SYSTEM AND PROCESS TO OPTIMISE EVENT TIME AND SUBJECT SEARCHING AND MATCHING

Field of the Invention

[0001] The present invention relates to event organizing. In particular, the invention relates to a token-based system and process for searching and matching events based on a given schedule and subject of interest.

Background

[0002] Along with the technology boom, info communication related products are getting increasingly popular in the form of web-based applications. Many event and journal providers make used of these applications for broadcasting upcoming events for public subscription. Examples of such event and journal providers include Asiaseminar.com, Regonline.com, Eventpro, EBMS, ConfTool, RegisterConference and many more. Each has its own proprietary system for managing its products and services.

[0003] These systems are organizer/provider centric. The events such as course, conference, seminar, and etc. offered by these providers are lined up to allow users to search and subscribe. In any specific searches, users are required to go forth and back over pages (web pages) of information provided to match an event of interest based on their personal time schedules which are generally kept in a personal electronic calendar.

[0004] The common event matching are mostly based on manual iterative checking of the published events, either on web-based or printed copy of brochures, against a planned schedule. Such process is tedious and time consuming.

Summary

[0005] In accordance with one aspect, the present invention provides a method of searching and matching an existing data from a user such as a personal schedule

with a provider database such as event timetables, the method comprises acquiring the existing data from the user; inputting optional criteria by the user; generating a token based on the existing data and the optional criteria; processing the token to extract the existing data and the optional criteria; searching and matching the provider database based on the extracted information; and providing a matched result to the user.

[0006] In accordance with one embodiment, the step of generating the token may comprise encoding and compressing the token; and the step of processing the token may comprise decompressing and encoding the token to extract the existing data and the optional criteria.

[0007] In accordance with yet another embodiment, the token is an alphanumeric code. The method may further comprise inputting the alphanumeric code for searching and matching the provider database.

[0008] In accordance with yet another embodiment, the method may further comprise sending the token via a communication link for the processing.

[0009] In yet another embodiment, the optional criteria may include a specific time, date and subject of interest. It is possible that one byte of the token represents the subject of interest. Another byte of the token may be used for a number of weeks with reference to a current week that the token is generated. In a further embodiment, the time schedules of the existing data within a day is represented in one byte of the token, wherein each bit of the one byte of the token represents an availability of the user at a pre-defined period.

[0010] In yet another embodiment, the existing data may include an electronic calendar.

[0011] In accordance with another aspect of the present invention, a system for searching and matching an existing data of a user such as a personal schedule with a provider data such as event timetables, the system comprises a user module for acquiring the existing data and optional criteria from the user, said user module

generates a token based the existing data and the optional criteria; and a provider module for extracting the existing data and option criteria from the token, said provider module searches and matches information on the provider database based on the information extracted from the token, wherein the matched result is provided to the user.

[0012] In one embodiment, the user module may be operable to encode and compress the token; and the provider module may be operable to decompress and encode the token to extract the existing data and the optional criteria.

[0013] In yet another embodiment, the token may be an alphanumeric code. The alphanumeric code can be inputted to the provider module for searching and matching the provider database.

[0014] In yet another embodiment, the user module may be operable to send the token to the provider module via a communication link for processing.

[0015] In yet another embodiment, the optional criteria may include a specific time, date and subject of interest. It is possible that one byte of the token represents the subject of interest. Another byte of the token may be used for a number of weeks with reference to a current week that the token is generated. In a further embodiment, time schedules of the existing data within a day is represented in one byte of the token, wherein each bit of the one byte of the token represents an availability of the user at a pre-defined period.

[0016] In yet another embodiment, the existing data include an electronic calendar.

Brief Description of the Drawings

[0017] This invention will be described by way of non-limiting embodiments of the present invention, with reference to the accompanying drawings, in which:

[0018] **FIG. 1** illustrates a block diagram of an event matching system in accordance with one embodiment of the present invention;

[0019] **FIG. 2** exemplifies a token bit representation in accordance with one embodiment of the present invention;

[0020] **FIG. 3** exemplifies a Day Bits data representation in accordance with one embodiment of the present invention;

[0021] **FIG. 4** exemplifies a Week Bits data representation in accordance with one embodiment of the present invention;

[0022] **FIG. 5** exemplifies a Category Bits data representation in accordance with one embodiment of the present invention;

[0023] **FIG. 6** exemplifies twelve 6-bits symbols token that can be compressed from a 9 bytes binary data;

[0024] **FIG. 7** exemplifies a table showing 6-bits symbols and the corresponding binary data in accordance with one embodiment of the present invention;

[0025] **FIG. 8A** exemplifies a token that consists of twelve 6-bits symbols in accordance with one embodiment of the present invention;

[0026] **FIG. 8B** exemplifies a one week time schedule for the user;

[0027] **FIG. 9A** is a flow chart illustrating an encoding and compression process of the token in accordance with one embodiment of the present invention; and

[0028] **FIG. 9B** is a flow chart illustrating a decoding and decompression process of the token in accordance with one embodiment of the present invention.

