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## Enhanced Quick-Preview to Show Additional Content Prior to Navigation

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## Enhanced Quick-Preview to Show Additional Content Prior to Navigation

### Abstract:

This publication describes an enhanced quick-preview feature. Some computing devices (*e.g.*, smartphones) offer a quick-preview feature enabling content to be quickly previewed within a popup window without requiring navigation away from a current window or screen of a graphical user interface (GUI). By so doing, these devices provide the user with an opportunity to preview the content before navigating to the content on a different GUI window or screen. The enhanced quick-preview feature described in this publication enables the user to preview additional content also before navigating away from the current GUI. For example, assume that a user selects to preview content within a GUI, such as with a press-and-hold gesture. In response to detecting this selection, a computing device presents a quick-preview feature on the device's display. The quick-preview feature displays a portion of the content in a popup window, or "content preview," overlaying a current GUI window or screen. Rather than be limited to what is initially shown in the content preview, the enhanced quick-preview feature allows other parts of the content to be previewed, still without navigating to the content on a different GUI window or screen. Through additional, small-gesture interactions performed while maintaining a gesture (*e.g.*, maintaining a constant pressure for a press-and-hold gesture), the user can manipulate the content preview and vary which parts of the content are shown. The content preview expands or contracts in size or scrolls in a direction consistent with the movement of the quick-preview gesture. In this way, a computing device provides a more-convenient and enjoyable quick-preview experience, is able to preview more content than what is initially shown, and help users decide whether or not the content is of sufficient interest to warrant navigating to a different GUI window or screen.

**Keywords:**

gesture, quick preview, search preview, force touch, 3d touch, touchscreen, GUI

**Background:**

Some computing devices (*e.g.*, smartphones) offer a quick-preview feature enabling content to be quickly previewed within a popup window without requiring navigation away from a current window or screen of a graphical user interface (GUI). The user is provided an opportunity to preview the content before committing and navigating to the content on a different GUI window or screen. While helpful to some users, other users may have difficulty deciding whether to navigate based on current content previews.

For example, as shown to the right, in Figure 1, a user may interact with a search application on a computing device. A GUI of the search application displays search results as selectable graphical elements. While the selectable elements, in this case search results, may themselves include brief textual descriptions or summaries of content on corresponding pages, the computing device requires further user interaction before navigating to content linked to the search results. To aid users in deciding whether to commit to navigating to the content on a subsequent GUI window or screen, the computing device invokes a quick-preview feature in response to detecting a quick-preview gesture at a trackpad, touchscreen, or other presence-sensitive screen.

