

Claims

1. 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, each link connecting the node to another node representative of another entity and having associated tag data that describes an attribute of the other entity associated with the link and a reputational score associated with the attribute and the other entity;
wherein the system 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 one or more ranked search results;
wherein each reputational score has an associated time dependent weighting function and wherein the system is operable to apply different weighting functions to different reputational scores depending on the entity with which the reputational score is associated.
2. A system according to claim 1, wherein the different weighting functions are arranged to cause the different reputational scores to reduce at different rates~~each reputational score has an associated time dependent weighting.~~
3. A system according to claim 2, wherein the different weighting functions are arranged to cause the reputational scores associated with more active users to reduce at a rate that is faster than the rate at which the reputational scores associated with less active users reduce~~applied to a reputational score reduces the reputational score relative to other weighted reputational scores.~~
4. A system according to claim 3, wherein the weighting applied to a reputational score is defined by one or more exponential functions.
5. A system according to any of claims 1~~2~~ to 4, wherein the weighting applied depends on the difference in time between when the search request is received and when that reputational score was last updated.

~~6. A system according to any of claims 2 to 5, wherein the server is operable to calculate and apply the respective weighting for each reputational score associated with the search results prior to ranking the search results.~~

~~7. A system according to any of claims 2 to 5, wherein the database is operable to apply the respective weighting to the corresponding reputational score.~~

~~8. A system according to any of claims 2 to 7, wherein the weighting applied to a reputational score depends on an entity associated with the link.~~

~~69.~~ A system according to claim ~~18~~, wherein entities are able to create links with other entities in the database and wherein the weighting applied to a reputational score depends on the number of links created in a given time period by the entity represented by the node from which the link associated with the reputational score extends.

~~710.~~ A system according to claim ~~69~~, wherein the weighting that is applied reduces as the number of links created in the given time period by the entity increases.

~~11. A system according to any of claims 2 to 10, wherein a constant weighting or no weighting is applied to a reputational score for an initial period following an update of the reputational score.~~

~~812.~~ A system according to any of claims ~~12~~ to ~~711~~, wherein the weighting applied to a reputational score is such that the reputational score is substantially reduced to zero after a defined period, such as twelve months, following an update of the reputational score.

~~13. A system according to any of claims 2 to 12, wherein the weighting is applied to the reputational score by multiplying the reputational score with the weighting; or by dividing the reputational score by the weighting; or by adding the weighting to the reputational score or by subtracting the weighting from the reputational score.~~

~~14. A system according to any of claims 1 to 13, wherein entities are able to vote on the reputational scores stored within the database.~~

~~15.—A system according to claim 14, wherein an entity associated with a node from which a link associated with a reputational score extends, is prevented from voting on that reputational score.~~

~~16.—A system according to claim 14 or 15, wherein an entity associated with a node to which a link associated with a reputational score extends, is prevented from voting on that reputational score.~~

~~17.—A system according to claim 15 or 16, wherein the server, the database or a user terminal is operable to prevent said voting.~~

~~18.—A system according to any of claims 14 to 17, wherein a server is operable to receive a vote for a reputational score from a voting entity and is operable to update the reputational score based on the received vote.~~

~~19.—A system according to claim 18, wherein the server is operable to prevent an entity associated with a reputational score from voting on that reputational score.~~

~~20.—A system according to claim 19, wherein, in response to receiving a vote from a voting entity, the server is operable to check that the voting entity is not associated with the reputational score voted upon.~~

~~21.—A system according to claim 19 or 20, wherein, in response to receiving a vote from a voting entity, the server is operable to check that the voting entity is not represented by the node to which the link associated with the reputational score voted upon, extends.~~

~~22.—A system according to any of claims 19 to 21, wherein the server is operable to identify the voting entity from login data associated with the voting entity.~~

~~23.—A system according to any of claims 14 to 22, wherein entities are able to vote up or vote down a reputational score.~~

~~24.—A system according to claim 23, wherein a limit is placed on the amount by which~~

~~a given entity can vote up the reputational score.~~

~~25.—A system according to claim 24, wherein the database is operable to maintain vote data for votes that have been made on reputational scores by an entity and wherein a check is made on previous votes made by the voting entity to determine if said limit has been reached and thereby whether or not the reputational score should be updated in accordance with the vote.~~

~~26.—A system according to claim 25, wherein a server is operable to store said vote data in said database and a server is operable to check the previous votes to determine if said limit has been reached.~~

~~27.—A system according to claim 24, 25 or 26, wherein voting entities are limited in an amount that they can vote down a reputational score to the amount that the voting entity has previously voted up the reputational score.~~

~~928.~~ A system according to any of claims 14 to ~~827~~, wherein each reputational score has an associated time stamp that indicates the last time that the reputational score was updated and wherein said time stamp is updated in response to ~~the~~ voting up or ~~the~~ voting down of the reputational score.