Detailed Description

[0029] In line with the above summary, the following descriptions of a number of specific and alternative embodiments are provided to understand the inventive features of the present invention. It shall be apparent to one skilled in the art, however that this invention may be practised without such specific details. Some of the details may not be described at length so as not to obscure the invention. For ease of reference, common reference numerals will be used throughout the figures when referring to the same or similar features common to the figures.

[0030] **FIG. 1** illustrates a block diagram of an event matching system in accordance with one embodiment of the present invention. An event timetable **102** is provided for searching over the Internet. The event timetable **102** is provided by an event provider or organizer on a website. The event timetable **102** includes course timetables, seminar schedules and etc. The event can be in any subject of interest organized and/or manage by the event provider. A user is intended to search and match for events from the event timetable **102** that match a personal schedule **104**. A provider module **108** is provided as intermediate means for matching the event timetable **102** with available time slots of the personal schedule **104**. Briefly, the personal schedule **104** is available in an electronic calendar or e-calendar. The personal schedule **104** is inputted into a user module **106**. Data in the electronic calendar is extracted by the user module **106** and a token **101** is generated. The token **101** is then processed by the provider module **108** based on the event timetable **102** to provide a matching results **110**.

[0031] Still referring to **FIG. 1**, when the user intends to search for event to be participated at the available time slots, the user module **106** is executed to acquire the personal schedule **104** to generate the token **101**. The user module **106** prompts for more criteria for event searching and matching. The criteria include subjects of interest, specific time periods and other relevant criteria. Once data acquisition and criteria input are completed, the user module **106** generates a token **101** based on the personal schedule **104** and the additional criteria, if any. The token **101** is in a form of alphanumeric codes that can be used at the event provider's website for event searching

and matching. The user inputs the token **101** to the provider module **108**. The provider module **108** extracts information from the token **101** and matches it with the event timetable **102**. The matching results **110** are then sent to the user for consideration.

[0032] The user module **106** is a software module provided at the user's side to generate tokens **101**. It is resided at the user's computing device that keeps the e-calendar. It is adapted to extract data from any e-calendar commonly available in the market. Such e-calendar can be a standalone e-calendar such as The Calendar Planer™ or any calendaring and scheduling tools included in software packages such as Microsoft Exchange or the like. The user module **106** can further extract data from a proprietary e-calendar of any handheld devices, such as mobile phones or PDAs. The user module **106** retrieves the available time slots from the personal schedule **104**, the user module **106** also prompts the user for subjects that relates to events of interest. The user module **106** encodes and compresses the retrieved information into the token **101**. The token **101** is sent to the provider module **108** automatically once it is generated. The token **101** can also be manually entered into the provider module **108** for event searching and matching. With the same token **101**, the user may use it for searching and matching events provided by other event provider having the event matching system according to the present invention. During the searching and matching, only the token **101** is used. Thus, the user's privacy can be maintained without the need to disclose any personal information to any third party.

[0033] The provider module **108** is resided at the event providers' electronic event management system and databases, usually a web-based system on a web server. It includes a match engine that captures tokens **101** provided by users, decompresses the tokens **101** and decodes the original data that includes subjects of interest, dates and times. This information are fed into its match engine to perform a search and match on the subject of interest and the date and time matching those encoded in the user's token **101**. Upon successful match, a result is generated and sent to the user. These allow a hassle-free and fast search and match on the events. The user may then proceed to subscribe and register to the events, if desires.

[0034] **FIG. 2** exemplifies a token bit representation in accordance with one embodiment of the present invention. The token bit representation is suitable for using in the event matching system of **FIG. 1**. The token bits are categorized in Category Bits, Week Bits and Day Bits. The Day Bits are further separated into each of the seven days of a week, i.e. Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. Each of categorized bits is an 8-bit data, where bits 0-55 are assigned to Day Bits, bits 56-63 are assigned Week Bits and bits 64-71 are assigned for Category Bits.