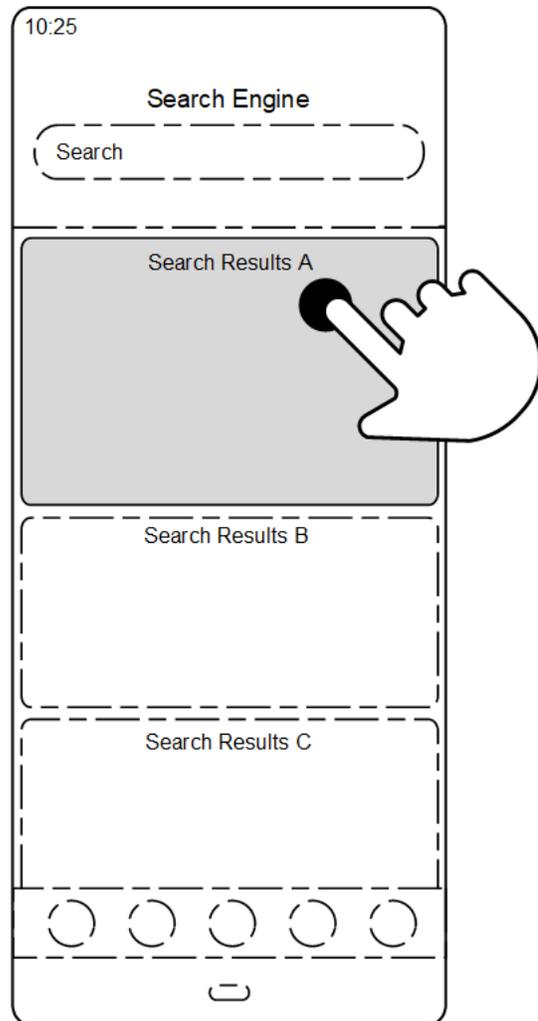


Figure 1

As illustrated to the right, in Figure 2, the computing device interprets a firm, press-and-hold gesture near a selectable element of the GUI as a quick-preview gesture. Rather than navigate away from a current GUI window or screen to the content of a particular search result, in response to the quick-preview gesture the computing device previews the content from within the current GUI window or screen, such as through outputting a fixed-dimensional-popup window overlaying the current GUI window or screen. Thus, the computing device previews a portion of the content linked to the search result from within the current GUI window or screen. With the user continuing to provide the gesture for a duration of time, the computing device interprets the continuing gesture as a signal that the user wishes to

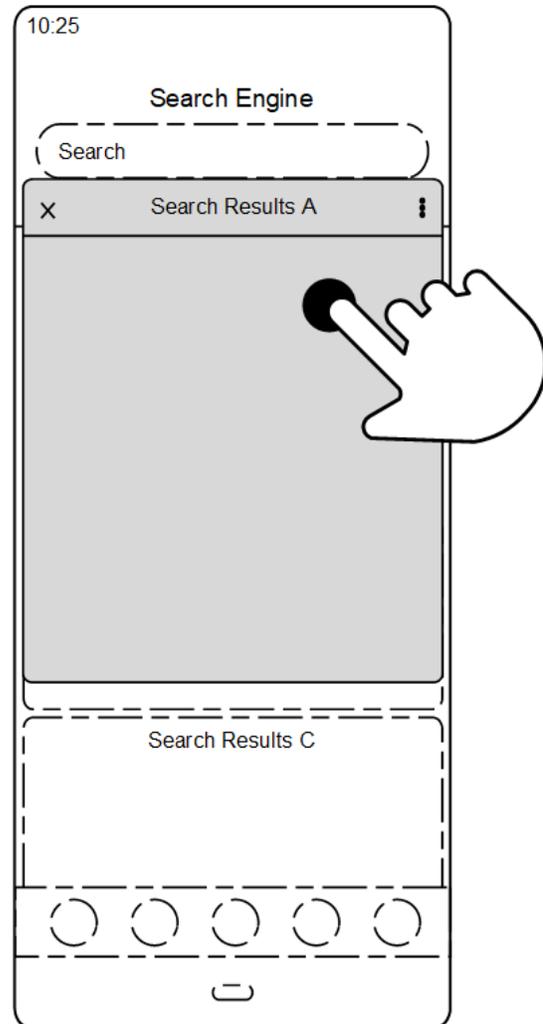


Figure 2

commit and navigate to the content. If a release of the quick-preview gesture is detected, the computing device snaps the content preview back into the background of the GUI or otherwise makes the fixed-dimensional-popup window disappear. While a fixed-dimensional content preview may provide some indication of the underlying content that is accessible on a different GUI window or screen, the content preview may be inadequate to aid a user in deciding whether to commit to navigating to the content. As a result, even with quick-preview in its present form,

users tend to click back and forth between pages of content until they find for what they are searching.

Qualitative research shows that users who are unsatisfied with the amount of information given in a content preview could, at times, be satisfied if only a little more information was provided in the popup window. The user could commit to navigating to content if able to quick-preview more content.

**Description:**

This publication describes techniques for enhancing a quick-preview feature of a GUI to further reduce user interaction needed to reach desired content. By continuing a quick-preview gesture, the user can select to expand or contract an amount of information that is shown during a content preview. With a way to expand the information shown in a standard-sized quick preview, the user can perform a quick-action or obtain additional information for gaining confidence in deciding whether or not to navigate to the content and therefore away from a current GUI window or screen.

