A METHOD OF MONITORING THE RECORDS OF A BUSINESS ENTERPRISE

FIELD OF INVENTION

THIS INVENTION relates to a method of monitoring the records of a business enterprise. It also relates to a computer program product for monitoring the records of a business enterprise in accordance with the method and to a monitoring system for implementing the method.

SUMMARY OF INVENTION

According to a first aspect of the invention there is provided a method of monitoring the records of a business enterprise wherein the records are stored in an electronic data storage medium, the method including the steps of:

identifying items of information from particular records stored in the data storage medium that are to be monitored;

setting a criterion according to which the identified items of information in the records are to be monitored;

comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion; and

if, from said comparison, the criterion is met, generating a real time warning

signal.

The method may include comparing each identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, at predetermined time intervals.

In another embodiment, the method may include comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, in response to a change to said identified item of information.

The data storage medium may comprise at least one database wherein the records to be monitored are stored in fields of the database, with the method including the steps of:

identifying related fields of information in the database, that are to be monitored;

setting said criterion according to which items of information in the identified related fields of the database are to be monitored;

comparing a particular item of information in one identified field of the database with at least one item of information in a related identified field of the database, according to said criterion; and

if, from said comparison, the criterion is met, generating a real time warning signal.

The data storage medium may comprise at least two databases wherein the records to be monitored are stored in fields of the databases, with the method including the steps of:

identifying related fields of information in the databases, that are to be

monitored;

setting said criterion according to which items of information in the related identified fields of the databases are to be monitored;

comparing a particular item of information in one identified field of the database with at least one item of information in a related identified field of the other database, according to said criterion; and

if, from said comparison, the criterion is met, generating a real time warning signal.

According to a second aspect of the invention there is provided a computer program product for monitoring the records of a business enterprise wherein the records are stored in an electronic data storage medium, the computer program product including program instructions for identifying particular items of information in the records stored in the data storage medium that are to be monitored and for setting a criterion according to which preselected items of information in the identified items of information are to be monitored, the computer program product including program instructions for comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium according to said criterion and for generating a real time warning signal if, from said comparison, the criterion is met.

The computer program product may include program instructions for comparing each identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, at predetermined time intervals.

In another embodiment, the computer program product may include program

instructions for comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, in response to a change to the identified item of information.

The data storage medium may comprise at least one database wherein the records to be monitored are stored in fields of the database, with the computer program product including program instructions for identifying related fields of information in the database, that are to be monitored and for setting said criterion according to which the items of information in the identified fields are to be monitored, the computer program product including program instructions for comparing a particular item of information in one identified filed of the database with at least one item of information in a related identified field of the database, according to said criterion and for generating a real time warning signal if, from said comparison, the criterion is met.

The data storage medium may comprise at least two databases wherein the records to be monitored are stored in fields of the databases, with the computer program product including program instructions for identifying related fields of information in the databases, that are to be monitored and for setting said criterion according to which items of the information in the identified fields of the databases are to be monitored, the computer program product including program instructions for comparing a particular item of information in an identified field of one database with at least one item of information in a related identified field of the other database according to said criterion and for generating a real time warning signal if, from said comparison, the criterion is met.

According to a third aspect of the invention there is provided a monitoring system for monitoring the records of a business enterprise wherein the records are stored in an electronic data storage medium, the monitoring system comprising:

processing means having software executable thereon, the software being configured to identify particular items of information in the records stored in the data storage medium that are to be monitored and to set a criterion according to which the identified items of information in the records are to be monitored, the software being configured to compare a particular identified item of information with at least one item of information in a related record stored in the data storage medium according to said criterion and to generate a warning signal instruction if the criterion is met; and

signal generating means that is linked to the processing means and that is operable to generate a real time warning signal in response to the software of the processing means generating said warning signal instruction.

The software executable on the processing means may be configured to compare each identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, at predetermined time intervals.

In another embodiment, the software executable on the processing means may be configured to compare a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, in response to a change to said identified item of information.

