

DATABASE SYSTEM HAVING SELECTABLE TERMS FOR USER INPUTS AND METHOD THEREOF

Field of the Invention

5 The present invention relates to database systems with searchable information accessible by users via user workstations. In particular, this invention relates to a database system having selectable terms for user inputs and methods thereof.

Background of the Invention

10 A database system typically processes data in response to user inputs received via a user workstation. Such user inputs may be search commands to retrieve information from storage or data entry to provide information for storage within the database systems. A user generally provides these user inputs with an input device connected to the user workstation such as a keyboard or a mouse. A
15 processor of the database system then processes the user inputs to retrieve or to store the information according to processing instructions defined by, for example, computer software programs.

 Generally, information in a database system is organized for storage and
20 retrieval. This typically requires user inputs to be based upon a predetermined format for processing by a processor of the database system. For example, US Patent No. 5,426,781, issued to Kaplan et al and assigned to International Business Machine, describes a computer database system in which a table metaphor is used to construct a query. Another example is provided by US Patent No. 5,761,064, issued to La et al
25 and assigned to Advanced Micro Devices, Inc., in which is described how data is collected and converted into a standard data format.

 In addition to predetermined formats for user inputs, the use of standard terms enables efficient searching of a database. Such standard terms generally
30 depend on the type of data supported by the database system. For example, a

database system for manufacturing steel typically has standard terms that relate to the type of steel products being manufactured.

However, database systems described in the above require users to have
5 sufficient knowledge of an industry and the standard terms related to that industry when providing inputs to retrieve or to store information. This is a problem for users who are not familiar with the standard terms or are new to the industry. Performing efficient searches to retrieve information stored in these database systems can be difficult for these users. In addition, the information provided by these users may not
10 be appropriate for storage when such users are ignorant of the standard terms to use. Consequently, these database systems are not efficiently or effectively used or established for use.

Therefore, a need clearly exists for a database system that enables easier
15 retrieval or input of information by users not familiar with standard terms applied for the database system.

Brief Summary of the Invention

The present invention seeks to provide a database system having selectable
20 terms for user inputs, a method and a product comprising a computer program for processing the user inputs by a controller of the database system.

Accordingly, in one aspect, the present invention provides a database system comprising:

- 25 at least one storage media;
- at least one user workstation coupled to the at least one storage media and having:
 - a display for displaying a user input page having one or more
 - selectable term input fields;
 - 30 and

a user input device, coupled to the display, for selecting at least one user-selectable term, each of the user-selectable term being selected from a different selectable term input field of the selectable term input fields;

5 and

a controller, coupled to the storage media and the user workstation, for receiving the user-selectable term and, thereafter, to process the user-selectable term based upon a function associated with the user input page.

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In another aspect, the present invention provides, in a database system having a controller, a method for processing user inputs by the controller, the method comprising the steps of:

providing a user input page having one or more selectable term input fields
15 for viewing on a display of a user workstation;

receiving from the user workstation user input corresponding to at least one user-selectable term, each of the user-selectable term being selected from a different selectable term input field of the selectable term input fields;

and

20 processing the user-selectable term based upon a function associated with the user input page.

In a further aspect, the present invention provides a product comprising computer usable medium having a computer program recorded thereon for
25 processing user inputs by a controller of a database system, the product comprising:

computer program code means for providing a user input page having one or more selectable term input fields for viewing on a display of a user workstation;

30 computer program code means for receiving from the user workstation user input corresponding to at least one user-selectable term, each of the user-

selectable term being selected from a different selectable term input field of the selectable term input fields;

and

computer program code means for processing the user-selectable term
5 based upon a function associated with the user input page.