As previously shown in Figure 1, a user interacts with a search application executing on a computing device. The search application outputs a GUI on a touchscreen including a search field for inputting search terms and a listing of search results displayed as a group of selectable elements. The user can select any of the search results by gesturing at or near a particular graphical element on the computing device's touchscreen. For example, in response to a user's tap gesture, the computing device navigates to content associated with the search result that is nearest to the tap gesture.

While selectable elements, in this case search results, may themselves include some content (*e.g.*, brief textual descriptions or summaries of content on corresponding pages), the computing device aids users in deciding whether to commit to navigating to a subsequent GUI window or screen by offering a quick-preview feature.

The computing device can interpret a firm, press-and-hold gesture near a particular search result as a quick-preview gesture for triggering the quick-preview feature. A tap or other gesture near the same search result will cause the computing device to navigate to the particular search result or perform some other action. The computing device discerns between tap gestures selecting search results for navigating to content, and quick-preview gestures that trigger quick previews of the content.

As shown above, in Figure 2 the user performs a quick-preview gesture near a particular graphical element on the computing device's touchscreen. Rather than navigate to corresponding content, the computing device overlays a content preview (*e.g.*, a popup window) on top of the listing of search results. In this way, rather than navigate away from a current GUI window or screen to show the content of a search result, the computing device previews the content from within the current GUI window or screen.

While sometimes beneficial, the information gleaned from a content preview, such as that shown in Figure 2, may be inadequate in helping a user decide whether to navigate to the content. For example, a user searching for a particular image of an automobile may get frustrated seeing only a portion of the automobile from a standard-sized, content preview. In another example, a user may need to recall a missing ingredient for a recipe and hopes to see an ingredient listing when previewing an online version of the recipe, only to be annoyed when the ingredient listing is omitted from the content preview. Countless other scenarios exist where a user may wish to

expand a content preview to see more information before deciding to navigate to the content in another GUI window or screen.

Rather than treat content previews as mostly static objects, the computing device enhances the quick-preview feature by enabling the content previews to expand or scroll and show additional information beyond what is initially shown. The computing device expands a content preview to show more information in response to detecting deliberate movement associated with an ongoing, quick-preview gesture.

As shown to the right, in Figure 3, if after being detected with sufficient duration of time at the touch screen to invoke the quick-preview feature, the gesture input moves in a particular direction, the computing device will expand the content preview based on the movement. For example, assume that the quick-preview gesture extends in a downward direction (e.g., in a direction that goes from a top edge of the touch screen to an opposite bottom edge) without breaking continuity (e.g., without a lift away from the touch screen). Using the enhanced quick-preview feature, the computing device extends the content preview to show additional or different portions of the corresponding content to what was initially shown.