The data storage medium may comprise at least one database wherein the

records to be monitored are stored in fields of the database, with the processing means having software executable thereon which is configured to identify related fields of information in the database, that are to be monitored and to set said criterion according to which the items in the related identified fields of the database are to be monitored, the software being configured to compare a particular item of information in one field of the database with at least one item of information in a related identified field of the database according to said criterion.

The data storage medium may comprise at least two databases wherein the records to be monitored are stored in fields of the databases, with the processing means having software executable thereon which is configured to identify related fields of information in the databases, that are to be monitored and to set said criterion according to which items of information in the related identified fields of the databases are to be monitored, the software being configured to compare a particular item of information in an identified field of one database with at least one item of information in a related identified field of the other database according to said criterion.

BRIEF DESCRIPTION OF THE DRAWINGS

Further features of a method of monitoring the records of a business enterprise are described hereinafter by way of non-limiting examples of the invention, with reference to the accompanying drawings. In the drawings:

Figure 1 shows a schematic block diagram of a supplier database and an employee database, illustrating the manner which items of information in the fields of the databases are monitored in accordance with the invention;

Figure 2 shows a schematic block diagram of a stock database and a purchase database, illustrating the manner in which items of information in the database can be monitored; and

Figure 3 shows a schematic block diagram of a debtors database of a business enterprise, illustrating the manner in which items of information are monitored.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Example 1

In this example (see Figure 1), the business enterprise has a supplier database and a separate employee database. The supplier database has items of information relating to suppliers of the business enterprise, stored in fields in the database. Similarly, the employee database has items of information relating to the employees of the business enterprise, stored in fields in the employee database.

The items of information stored in the fields of the supplier database, are: a client number for each supplier, the physical address of each supplier, the telephone number of each supplier, the first name of each supplier and the surname of each supplier.

The employee database has stored therein: the name of each employee, the physical address of each employee and the telephone number of each employee.

In this example, items of information stored in the supplier and employee databases are monitored in accordance with the method of monitoring the records of a business enterprise, of the first aspect of the invention. As such,

items of information in related fields in the supplier and employee databases are identified. In this example, items of information in the fields containing the physical addresses, the names and telephone numbers of employees/suppliers of the business enterprise, are identified. A criterion is then set according to which preselected items of information in the related fields of the databases, are to be monitored. In this case, the criterion is one of identicalness between the items of information in the related fields of the supplier and employee databases.

In response to a change in information in any of the databases, for example, when the details of a new employee or supplier are entered into the relevant database or when an item of information in one of the databases is replaced with a new item of information, the new item of information is compared with items of information in the corresponding field of the other database, according to the abovementioned criterion. If the criterion is met, i.e. if, from a comparison of the new item of information with items of information in the corresponding field of the other database, the new item of information matches an item of information in the corresponding field of the other database, then a real time warning signal will be generated.

In the example, it can be seen that the physical address of supplier Steven Green is the same as the physical address of employee Michael Weis. Thus, assuming that the physical address of Michael Weis was already stored in the employee database, then as soon as the physical address of supplier Steven Green is entered into the supplier database or if his address is changed to 28 Flemming Road, Parktown, then a comparison will immediately be made between the new entry and the items of information stored in the address field of the employee database. If the comparison indicates an identical address in the employee database, a warning signal is generated.

From the example given, it can be seen that the telephone number of supplier Tom Brown is identical to the telephone number of employee Karl Darwin. Similarly as for the example of the identical address referred to above, a real time warning signal will be generated as soon as the identical telephone numbers are detected. It will be appreciated that the criterion may vary from situation to situation. In this example the criterion is one of identicalness between items of information stored in employee and supplier databases which serves to indicate possible collusion between a supplier and an employee or a possible conflict of interests. This can then be further investigated by designated persons in the business enterprise. Hence, a real time warning signal is generated which will allow any situation that may be damaging to the business enterprise, to be immediately investigated.