Brief Description of the Drawings

A preferred embodiment of the present invention will now be more fully
10 described, by way of example, with reference to the drawings of which:

FIG. 1 illustrates a functional block diagram of a database system in
accordance with the present invention;

15 FIG. 2 is a screen shot of an exemplary user input page provided by the
database system of FIG. 1;

FIG. 3 is a screen shot of another exemplary user input page provided by the
database system of FIG. 1;

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FIG. 4 is a screen shot of an exemplary report preview in response to
actuation of an indicator displayed on the user input page of FIG. 3;

FIG. 5 is a flow chart of a method for processing user inputs by a controller
25 of the database system of FIG. 1;

and

FIG. 6 is an example of a computer system for processing user inputs by a
30 controller of the database system of FIG. 1.

Detailed Description of the Drawings

A database system having selectable terms for user inputs, a method and a product comprising computer usable medium having a computer program recorded thereon for processing the user inputs by a controller of the database system in accordance with a preferred embodiment of the invention are described. In the following description, details are provided to describe the preferred embodiment. It shall be apparent to one skilled in the art, however, that the invention may be practiced without such details. Some of these details may not be described at length so as not to obscure the invention.

There are many advantages of the preferred embodiment of the invention. One advantage of the preferred embodiment is that selectable term input fields are provided, via a user input page, to enable easier entry of user inputs to the database system compared to existing database systems. The selectable term input fields provide standard terms associated with the database system for selection by a user.

Another advantage of the preferred embodiment of the invention is that the database system serves as a reporting tool that provides reports in a predetermined format based upon the standard terms. Consequently, information retrieved for such reports by different users are standardized using the standard terms.

A further advantage of the preferred embodiment of the invention is that the standard terms can be supplemented when new terms are introduced for an industry. Such new terms are introduced when technological advances in the industry lead to changes or developments.

In describing the preferred embodiment, the steel industry is used as an exemplary implementation of the database system. However, it is to be noted that the preferred embodiment can be applied generally in the metallurgy industry in which standard art terms are used.

Referring now to FIG.1, a functional block diagram of a database system 10 in accordance with the present invention is illustrated. The database system 10 comprises a storage media 12, two user workstations 14a,14b coupled to the storage media 12, and a controller 16 coupled to the storage media 12 and the user workstations 14a,14b.

The database system 10 can be within an Intranet environment or coupled to the Internet 18 via a communication resource 20. Such a communication resource 20 can be, for example, cables, optic fibers or wireless communication media such as radio frequency channels. The user workstation 14b is coupled to the controller 16 via the Internet and another communication resource 22.

The storage media 12 may include one or more memory devices such as random access memories (RAMs), read-only memories (ROMs), hard disks, compact discs or floppy disks.

Each of the user workstations 14a,14b has a display 24 and a user input device 26 such as, for example, a keyboard or a mouse. Henceforth, to simplify the description of the preferred embodiment, reference is made to the workstation 14a only as an illustrative example. Accordingly, the workstation 14b can also provide the same features as the workstation 14a unless otherwise indicated.

The display 24 enables the displaying of one or more selectable term input fields. Each of the selectable term input fields has a menu that provides one or more user-selectable terms. The user input device 26 enables a user to select a user-selectable term from at least one of the selectable term input fields.

Referring now to FIG. 2, a screen shot of an exemplary user input page provided by the database system 10 is illustrated. A selectable term input field 32

labeled as 'Failure stage' is indicated. When actuated, the selectable term input field 32 displays a menu 34 having user-selectable terms.

5 The user input page 30 enables a user to provide user inputs that is subsequently processed by the controller 16. The user inputs corresponds to one or more user-selectable terms that the user selects from at least one of the selectable term input fields.

10 In response to the user inputs, the controller 16 accesses the storage media 12 to determine whether any information associated with the one or more user-selectable terms can be identified. If such information is available from the storage media 12, the controller 16 retrieves the information and provides that information for viewing on the display 24a.