[0035] **FIG. 3** exemplifies a Day Bits data representation in accordance with one embodiment of the present invention. As shown, each bit in the Day Bits data represents a period of time within a day. Bit 7 represents a time period from 8 a.m. to 10 a.m., bit 6 represents a time period from 10 a.m. to 12 p.m., bit 5 represents a time period from 12 p.m. to 2 p.m., bit 4 represents time period from 2 p.m. to 4 p.m., bit 3 represents a time period from 4 p.m. to 6 p.m., bit 2 represents time period from 6 p.m. to 8 p.m., bit 1 represents a time period from 8 p.m. to 12 a.m. and bit 0 represents a time period from 12 a.m. to 8 a.m. Accordingly, the binary value 1 or 0 for each can be used to indicate the user availability, i.e. available or busy, in that particular period.

[0036] **FIG. 4** exemplifies a Week Bits data representation in accordance with one embodiment of the present invention. As shown, bit 0 to bit 4 (5 bits) of the Week Bits are used to represent the number of weeks derived from the current week, and bit 5 to bit 7 are reserved bits. 5 bits are enough to cover 31 weeks from the current week, and if desires, the reserved bits can also be used for covering more weeks.

[0037] It is understood that the Day Bits and Week bits representation is exemplified herewith by way of example merely, not intended to limit the scope of the present invention. It is possible that the personal schedule is represented dynamically within the available bits. In one example, the available bits can be used to identify only the user available time slot for a specific period.

[0038] **FIG. 5** exemplifies a Category Bits data representation in accordance with one embodiment of the present invention. As shown, all 8 bits are used for subject

categories, i.e. **256** types of categories can be made available. These categories can be pre-defined for user selection at the user module.

[0039] In another embodiment, the Category Bits can be entered by user in the form of any searchable wordings and the user module encodes the searchable wording in 8 bits and includes the encoded wording to the Category Bits of the token. When the provider module receives the token, the searchable wording is decoded and the search engine of the provider module searches for the relevant events that match the timeslots of the user within the events provider website. The search engine can be any search engine that process search query which are well known in the art.

[0040] **FIG. 6** exemplifies twelve 6-bit symbols token that can be compressed from a 9-byte binary data. The compression can be performed in any known data compression method.

[0041] **FIG. 7** exemplifies a table showing 6-bit symbols and the corresponding binary data in accordance with one embodiment of the present invention. The 64 binary data are represented by two symbols "#" and "*", ten numeric from 0-9, twenty six capital letters from A-Z and twenty six small letters from a-z.

[0042] **FIG. 8A** exemplifies a token in accordance with one embodiment of the present invention. The token has an alphanumeric code "Token12345ed" that can be represented in a binary code as 011111-110100-100000-101010-110011-000011-000100-000101-000110-000111-101010-101001. The twelve 6-bit symbols can be decompressed into a 9-byte binary data. Based on the format given in table shown in **FIG. 2,** the Category bit has a Decimal value of 127 and the Week bit has a Decimal value of 8 with the reserve bits ignored. The decimal value of the Category Bit corresponds to a pre-defined category for subject searching and matching. The decimal value of the Week Bit represent 8^{th} weeks from the current week. Bytes 0-6 represent the schedule time slots availability for each day of the week which are shown in **FIG. 8B.**

[0043] In the above embodiment, the 6-bit symbols cover sufficiently keys that are available in most keyboard or keypad available. It is understood that this embodiment is provided by way of example merely, and not intended to limit the scope of the present invention. In accordance with other alternatives, symbols in any other bit number may be desired.

[0044] **FIG. 9A** is a flow chart illustrating an encoding and compression process of the token in accordance with one embodiment of the present invention. The process is performed by the user module. In step **902**, the user module reads the time slots and populated the Day Bits for a particular week. In step **904**, a relative number of weeks relative to the current week is calculated based on the selected week, and the Week Bits are populated. In step **906**, based on the selected and inputted category of interest, if any, the Category Bits is populated for categorization. In step **908**, the token is compressed the 9 bytes of binary data to twelve 6-bit symbols representation (12 symbol represent a token).

[0045] **FIG. 9B** is a flow chart illustrating a decoding and decompression process of the token in accordance with one embodiment of the present invention. The process occurs generally at the event provider side. In step **912**, the token is decompressed to 9 bytes of binary data. In step **914**, the provider module decodes a selected week by calculating the relative number of weeks to the current week from the Week Bits of the token. In step **916**, the available timeslots from each day of the selected weeks of the user is being reconstructed based on the Day Bits. In step **918**, the Category Bits are decoded to provide the subject matter of interest to match the relevant events.