The invention extends to a monitoring system in accordance with the second aspect of the invention, for monitoring the supplier and employee databases of the business enterprise. The monitoring system includes processing means in the form of a processor having software executable thereon, the software being configured to identify the related fields in the databases and, in response to a change in an item of information in one of the databases, to compare the new item of information with items of information stored in the corresponding field in the other database according to the preset criterion. The monitoring system includes a signal generator that is linked to the processor and that is operable to generate the warning signal if the criterion is met. More particularly, the software includes program instructions for generating a warning signal instruction if the criterion is met after said comparison. The signal generator is thus operable to generate the aforesaid real time warning signal in response to the software generating the warning signal instruction.

The invention extends to a computer program product which includes program

instructions for identifying the related fields in the supplier and employee databases that are to be monitored and in response to a change in an item of information in one of the databases, comparing the new item of information with items of information stored in the corresponding field in the other database according to the preset criterion. The computer program product further includes program instructions for generating a warning signal instruction if the criterion is met after said comparison.

In another embodiment, the method of monitoring the records of the business enterprise, includes comparing the items of information in common fields of the supplier and employee databases at predetermined time intervals according to the criterion. If, after comparing the items of information in the common fields, there is a match, a real time warning signal will be generated. By selecting suitable time intervals, an acceptable level of monitoring may be achieved. In this embodiment, the monitoring system is equivalent to the monitoring system described hereinabove, with a difference being that the processor has software executable thereon which is configured to compare the items of information in the supplier and employee databases at predetermined time intervals rather than in response to a change in an item of information in one of the databases. Similarly, the computer program product is equivalent to the computer program product described above, with a difference being that the computer program product has program instructions for comparing the items of information in the databases at predetermined intervals.

The processor includes a memory having a prerecorded warning message stored therein, together with an e-mail address, telephone number or the like, of a predetermined recipient, with the signal generator being operable to generate a warning signal in the form of a warning message that is sent to the recipient, for example, as an e-mail message, a Short Message Service (SMS) text message to

a cellular telephone, or a text message to a pager device, or the like.

Example 2

In this example (see Figure 2), a method of monitoring the records of a business enterprise in accordance with the first aspect of the invention, involves the monitoring of a stock database of the business enterprise, containing particulars of items held in stock by the business enterprise and a purchase database which contains particulars of items purchased by the business enterprise. In the databases, each stock item and each purchased item is identified by a stock code. Thus, related fields in the stock and purchase databases are identified by the same stock codes.

Each field of the stock database contains items of information consisting of, *inter alia*, the stock code for the particular stock item, a requisition number for the stock item, a unit price for the stock item, a purchase order number for the stock item, the quantity of the stock item, the division of the business enterprise for which the stock item is intended and the name of the supplier of the stock item.

Each field of the purchase database contains items of information consisting of, *inter alia*, the relevant stock code for the particular item purchased, a requisition number for the item purchased, a unit price for the item purchased, the quantity of the item purchased, a purchase order number for the item purchased, the division of the business enterprise for which the item purchased is intended and the name of the supplier of the purchased item.

In this example, the method includes identifying the related fields of information from the databases that are to be monitored. Each of the fields identified by a particular stock code is to be monitored according to a criterion of difference between the items of information. Thus, in this example three different items of

information were detected upon a comparison of the items of information stored in the databases. Firstly, for stock code 112, the requisition number in the stock database for the stock items is 49, whereas the requisition number for the same stock item in the purchase database is 50. Secondly, the supplier of the item referenced by stock code 113 in the stock database is different from the supplier of the same stock item, in the purchase database. Thirdly, the purchase order number of the stock item 114 stored in the stock database is different from the purchase order number of the same stock item stored in the purchase database.

As for example 1, the method includes comparing items of information in corresponding fields of the databases in response to a change in the information in one of the databases. Thus, as soon as a new item of information is entered into one of the databases or an existing item of information is replaced, a comparison is made between the new item and items of information in the corresponding field of the other database. If from the comparison, the criterion is met, i.e. if there is a difference between the items of information, then a real time warning signal will be generated.

The invention extends to a computer program product and to a monitoring system for monitoring the stock and purchase databases in accordance with the method described above.