15 FIG. 3 is a screen shot of another exemplary user input page 40 provided by the database system 10. The user input page 40 enables a user to provide information as user inputs that is subsequently processed by the controller 16 for storage in the storage media 12. A selectable term input field 42 under a subject heading of 'Steel grade' has an entry 'SWRH 42A' indicated. Another selectable term input field 44
20 under a subject heading of 'Steel product' has an entry 'Wire rod' indicated. Also indicated in FIG. 3 are two input fields 45,46, respectively labeled 'Size (mm)' and 'Total tonnage affected (MT)'. These two input fields 45,46 are for user inputs that are entered by the user when a menu to select user-selectable terms is not provided.

25 The user input page 40 also provides indicia for selecting at least one function associated with the user input page 40. Three indicia 47,48,49 are indicated. When a function represented by, for example, the indicator 49 is actuated, the controller 16 processes user inputs from the selectable term input fields 45,46 and the input fields 45,46 according to that function, which, in this instance generates a
30 'Report Preview'.

FIG. 4 is a screen shot of an exemplary report preview 50 in response to actuation of the indicator 49 displayed on the user input page 40. In particular, the exemplary report preview 50 provides information related to the selected terms 'SWRH 42A' and 'Wire rod' as well as user input '5.5'. These selected terms and user input were provided by the user prior to actuation of the indicator 49.

Operation of the controller 16 is illustrated with a flow chart of a method 60 for processing user inputs associated with the database system 10. As noted earlier for the preferred embodiment, such user inputs provided terms related to the steel industry.

It is to be noted that the method 10 assumes that the database system 10 has users who have been registered to access information stored in the storage media. Each of these users has access rights with regard to the information that can be retrieved.

Referring now to FIG. 5 and based upon the user input page 40 as an illustrative example, the method 60 starts at step 61. The method 60 then proceeds to step 62 at which the user input page 40 is provided for viewing on the display 24a. The user input page 40 is provided upon determining access rights of the user requesting the user input page 40.

At step 63, the controller 16 displays a menu associated with each of the two selectable term input fields 42,44. The menu is displayed when a selectable term input field 42,44 is actuated by the user using the user input device 26. Actuation can be, for example, by pointing to one of the selectable term input fields 42,44 using the user input device 26.

In providing the menu that is displayed, the controller 16 provides one or more user-selectable terms that are compiled based upon standard terms used in the steel industry. These standard terms include phrases as shown in the menu 34

displayed on the user input page 30 of FIG. 2. Compiling such user-selectable terms may require updating the menu 34 to account for new standard terms or amending the menu 34 to remove or to change these standard terms.

5 Thereafter, at step 64, the controller 16 receives user input corresponding to at least one user-selectable term. It is to be noted that these user inputs indicates selection of the at least one user-selectable term from the selectable term input fields 42,44 or data inputs provided by users through the term input fields 45,46. Each user-selectable term is selected from a different selectable term input field 42,44.

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The method 60 continues with processing the user input at step 65 in response to actuation of an indicator such as, for example, the indicator 49 and is based upon the function represented by the indicator 49. In this illustrative example, the function that the indicator 49 represents generates a 'Report Preview'.

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The steps of the method 60 can be executed via a computer program that is recorded on computer usable medium. Such computer usable medium may include random access memories (RAMs), read-only memories (ROMs), hard disks, and the different types of compact discs or floppy disks. A product that comprises the
20 computer program recorded on computer usable medium can be executed with, for example, a computer system 70 as illustrated in FIG. 6.

The computer system 70 can be, for example, a server when the database system 10 is implemented as a client-server system with different access rights for
25 different users. The computer system 70 comprises a computer 71 that includes the storage media 12 and the controller 16. The storage media 12 can serve as the computer usable medium with the computer program recorded thereon. In this case, the storage media 12 can be one or more memory devices such as random access memories (RAMs), read-only memories (ROMs), or hard disks. Alternatively, the
30 storage media 12 can be a memory device reader such as, for example, a compact

disc drive or a floppy disk drive. Such a memory device reader enables access to the computer program of the product by the controller 16.

