one embodiment, the search results Web page is partitioned into logical sections, and a partition map is generated, such that target pages can be chosen via the partition map in addition to (or instead of) via the tabs on the right side of the display. In another embodiment, a (readable) summary page is created as a result of the analysis operation **1207**, where short summaries of each of the target pages are listed. A preparation operation **1210** prepares the search results Web page for display on the client. In one embodiment, the preparation operation **1210** generates a thumbnail image of the search results Web page and adds progress tabs to the image. In another embodiment, some portion of the analysis operation **1207** may be performed in preparation operation **1210** so as to provide feedback to the user with the search results. For example, the search results may be annotated to indicate the number of hits for a given a search result or to identify dead links in the search results Web page. A dead link can be identified by an inability to download the target page corresponding to a given search result. In yet another alternative embodiment, the search results Web page is displayed in SmartView mode with partition lines. A display operation **1209** displays the search results thumbnail image in SmartView mode with progress tabs on the client.

[0064] The analysis and preparation of the displays in the SmartView and detailed view modes are described in detail in previously incorporated U.S. patent application Ser. No. 10/306,276, entitled "WEB PAGE PARTITIONING, REFORMATTING AND NAVIGATION". The analysis operation **1207** analyzes the document layout to identify the individual logical sections. In one embodiment, the document to be analyzed is laid out as if it was to be displayed on a desktop computer, i.e., with a page size of sufficient width that the elements in the page assume their "natural" specified size (e.g., 800 pixels wide).

[0065] In other alternatives, the analysis of the document layout may include discovery of other properties of the content of the logical sections that can be displayed on the partition map. For example, the partition map can indicate that a particular section contains a control element, such as a form or a search box. In such embodiments, a representation of the property (such as an icon or text label) may be display in the partition map in association with the logical section.

[0066] The document is partitioned into its individual logical sections by traversing the HTML document structure or HTML Document Object Model (DOM). The DOM is a hierarchical representation of an HTML document, where each node in the DOM represents either an HTML element or a piece of text. The children of the node are all the HTML element and text nodes that are completely contained in the corresponding HTML element representing the node (e.g., a node representing a row of an HTML table is a child node of the table node, and the table cells in that row, in turn, are children of the row node).

[0067] In one embodiment, at each element node in the DOM structure, it is determined whether the node represents one of the elements that the analysis is based upon, i.e., an HTML table, a form's element, etc. If so, and if the width that the element occupies on a page is laid out for a desktop computer display (as explained above), the element is bookmarked as a possible "logical section". If the element's width exceeds that of the target device screen (e.g., a handheld display screen) by a certain margin, processing continues with its children. Otherwise, the element's children are not further processed.

[0068] Whether a node is bookmarked as a logical section may be determined by a set of one or more predetermined rules. For example, if a table node is much wider and higher than the target device screen, the table node is not bookmarked as a logical section. Instead, all of the table node's cells are bookmarked as logical sections. In another example, if a table node's specified width (as an attribute to the HTML table element) is set to be 100% (i.e., the maximum available width) but, in its layout on the web page, the table node is within threshold amount wider than the target screen, then the table node is assumed to fit into the smaller target width of the handheld device's display. Therefore, the table node is not bookmarked as a logical section (because it "substantially" fits into the display) and neither are any of its cells.

[0069] The size of the target device screen is a parameter of both the analysis/partitioning operations and the reformatting operation (see below), and is made known to these processes in one of two ways, depending on whether these operations run locally on the device or remotely on a proxy server. If the process is running locally on the device, the dimensions of the device's screen are a system property that a program can access. Alternatively, the dimensions can be stored in and accessed from a global system storage, such as the system registry. If the process is running remotely on a proxy server, the program can access the dimensions of the target device and communicate them to the proxy server as part of the request to perform the analysis.

[0070] The result of the analysis/partitioning operation is a vector of nodes in the DOM that are the roots of logical sections. Each logical section is annotated by to the region that it occupies on the standard layout of the document. This annotation information is used in a subsequent operation to mark the logical sections in the partition map.

[0071] An analysis operation **1212** processes each search result target page and stores the analysis results in a cache **1214**. The analysis data for each search result target page, which may include without limitation the downloaded target page, layout analysis results, a thumbnail image, linguistic analysis results, and statistics of linguistic features and searches, are stored in the cache **1214** to annotate the search result target page in SmartView mode when selected for viewing by the user. In addition, the cached data may be reused for different search sessions (e.g., a documents search, a single document search, a section (of a document) search, or a new Web search) later.

[0072] Exemplary detailed operations of the analysis operation **1212** are discussed with regard to **FIG. 13**. As each search result target page is processed in the analysis operation **1212**, data is sent to the client to update the display of the progress tabs and any other annotations to the search results Web page in updating operation **1211**. For example, as analysis of each target page completes, data is sent to display the search results Web page with a highlighted progress indicator corresponding to the completed target page. Likewise, any search results Web page annotations may also be set to the client. For example, the relative strength of the individual search results may be annotated into the thumbnail image of the search results Web page,