It will be appreciated that the exact items of information to be monitored in different databases containing the information, and the method of monitoring the information, may vary greatly while still incorporating the features of the invention as defined and described hereinabove. As such, the Applicant envisages that the monitoring system will be adapted to suit the specific requirements of a business enterprise and may include the monitoring of items of information in one or more different databases according to different criteria.

Example 3

In this example (see Figure 3), the debtors database of the business enterprise is monitored for irregular transactions. The debtors database includes a number of fields having items of information stored therein. The fields include, *inter alia*, each debtor's name, a unique number identifying the debtor, the debtor's address, the debtor's telephone number, the credit limit extended to the debtor by the business enterprise, the current amount owed by the debtor to the business enterprise, the due date set by the business enterprise for payment by the debtor of the amount owing.

The debtor's database is monitored according to two criteria. Firstly, the amount owing by each debtor is monitored in relation to the credit limit for the particular debtor. Secondly, the due date for payment by the debtor is monitored.

In accordance with the third aspect of the invention, there is provided a monitoring system which includes a processor and a signal generator that is linked to the processor. The processor has software executable thereon that is configured to identify the fields of information from the database that are to be monitored. In this example, the fields to be monitored, are those containing the credit limits of the debtors, the amounts owing by the debtors, the due dates for payment and the current date. The processor includes a timer and a different current date will thus be reflected in the database with each passing day. The monitoring system is operable to carry out the method of the first aspect of the invention.

In response to a change in the amount owed by a particular debtor, the processor is operable to compare the new amount with the credit limit according to a preset criterion wherein the amount owing by the debtor is greater than the credit limit. The software is configured so that if based upon the aforesaid comparison, this

criteria is met, i.e. the amount owing by the debtor is greater than the credit limit, then a warning signal instruction is generated. The signal generator is operable to generate a real time warning signal in response to the warning signal instruction being generated, which is transmitted to a designated recipient. Similarly, in response to a change in the current date, the software of the processor is configured to compare the new date with the due date for payment by the debtor according to a criterion wherein the due date is earlier than the current date. As such, if based upon a comparison between the current date and the due date, the due date of payment is earlier than the current date, then the signal generator will generate a real time warning signal which is then transmitted to the designated recipient. As such, the due dates for payment by debtors are monitored on a daily basis.

In an alternative embodiment, the software is configured to make the aforesaid comparisons at predetermined time intervals rather than in response to a particular change in an item of information .

In this example, the computer program product in accordance with the second aspect of the invention, includes program instructions for monitoring fields in the debtor's database according to the present criteria and for generating a real-time warning signal if the criteria are met.

CLAIMS:

1. A method of monitoring the records of a business enterprise wherein the records are stored in an electronic data storage medium, the method including the steps of:

identifying items of information from particular records stored in the data storage medium that are to be monitored;

setting a criterion according to which the identified items of information in the records are to be monitored;

comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion; and

if, from said comparison, the criterion is met, generating a real time warning signal.

2. A method as claimed in Claim 1, which includes comparing each identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, at predetermined time intervals.

3. A method as claimed in Claim 1, which includes comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, in response to a change to said identified item of information.

4. A method as claimed in any one of the preceding claims, wherein the data storage medium comprises at least one database wherein the records to be monitored are stored in fields of the database, the method

including the steps of:

identifying related fields of information in the database, that are to be monitored;

setting said criterion according to which items of information in the related identified fields of the database are to be monitored;

comparing a particular item of information in one identified field of the database with at least one item of information in a related identified field of the database, according to said criterion; and

if, from said comparison, the criterion is met, generating a real time warning signal.

5. A method as claimed in any one of the preceding claims, wherein the data storage medium comprises at least two databases wherein the records to be monitored are stored in fields of the databases, the method including the steps of:

identifying related fields of information in the databases, that are to be monitored;

setting said criterion according to which items of information in the related identical fields of the databases are to be monitored;

comparing a particular item of information in one identified field of the database with at least one item of information in a related identified field of the other database, according to said criterion; and

if, from said comparison, the criterion is met, generating a real time warning signal.

