

Relational Browser++: an information exploration and searching tool

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The system we will demo is an interface called Relational Browser++ (RB++), which is intended to help users explore, browse and search large information collection effectively and efficiently. It is the latest updated version of relational browser (Marchionini & Brunk, 2003). Applications of RB++ in several different domains will be demonstrated, such as library video collection, EIA (Energy information administration) web site. Following description is based on the RB++ application for EIA web site.

RB++ was developed as a Java applet which can be invoked in internet browsers. When the applet is loaded, the RB++ presents the initial interface (Figure 1), which consists of three components. Upper component is an overview panel (or browsing panel), which provides an overview of the information collection by displaying different facets (or categories) of the dataset such as fuel type, geography, sector and process. The facet values are all labeled and are represented by graphical bars, the lengths of which visualize how many web pages are associated with them. Overview panel also enables users to explore the relationships between different facets by simple mouse operations. Users can restrict the information items (partition the information space) by mousing over or click any graphical bars and other bars are proportionally highlighted to show the conditional distribution (Figure 2). This feature not only gives the users the power to gain deeper understanding of the collection but also provide query preview function (Tanini, et. Al, 2000) for users to have the look ahead ability before they commit any search operation.

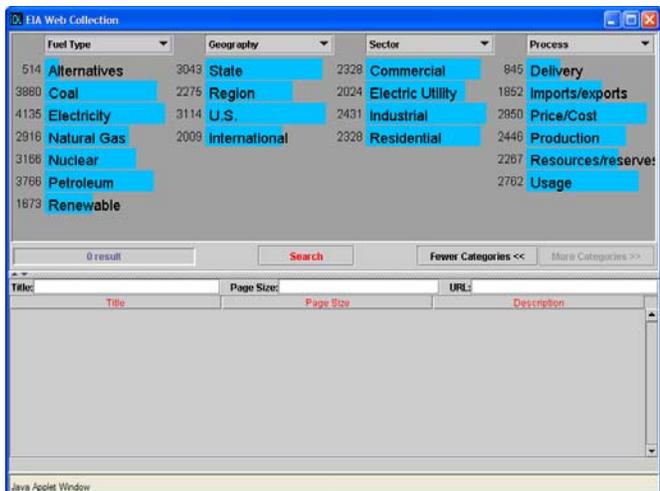


Figure 1. Initial interface

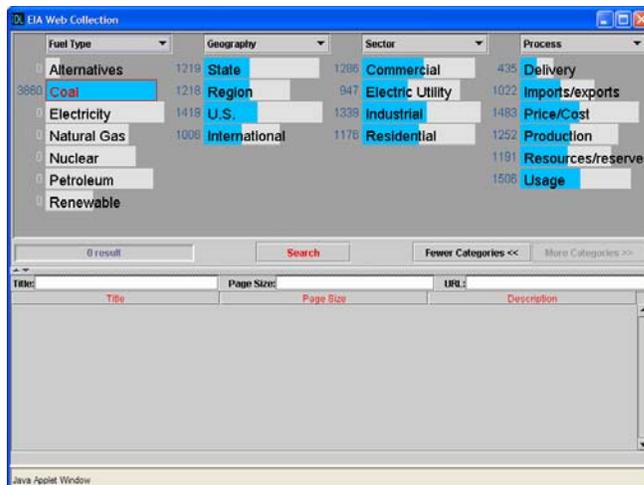


Figure 2. Mouse over the “Coal” under “Fuel type” category reveals the distribution of coal related web pages on other categories

Second component is the control panel at the middle of the interface. Several subcomponents are located on the control panel. Two buttons on the right enable users to show more or fewer facets (or categories) on the overview panel. The middle search button enables users to do the search on selected bars and/or any keywords typed in the searching boxes below the control panel and the

retrieved result set is displayed as a table at the bottom of the interface. On the left of control panel is a component to visualize and display the number of results in the table.