~~29.—A system according to any of claims 1 to 28, wherein the node data stored in the database for an entity includes one or more of: a node ID for the entity; a name for the entity and contact details for the entity.~~

~~30.—A system according to claim 29, wherein the node ID comprises a Universal Resource Identifier, URI.~~

~~31.—A system according to any of claims 1 to 30, wherein the link data stored in the database for each link includes 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 the tag data associated with the link.~~

~~32.—A system according to any of claims 1 to 31, wherein the tag data associated with a link includes a tag ID and a tag description.~~

~~33.—A system according to any of claims 1 to 32, wherein the tag data includes a description of an attribute of the entity associated with the node to which the link extends and wherein the description is defined by the entity associated with the node from which the link extends.~~

~~34.—A system according to any of claims 1 to 33, wherein 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.~~

~~35.—A system according to claim 34, wherein a server is operable to generate new node data and new link data in response to user inputs received from one or more user terminals.~~

~~1036.~~ 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, each link connecting the node to another node representative of another entity and having associated tag data that describes an attribute of the other entity associated with the link and a reputational score associated with the attribute and the other entity;

rank search results based on reputational scores associated with the search results; and

output one or more ranked search results to the user terminal;

wherein each reputational score has an associated time dependent weighting function and wherein the processor is configured to apply, prior to ranking the search results, different weighting functions to different reputational scores depending on the entity with which the reputational score is associated.

~~1137.~~ A server according to claim ~~1036~~, wherein the different weighting functions are arranged to cause the different reputational scores to reduce at different rates~~processor~~

~~is operable to calculate and apply a weighting for each reputational score associated with the search results prior to ranking the search results.~~

~~1238. A server according to claim 1137, wherein the different weighting functions are arranged to cause the reputational scores associated with more active users to reduce at a rate that is faster than the rate at which the reputational scores associated with less active users reduce~~~~applied to a reputational score reduces the reputational score relative to other weighted reputational scores.~~

~~1339. A server according to claim 1238, wherein ~~the~~each weighting function~~~~applied to a reputational score~~ is defined by one or more exponential functions.

~~1440. A server according to any of claims 1037 to 1339, wherein the weighting applied depends on the difference in time between when the search request is received and when the reputational score was last updated.~~

~~41. A server according to any of claims 37 to 40, wherein the weighting applied to a reputational score depends on the entity represented by the node from which the link associated with the reputational score extends.~~

~~1542. A server according to claim 1041, wherein entities are able to create links with other entities in the database and wherein the weighting applied to a reputational score depends on the number of links created in a given time period by the entity represented by the node from which the link associated with the reputational score extends.~~

~~1643. A server according to claim 1542, wherein the weighting that is applied reduces as the number of links created in the given time period by the entity increases.~~

~~1744. A server according to any of claims 1037 to 1543, wherein the processor is operable to apply a constant weighting or no weighting to a reputational score for an initial period following an update of the reputational score.~~

~~1845. A server according to any of claims 1037 to 1744, wherein the weighting applied to a reputational score is such that the reputational score is substantially reduced to zero after a defined period following an update of the reputational score.~~

1946. A server according to any of claims 1035 to 1845, wherein the processor is operable to receive a vote for a reputational score from a voting entity and is operable to update the reputational score based on the received vote.

2047. A server according to claim 1946, wherein the processor is operable to prevent an entity associated with a node from which a link associated with a reputational score extends, from voting on that reputational score.

2148. A server according to claim 1947 or 2048, wherein the processor is operable to prevent an entity associated with a node to which a link associated with a reputational score extends, from voting on that reputational score.

2249. A server according to claim 1947 or 2048, wherein the processor is operable to identify the voting entity from login data associated with the voting entity.

2350. A server according to any of claims 1946 to 2249, wherein entities are able to vote up or vote down a reputational score.

2451. A server according to claim 2350, wherein a limit is placed on the amount by which a given entity can vote up the reputational score, wherein the database is operable to maintain vote data for votes that have been made on reputational scores by an entity and wherein the processor is operable to check previous votes made by the voting entity to determine if said limit has been reached and thereby whether or not the reputational score should be updated in accordance with the vote.

2552. A server according to claim 2350 or 2451, wherein the processor is operable to limit an amount that voting entities are able to vote down a reputational score to the amount that the voting entity has previously voted up the reputational score.

2653. A server according to any of claims 1946 to 2552, wherein each reputational score has an associated time stamp that indicates the last time that the reputational score was updated and wherein said processor is operable to update the time stamp in response to the voting up or the voting down of the reputational score.