5 The display 24a is coupled to the controller 16 via a video controller 72. Data flow within the computer is by means of a data bus 73 that couples the video controller 72, the storage media 12, the controller 16 and an input/output (I/O) interface 74. The user input means 26a comprises a mouse 75 and a keyboard 76 that couples to the data bus 73 via another I/O interface 77.

10 The present invention therefore provides a database system 10, a method 50 and a computer program product 70 for processing user inputs to overcome, or at least alleviate, the problems of the prior art.

15 It will be appreciated that although one preferred embodiment has been described in detail, various modifications and improvements can be made by a person skilled in the art without departing from the scope of the present invention.

Claims

1. A database system comprising:
 - at least one storage media;
 - 5 at least one user workstation coupled to said at least one storage media and having:
 - a display for displaying a user input page having one or more selectable term input fields and one or more input fields;
 - and
 - 10 a user input device, coupled to said display, for selecting at least one user-selectable term and for entering user inputs, each of said user-selectable term being selected from a different selectable term input field of said selectable term input fields;
 - and
 - 15 a controller, coupled to said storage media and said user workstation, for receiving said user-selectable term and one or more user inputs entered at said one or more input fields and, thereafter, to process said user-selectable term and said one or more user inputs to provide a report having said at least one user-selectable term and said one or more user inputs based upon a
 - 20 function associated with said user input page.
2. The database system of Claim 1, wherein each of said selectable term input fields comprises a menu to provide one or more user-selectable terms.
- 25 3. The database system of Claim 2, wherein said user-selectable terms comprise terms related to metallurgy.
4. The database system of Claim 1, wherein said user input page comprises one or more indicia for actuating said function.

5. In a database system having a controller, a method for processing user inputs by said controller, said method comprising the steps of:

5 providing a user input page having one or more selectable term input fields
and one or more input fields for viewing on a display of a user workstation;
 receiving from said user workstation user input corresponding to at least
one user-selectable term and one or more user inputs, each of said user-selectable
term being selected from a different selectable term input field of said selectable
term input fields and said one or more user inputs being entered at said one or
10 more input fields;
 and
 processing said user-selectable term and said one or more user inputs to
provide a report having said at least one user-selectable term and said one or
more user inputs based upon a function associated with said user input page.

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6. The method of Claim 5, wherein said providing step comprises the step of
displaying a menu when each of said selectable term input fields is actuated.

7. The method of Claim 6, wherein said providing step further comprises the step
20 of compiling said one or more user-selectable terms based upon terms related to
metallurgy.

8. The method of Claim 5, wherein said providing step comprises the step of
determining access rights of a user requesting said user input page.

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9. The method of Claim 5, wherein said processing step comprises the step of
detecting actuation of an indicator associated with said function and displayed on
said user input page.

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10. A product comprising computer usable medium having a computer program recorded thereon for processing user inputs by a controller of a database system, said product comprising:

5 computer program code means for providing a user input page having one or more selectable term input fields and one or more input fields for viewing on a display of a user workstation;

computer program code means for receiving from said user workstation user input corresponding to at least one user-selectable term and one or more user inputs, each of said user-selectable term being selected from a different selectable term input field of said selectable term input fields and said one or more user inputs being entered at said one or more input fields; and

10 computer program code means for processing said user-selectable term and said one or more user inputs to provide a report having said at least one user-selectable term and said one or more user inputs based upon a function associated with said user input page.

11. The product of Claim 10, wherein said computer program code means for providing comprises computer program code means for displaying a menu when each of said selectable term input fields is actuated.

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12. The product of Claim 11, wherein said computer program code means for providing further comprises computer program code means for compiling said one or more user-selectable terms based upon terms related to metallurgy.

25 13. The product of Claim 10, wherein said computer program code means for receiving comprises computer program code means for determining access rights of a user requesting said user input page.

30 14. The product of Claim 11, wherein said computer program code means for processing comprises computer program code means for detecting actuation of an indicator associated with said function and displayed on said user input page.