

What is needed, therefore, is a new database and computer system that can allow the more accurate accumulation of data and that can facilitate more accurate searching by end users.

5 **Summary of Invention**

According to one aspect, the present invention provides a computer system comprising: a computer server; one or more user terminals; and a database of computer entries, each computer entry including node data defining a node representative of an entity and link data defining a plurality of links connecting the node to one or more other nodes
10 representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational score associated with the attribute. The is operable: i) to receive a search request; ii) to search the computer entries based on the received search request; iii) to rank search results based on reputational scores associated with the search results; and iv) to output
15 one or more ranked search results.

In a preferred embodiment, each reputational score has an associated time dependent weighting (different from the weighting applied to other reputational scores). The weighting applied to a reputational score can be set to reduce the reputational score
20 relative to other weighted reputational scores and may be defined by one or more exponential functions. The weighting applied may depend on the difference in time between when the search request is received and when that reputational score was last updated. The weighting may be determined by the server, the database or the user terminal.

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In one embodiment, the weighting applied to a reputational score depends on the entity represented by the node to which the link associated with the reputational score extends. For example, where entities are able to create links with other entities in the database, the weighting applied to a reputational score may depend on the number of links created
30 in a given time period by the entity represented by the node to which (or in some cases from which) the link associated with the reputational score extends. The weighting that is applied preferably reduces as the number of links created in the given time period by the entity increases.

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for the entity; a name for the entity and contact details for the entity. The node ID preferably comprises a Universal Resource Identifier, URI – as this facilitates the widespread adoption of the database.

5 The link data stored in the database for each link may include from node data identifying the node from which the link extends and to node data identifying the node to which the link extends and a tag ID that identifies tag data associated with the link. The tag data associated with a link may include a tag ID and a tag description. The tag description may relate to an attribute (an area of expertise) of the entity associated with the node to
10 which the link extends and the description is defined by the entity associated with the node from which the link extends.

In one embodiment, new node data can be stored in the database to represent new entities and new link data can be stored in the database to represent new relationships
15 between existing entities or between new entities and existing entities or between new entities. The new node data may be generated by the server or database in response to user inputs received from one or more user terminals.

The invention also provides a computer server comprising: a processor operable to:
20 receive a search request from a user terminal; search a database of computer entries based on the received search request, the database storing, for each computer entry, node data defining a node representative of an entity and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of
25 the entities associated with the link and a reputational score associated with the attribute; rank search results based on reputational scores associated with the search results; and output one or more ranked search results to the user terminal.

The invention also provides a database comprising: a plurality of computer entries, each
30 computer entry including: node data defining a node representative of an entity; and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational

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score associated with the attribute.

The invention also provides a method of searching the above database, characterised by ranking search results using reputational scores associated with links matching a search
5 query. The method preferably weights the reputational scores prior to the ranking.

The database described herein can be used in various commercial applications ranging from internet searches, social networking, office administration etc.

10 The invention also provides a computer terminal comprising: a processor operable to: receive a search request; search a database of computer entries based on the received search request, the database storing, for each computer entry, node data defining a node representative of an entity and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link
15 having associated tag data that describes an attribute of one of the entities associated with the link and a reputational score associated with the attribute; rank search results based on reputational scores associated with the search results; and output one or more ranked search results to the user.

20 The invention also provides a computer system comprising: a computer server; and a database of computer entries, each computer entry including node data defining a node representative of an entity and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the
25 link and a reputational score associated with the attribute; wherein the system is operable: i) to receive a request to add a link from a first entity to a second entity; ii) to receive a description of an attribute of the second entity; iii) to initialise a reputational score associated with the new link; iv) to define tag data for the new link based on the received description of the attribute of the second entity; and v) to store link data for the
30 new link in the database. Defining new tag data may involve generating new tag data or using existing tag data if the tag already exists.

These and other aspects of the invention will become apparent from the following

What is needed, therefore, is a new database and computer system that can allow the more accurate accumulation of data and that can facilitate more accurate searching by end users.