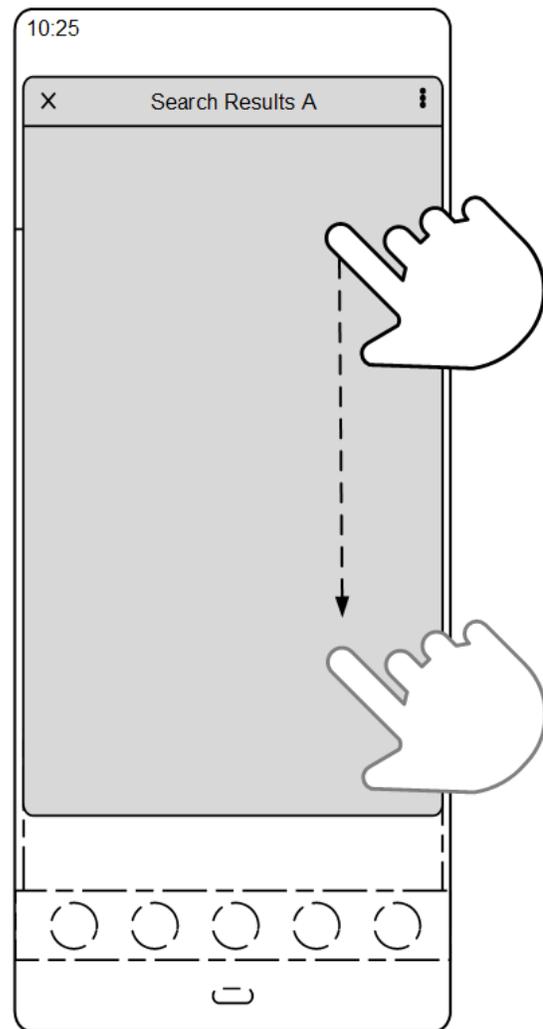


Figure 3

Referring to Figure 4, shown to the right, if after extending the quick-preview downward and again without breaking continuity, the quick-preview gesture contracts in an opposite, upward direction (e.g., in a direction that goes from the bottom edge of the touch screen to the opposite top edge), the computing device reduces the size of the content preview to show less of the corresponding content, e.g., the corresponding content in its originally- previewed form. Although not illustrated in the drawings, the computing device can expand and contract the size of the quick-preview in other directions as well, not just vertical directions, enabling preview of more content in horizontal or diagonal directions (e.g., relative to the top and bottom edges of the touch screen). The size and rate

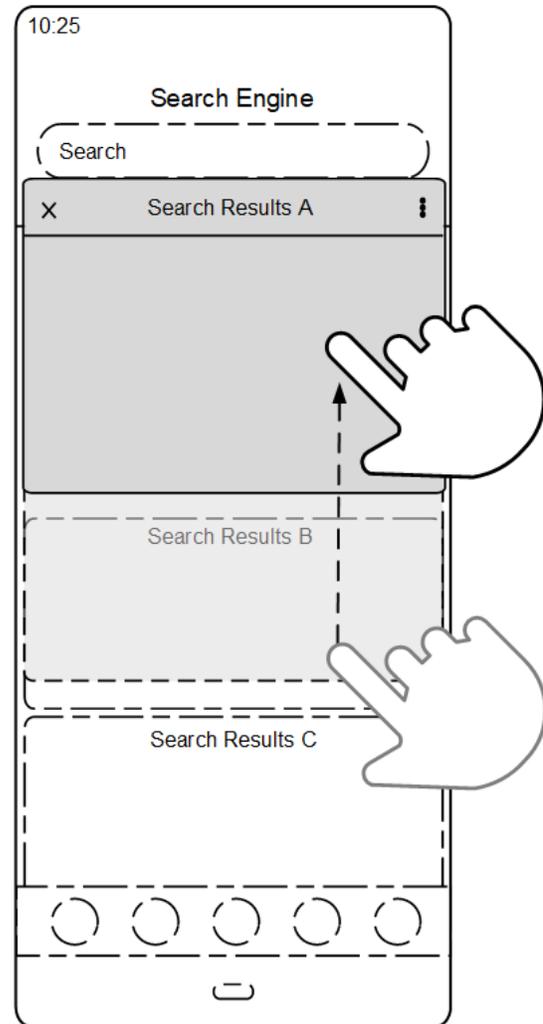


Figure 4

of expansion of a content preview may be proportionate to the length and the speed of the extension of the quick-preview gesture.

The computing device may perform actions or functions in response to the continuing quick-preview gesture, other than showing additional or less content. For example, dragging the quick-preview gesture in an upward direction enables preview of more content in the vertical directions and dragging the quick-preview in a downward direction triggers a “shrink preview”

and action, such as copying the content to a clipboard, navigating to the content, forwarding the content, or some other action.

An interaction with a search application is only one example use case for enhancing a quick-preview feature using the described techniques. Other applications or services accessible from a computing device can include an invocable quick-preview feature that has been enhanced using the described techniques, *e.g.*, to enable a user to better preview content before committing to the content and navigating to a subsequent screen.

Therefore, rather than be limited by a standard quick preview having little discernible content, the computing device allows a user fine control over the content preview to show more content or to perform a quick-action, with only minimal additional effort beyond initially providing a quick-preview gesture. In this way, users are provided a convenient and enjoyable experience by which to quickly preview more content when deciding whether to navigate to a different GUI window or screen.

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