to filter out the resources saved for later use, the bottom bar includes only those pointers that have not been saved, thus limiting the information shown to that which the user is still likely to need in pursuit of ongoing tasks. If the user chooses to view the resources saved for later use, the bottom bar includes only the saved pointers.
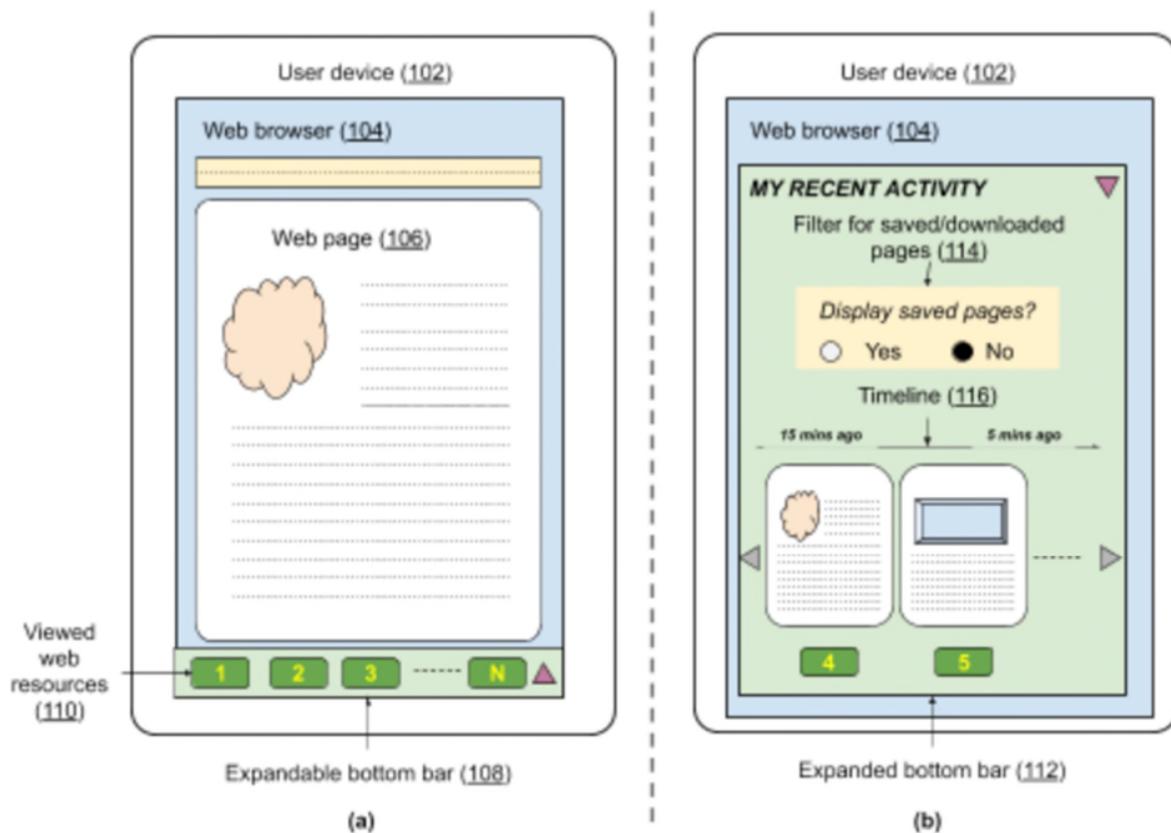
Fig. 1: Expandable bottom bar to display and filter pointers to resources for browsing tasks

Fig. 1 shows an example user interface of a browser with an expandable bottom bar, as described in this disclosure. As shown in Fig. 1(a), a web page (106) is displayed within a web browser (104) on a user device (102). The browser includes a bottom bar (108) that includes pointers (1,2, 3, … N) to web resources previously viewed by the user (110). As mentioned above, the pointers can be individual web pages or collections of pages representing navigation sequences.

As shown in Fig. 1(b) the bottom bar can be expanded (112) for more detailed viewing and navigation. The expanded view provides detailed information on each of the web resources available within the bottom bar arranged along a timeline (116) of activities. Further, the user can choose to have the timeline display only the pages that have not been saved and/or downloaded to the device by using the provided filter (114).

In essence, with user permission, the expandable bottom bar provides an on-demand interactive mechanism that serves as a short-term buffer for ongoing browsing activity that provides improved user experience compared to the existing history and tabs mechanisms, especially within the limited screen real estate available on mobile devices. The described mechanisms can be implemented within any browser (or other application) that involves multiple simultaneous task threads and navigational sequences.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed.

For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes mechanisms to improve the user experience for accessing previously visited web resources within a browser or app. To that end, a browser includes an expandable bottom bar that allows the user to display and filter pointers to browsed resources effectively and efficiently. With the user's permission, the bottom bar includes pointers to the pages or collections of pages visited previously by the user. The bottom bar is expandable upon being selected by the user. When the bar is expanded, the pointers are presented as a timeline, enabling the user to scroll to locate and switch to a previous task. Further, the user can choose to filter out from the timeline the resources saved for later use. The described techniques provide an enhanced user interface within the limited screen real estate available on mobile devices.