6. A computer program product for monitoring the records of a business enterprise wherein the records are stored in an electronic data storage medium, the computer program product including program instructions for identifying particular items of information in the records stored in the

data storage medium that are to be monitored and for setting a criterion according to which preselected items of information in the identified items of information are to be monitored, the computer program product including program instructions for comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium according to said criterion and for generating a real time warning signal if, from said comparison, the criterion is met.

7. A computer program product as claimed in Claim 6, which includes program instructions for comparing each identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, at predetermined time intervals.

8. A computer program product as claimed in Claim 6, which includes program instructions for comparing a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, in response to a change to the identified item of information.

9. A computer program product as claimed in any one of Claims 6 to 8, wherein the data storage medium comprises at least one database wherein the records to be monitored are stored in fields of the database, the computer program product including program instructions for identifying related fields of information in the database, that are to be monitored and for setting said criterion according to which the items of information in the identified fields are to be monitored, the computer program product including program instructions for comparing a particular

item of information in one identified field of the database with at least one item of information in a related identified field of the database, according to said criterion and for generating a real time warning signal if, from said comparison, the criterion is met.

10. A computer program product as claimed in any one of Claims 6 to 9, wherein the data storage medium comprises at least two databases wherein the records to be monitored are stored in fields of the databases, the computer program product including program instructions for identifying related fields of information in the databases, that are to be monitored and for setting said criterion according to which the items in the related identified fields of the databases are to be monitored, the computer program product including program instructions for comparing a particular item of information in an identified field of one database with at least one item of information in a related identified field of the other database according to said criterion and for generating a real time warning signal if, from said comparison, the criterion is met.

11. A monitoring system for monitoring the records of a business enterprise wherein the records are stored in an electronic data storage medium, the monitoring system comprising:

processing means having software executable thereon, the software being configured to identify particular items of information in the records stored in the data storage medium that are to be monitored and to set a criterion according to which the identified items of information in the records are to be monitored, the software being configured to compare a particular identified item of information with at least one item of information in a related record stored in the data storage medium according to said criterion and to generate a warning signal instruction

if the criterion is met; and

signal generating means that is linked to the processing means and that is operable to generate a real time warning signal in response to the software of the processing means generating said warning signal instruction.

12. A monitoring system as claimed in Claim 11, wherein the software executable on the processing means is configured to compare each identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, at predetermined time intervals.

13. A monitoring system as claimed in Claim 11, wherein the software executable on the processing means is configured to compare a particular identified item of information with at least one item of information in a related record stored in the data storage medium, according to said criterion, in response to a change to said identified item of information.

14. A monitoring system as claimed in anyone of Claims 11 to 13, wherein the data storage medium comprises at least one database wherein the records to be monitored are stored in fields of the database, the processing means having software executable thereon which is configured to identify related field of information in the database, that are to be monitored and to set said criterion according to which the items in the related fields of the database are to be monitored, the software being configured to compare a particular item of information in one field of the database with at least one item of information in a related identified field of the database according to said criterion.

15. A monitoring system as claimed in any one of Claims 8 to 14, wherein the data storage medium comprises at least two databases wherein the records to be monitored are stored in fields of the databases, the processing means having software executable thereon which is configured to identify related fields of information in the databases, that are to be monitored and to set said criterion according to which items of information in the related identified fields of the databases are to be monitored, the software being configured to compare a particular item of information in an identified field of one database with at least one item of information in a related identified field of the other database according to said criterion.

16. A new method of monitoring the records of a business enterprise, substantially as described in the specification.

17. A method of monitoring the records of a business enterprise, substantially as described in the specification with reference to and as illustrated in the accompanying diagrammatic drawings.

18. A new computer program product substantially as described in the specification.

19. A computer program product substantially as described in the specification with reference to and as illustrated in the accompanying diagrammatic drawings.

20. A new monitoring system substantially as described in the specification.

21. A monitoring system substantially as described in the specification with reference to and as illustrated in the accompanying diagrammatic drawings.