At the bottom of the interface is the result panel mentioned above. There are several search boxes on the upper part of the panel, which allows the users do the textual query on other metadata of the dataset, such as page title, page size, and description of page.

After users hit the search button and get results back in the table (Figure 3), interface provides rich user interaction allowing users to explore and do future filtering on results. The graphical bars on the overview panel are updated to provide the overview and function of partitioning information space on result set. The results can be sorted by any of fields by clicking relevant headings. Keywords typed in the searching boxes can dynamically and continuously filter the results and only matched ones are displayed (Figure 4). Keywords appearing in the fields are highlighted. In the mean time graphical bars on the overview panel are also highlighted proportionally to reflect the updated distribution of filtered results. The feedback label under the table always tells users what restrictions or queries they have on the information collection and the results.

Overall, the interface provides three main features: 1. Uniform and dynamic global and local overview; 2. Dynamic result filtering capability; and 3. Tight coupling of searching and browsing, which we believe can greatly help users explore and search information easily and effectively.

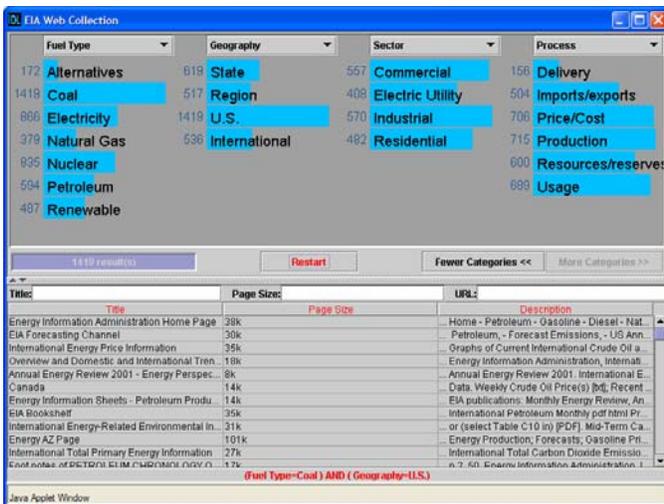


Figure 3. Interface with the retrieved result of all the “Coal” related web pages

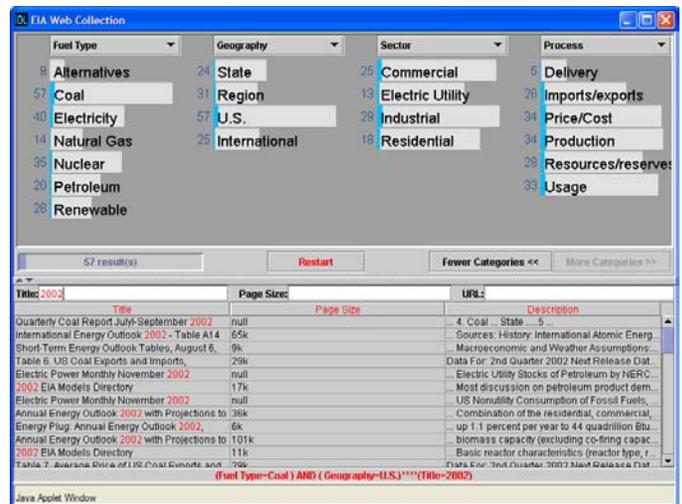


Figure 4. Further filter the results by inputting keyword in title search box. In the mean time the graphical bars are proportionally highlighted.

Marchionini, G., and Brunk, B. Toward a general relation browser: A GUI for information architects. *Journal of Digital Information*. Article No. 179, 2003-04-09 2003 4(1). <http://jodi.ecs.soton.ac.uk/Articles/v04/i01/Marchionini/>

Tanin, E., Lotem, A., Haddadin, I., Shneiderman, B., Plaisant, C., and Slaughter, L. Facilitating data exploration with query previews: a study of user performance and preference. *Behaviour & information technology*. 2000 19(6). 393-403.