Summary of Invention

The invention is defined in the independent claims. Some optional features of the
5 invention are defined in the dependent claims.

One disclosed example provides a computer system comprising: a computer server; one or more user terminals; and a database of computer entries, each computer entry including node data defining a node representative of an entity and link data defining a plurality of links
10 connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational score associated with the attribute. The is operable: i) to receive a search request; ii) to search the computer entries based on the received search request; iii) to rank search results based on reputational scores associated with the search
15 results; and iv) to output one or more ranked search results.

In a preferred embodiment, each reputational score has an associated time dependent weighting (different from the weighting applied to other reputational scores). The weighting applied to a reputational score can be set to reduce the reputational score relative to other weighted reputational scores and may be defined by one or more
20 exponential functions. The weighting applied may depend on the difference in time between when the search request is received and when that reputational score was last updated. The weighting may be determined by the server, the database or the user terminal.

In one embodiment, the weighting applied to a reputational score depends on the entity
25 represented by the node to which the link associated with the reputational score extends. For example, where entities are able to create links with other entities in the database, the weighting applied to a reputational score may depend on the number of links created in a given time period by the entity represented by the node to which (or in some cases from which) the link associated with the reputational score extends. The weighting that is applied preferably
30 reduces as the number of links created in the given time period by the entity increases.

for the entity; a name for the entity and contact details for the entity. The node ID preferably comprises a Universal Resource Identifier, URI — as this facilitates the widespread adoption of the database.

5 The link data stored in the database for each link may include from node data identifying the node from which the link extends and to node data identifying the node to which the link extends and a tag ID that identifies tag data associated with the link. The tag data associated with a link may include a tag ID and a tag description. The tag description may relate to an attribute (an area of expertise) of the entity associated with the node to which the link extends and the description is defined by the entity associated with the node from which the
10 link extends.

In one embodiment, new node data can be stored in the database to represent new entities and new link data can be stored in the database to represent new relationships between existing entities or between new entities and existing entities or between new entities. The new node data may be generated by the server or database in response to user inputs
15 received from one or more user terminals.

Another disclosed example provides a computer server comprising: a processor operable to: receive a search request from a user terminal; search a database of computer entries based on the received search request, the database storing, for each computer entry, node data defining a node representative of an entity and link data defining a plurality of links
20 connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational score associated with the attribute; rank search results based on reputational scores associated with the search results; and output one or more ranked search results to the user terminal.

25 Another disclosed example provides a database comprising: a plurality of computer entries, each computer entry including: node data defining a node representative of an entity; and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational

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score associated with the attribute.

Another disclosed example provides a method of searching the above database, characterised by ranking search results using reputational scores associated with links matching a search query. The method preferably weights the reputational scores prior to the ranking.

- 5 The database described herein can be used in various commercial applications ranging from internet searches, social networking, office administration etc.

Another disclosed example provides a computer terminal comprising: a processor operable to: receive a search request; search a database of computer entries based on the received search request, the database storing, for each computer entry, node data defining a node
10 representative of an entity and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational score associated with the attribute; rank search results based on reputational scores associated with the search results; and output one or more ranked search results to the user.

15 Another disclosed example provides a computer system comprising: a computer server; and a database of computer entries, each computer entry including node data defining a node representative of an entity and link data defining a plurality of links connecting the node to one or more other nodes representative of one or more other entities, each link having associated tag data that describes an attribute of one of the entities associated with the link and a reputational
20 score associated with the attribute; wherein the system is operable: i) to receive a request to add a link from a first entity to a second entity; ii) to receive a description of an attribute of the second entity; iii) to initialise a reputational score associated with the new link; iv) to define tag data for the new link based on the received description of the attribute of the second entity; and v) to store link data for the new link in the database. Defining new tag data may involve
25 generating new tag data or using existing tag data if the tag already exists.

These and other exemplary disclosed features will become apparent from the following