[0046] The present invention provides a system and process for data searching and matching over a database. The system and process is suitable for searching and matching events timetable with a personal schedule automatically. A token is generated on the user side based on an existing schedule data and optional criteria, and a search engine searches and matches relevant events with the existing schedule and optional criteria. A matched result is returned to the user without revealing the existing schedule. The system provides a user module and a provider module for the events

searching and matching operations. The user module encodes and compresses user's available dates and times and subject of interest in a form of token. The provider module in reverse decompresses and decodes the token for matching with event timetables.

[0047] The event timetables are made available by an event publishing system. The event publishing system can either be a web-based system or a non-web-based system. The present system and method is suitable for any event provider publishing their activities in electronic form, such as conference, seminar and course that open to public for checking, subscription and participation.

[0048] As the token is generated in a form of alphanumeric codes, it can be inputted manually onto any existing event management system, which supports the matching process of the present invention.

[0049] While specific embodiments have been described and illustrated, it is understood that many changes, modifications, variations and combinations thereof could be made to the present invention without departing from the scope of the invention.

Claims

1. A method of searching and matching an existing data from a user such as a personal schedule with a provider database such as event timetables, the method comprising:

acquiring the existing data from the user;

inputting optional criteria by the user;

encoding the existing data and the optional criteria to generate a token, wherein the token is a string of keyboard/keypad inputable characters;

inputting the token to the provider database;

decoding the token to extract the existing data and the optional criteria at the provider database;

searching and matching the provider database based on the extracted information; and

providing a matched result to the user,

wherein the extracted information is processed on the provider database without revealing the existing data and the optional criteria, and the token, in its same form, is reusable in the provider database or another provider database to extract existing data and the optional criteria to generate another matched result to the user.

2. The method according to claim 1, wherein the step of generating the token comprises encoding and compressing the token; and the step of processing the token comprises decompressing and encoding the token to extract the existing data and the optional criteria.

3. The method according to claim 1, wherein the token is an alphanumeric code.

4. The method according to claim 3, wherein the method further comprising inputting the alphanumeric code for searching and matching the provider database.

5. The method according to claim 1, further comprising sending the token via a communication link for the processing.

6. The method according to claim 1, wherein the optional criteria includes a specific time and date and subject of interest.

7. The method according to claim 6, wherein one byte of the token represents the subject of interest.

8. The method according to claim 1, wherein one byte of the token represents a number of weeks with reference to a current week that the token is generated.

9. The method according to claim 1, wherein time schedules of the existing data within a day is represented in one byte of the token.

10. The method according to claim 9, wherein each bit of the one byte of the token represents an availability of the user at a pre-defined period.

11. The method according to claim 1, wherein the existing data includes an electronic calendar.

12. A system for searching and matching an existing data of a user such as a personal schedule with a provider data such as event timetables, the system comprising:

a user module for acquiring the existing data and optional criteria from the user, said user module operationally encodes the existing data and the optional criteria to generate a token, wherein the token is a string of keyboard/keypad inputable characters; and

a provider module, upon receive the token inputted by the user manually, operationally decodes the token to extract the existing data and option criteria therefrom, said provider module searches and matches information on the provider database based on the information extracted from the token, wherein the matched result is provided to the user,

wherein the extracted information is processed on the provider database without revealing the existing data and the optional criteria, and the token, in its same form, is

reusable in the provider database or another provider database to extract existing data and the optional criteria to generate another matched result to the user.

13. The system according to claim 12, wherein

the user module operable to encode and compress the token; and

the provider module operable to decompress and encode the token to extract the existing data and the optional criteria.

14. The system according to claim 12, wherein the token is an alphanumeric code.

15. The system according to claim 14, wherein the user operable to input the alphanumeric code to the provider module for searching and matching the provider database.

16. The system according to claim 12, wherein the user module operable to send the token to the provider module via a communication link for processing.

17. The system according to claim 12, wherein the optional criteria includes a specific time and data and subject of interest.

18. The system according to claim 17, wherein one byte of the token represents the subject of interest.

19. The system according to claim 12, wherein one byte of the token represents a number of weeks with reference to a current week that the token is generated.

20. The system according to claim 12, wherein time schedules of the existing data within a day is represented in one byte of the token.

21. The system according to claim 20, wherein each bit of the one byte of the token represents an availability of the user at a pre-defined period.

22. The system according to claim 12, wherein the existing data include an electronic calendar.