

“ipod”. Conventionally, input entered into the search field is not submitted to a search engine as part of a search query until the user issues an express submit command, such as by pressing a “Return” button on a keyboard. According to one embodiment of the present invention, a search query may be submitted automatically while a user inputs the search terms into a search field. Thus, in one embodiment, upon receiving the input of the first character (e.g. “i”) into the search field **504**, the web browser application automatically submits a query to the search engine (e.g. www.google.com) using the as-of-then received input from the search field **504**. Thus, referring to **FIG. 5B**, the address bar **502** includes the URL **510** containing the query submitted, <http://www.google.com/search?q=i&ie=UTF-8&oe=UTF-8>, wherein the i immediately following “search?q=” represents the i character typed into the search field **504**. The results from the submitted query based on the text input into search field **504** of **FIG. 5A** are displayed in the web page **508** of results shown in **FIG. 5B**.

[0059] Thus, as a user types the characters of the search term(s), partial search strings are sent to the search engine at designated intervals or as certain triggers are satisfied. By “partial,” it is meant that the query only includes the as-yet-received input of the search term; the search string itself is otherwise complete enough to be in a format which will allow it to be appropriately processed by the search engine. Referring to search field **504** of **FIG. 5B**, the user continues to type the desired search input by typing the next character, p, of the search term, ipod. Upon receiving this next character of the search term, the web browser application automatically submits another query to the search engine, incorporating the additional input. Thus, referring to **FIG. 5C**, a web page **508** of results for a query based on the input characters, ip, are displayed. These new results for the “ip” query update or replace the results from the previous “i” query. In this manner, immediate feedback in the form of dynamic or “real time” results are provided while a user is in the process of entering their desired search term. The address bar **502** is updated to reflect the URL **510** associated with the query which elicited the displayed responses, e.g. <http://www.google.com/search?q=ip&ie=UTF-8&oe=UTF-8>. Search field **504** of **FIG. 5C** illustrates that the user continues to input the search term by inputting the next character, o. Again, a new query including the cumulative input received in the search field **504** (e.g. ipo) is automatically submitted upon receiving input of the o character. Results **508** for this query are subsequently automatically displayed after receiving them from the search engine, as illustrated in **FIG. 5D**. Likewise, as the user enters the final character of the search term, d, into the search field **504** of **FIG. 5D**, a new query is submitted to the search engine incorporating the entire search term, ipod, and the corresponding received results **508** are displayed as illustrated in **FIG. 5E**.

[0060] Thus, referring collectively to the embodiments illustrated by **FIGS. 5A-5E**, as a user inputs a search term, partial search strings are incrementally automatically submitted to the search engine, which causes results for each of the partial queries to be automatically displayed and updated as the user types, without requiring the user to issue an express submit command. One advantage of this is that, while typing a search term, a user may see a desired result in the web page **508** before the user has completely typed in their intended search terms; the user may select this result

(e.g. by clicking on its hyperlink), thereby allowing the user to access desired information more quickly than they might have otherwise, e.g. if they had been required to completely enter their search term(s) and manually submit the query. Additionally, the immediate search feedback provided by the “live” or dynamic updating of the search results, based on returned results for the most recently automatically submitted query, allows a user to modify a query before they have completely input their intended query. For example, this is particularly useful if a user misspells a search term, since the user may notice as they type that the results are not what was expected, and may accordingly modify their search terms.

[0061] It should be noted that for purposes of clarity, **FIGS. 5A-5E** and their corresponding description illustrate embodiments in which a search query is automatically submitted after receiving each additional character of text input (i.e. a type of substantive trigger); it will be appreciated that use of other triggers for automatically submitting a search, such as those described above with respect to **FIG. 4**, are contemplated.

[0062] Referring again to **FIGS. 5A and 5B**, in one embodiment, the immediate search feedback aspect of the present invention may be implemented through a search field **512** presented within a web page itself, as opposed to a search field **504** that is integrated into the toolbar **506** of a web browser application window **500**. For example, a user may visit a web page and begin to type search terms into a search field **512** presented on the web page **508**. As the user types the characters of the search terms, partial search strings are generated and submitted to a search engine. The results corresponding to these partial queries may be presented, such as is illustrated in **FIG. 5B**. In one embodiment, the web page-based search field **512** may be implemented alone or in combination with the integrated search field **504**. In one embodiment, a web page based search field having immediate search feedback capabilities may be implemented through a self-submitting form on a web site, using for example JavaScript that detects input on a field, and then periodically submits a new query string, causing the page to be reloaded displaying the results of the new query string. Such a form may be used to automatically submit the partial search strings at specific intervals or upon the satisfaction of certain triggers, as described above with respect to **FIG. 4**. In one embodiment, application code implemented on the server-side of the web page may generate the partial search strings and their immediate search feedback results. In another embodiment, a search field having immediate search feedback capabilities may be positioned in a first frame of a web page, while results based on queries generated from the input into the search field are displayed in a second frame of the web page. A frame is typically a subsection of a web page that is displayed independently of other portions of the page. For example, as a user types search terms into the field of the first frame, the second frame of the web page is reloaded to display returned results for each automatically submitted search.

[0063] In one embodiment, where a search field **512** is presented as part of a web page **508**, the search engine to which the partial strings are automatically submitted does not necessarily have to be associated with the same domain as that of the URL of the web page **508**. For example, if a search field **512** is presented on a web page accessible at