~~27~~⁵⁴. A server according to any of claims ~~10~~³⁶ to ~~26~~⁵³, wherein the processor is operable to generate new node data and new link data in response to user inputs received from one or more user terminals.

~~28~~⁵⁵. 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, each link connecting the node to another node representative of another entity and having associated tag data that describes an attribute of the other entity associated with the link and a reputational score associated with the attribute and the other entity;

wherein each reputational score has an associated time dependent weighting function and wherein the database is arranged to apply different weighting functions to different reputational scores depending on the entity with which the reputational score is associated.

~~29~~⁵⁶. A database according to claim ~~28~~⁵⁵, wherein the database is operable: i) to receive a search request from a server; 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 one or more ranked search results to the server.

~~30~~⁵⁷. A database according to claim ~~29~~⁵⁶, wherein the different weighting functions are arranged to cause the different reputational scores to reduce at different rates~~operable to calculate and apply a weighting for each reputational score associated with the search results prior to ranking the search results.~~

~~31~~⁵⁸. A database according to claim ~~30~~⁵⁷, wherein the different weighting functions are arranged to cause the reputational scores associated with more active users to reduce at a rate that is faster than the rate at which the reputational scores associated with less active users reduce~~applied to a reputational score reduces the reputational score relative to other weighted reputational scores.~~

~~32~~⁵⁹. A database according to any of claims 28 to 31~~58~~, wherein each~~the~~ weighting function~~applied to a reputational score~~ is defined by one or more exponential functions.

~~33~~⁶⁰. A database according to any of claims ~~28~~⁵⁷ to ~~32~~⁵⁹, wherein ~~a~~^{the} weighting ~~determined by a weighting function~~^{applied} depends on the difference in time between when the search request is received and when the reputational score was last updated.

~~61. — A database according to any of claims 57 to 60, wherein the weighting applied to a reputational score depends on the entity represented by the node from which the link associated with the reputational score extends.~~

~~34~~⁶². A database according to any of claims ~~28~~⁵⁷ to ~~33~~⁶¹, wherein entities are able to create links with other entities in the database and wherein the weighting applied to a reputational score depends on the number of links created in a given time period by the entity represented by the node from which the link associated with the reputational score extends.

~~35~~⁶³. A database according to claim ~~34~~⁶², wherein the size of the weighting that is applied reduces as the number of links created in the given time period by the entity increases.

~~64. — A database according to any of claims 57 to 63, operable to apply a constant weighting or no weighting to a reputational score for an initial period following an update of the reputational score.~~

~~36~~⁶⁵. A database according to any of claims ~~28~~⁵⁷ to ~~35~~⁶⁴, wherein the weighting applied to a reputational score is such that the reputational score is substantially reduced to zero after a predefined period following the time when the reputational score was last updated.

~~66. — A database according to any of claims 55 to 65, operable to receive a vote for a reputational score from a voting entity and operable to update the reputational score based on the received vote.~~

~~67. — A database according to claim 66, operable to prevent an entity associated with a node from which a link associated with a reputational score extends, from voting on that reputational score.~~

~~68.—A database according to claim 67 or 68, operable to prevent an entity associated with a node to which a link associated with a reputational score extends, from voting on that reputational score.~~

~~69.—A database according to claim 67 or 68, operable to identify the voting entity from login data associated with the voting entity.~~

~~70.—A database according to any of claims 66 to 69, wherein entities are able to vote up or vote down a reputational score.~~

~~71.—A database according to claim 70, wherein a limit is placed on the amount by which a given entity can vote up the reputational score, wherein the database is operable to maintain vote data for votes that have been made on reputational scores by an entity and wherein the database is operable to check previous votes made by the voting entity to determine if said limit has been reached and thereby whether or not the reputational score should be updated in accordance with the vote.~~

~~72.—A database according to claim 70 or 71, operable to limit an amount that voting entities are able to vote down a reputational score to the amount that the voting entity has previously voted up the reputational score.~~

~~37~~⁷³. A database according to any of claims ~~28~~⁶⁶ to ~~36~~⁷², wherein each reputational score has an associated time stamp that indicates the last time that the reputational score was updated and wherein the database is operable to update the time stamp in response to ~~the~~ voting up or ~~the~~ voting down of the reputational score.

~~74.—A database according to any of claims 56 to 73, operable to generate new node data and new link data in response to inputs received from a server or a user terminal.~~

~~75.—A database according to any of claims 55 to 74, wherein the node data stored in the database for an entity includes one or more of: a node ID for the entity; a name for the entity and contact details for the entity.~~

~~76.—A database according to claim 75, wherein the node ID comprises a Universal~~

~~Resource Identifier, URI.~~

~~77.—A database according to any of claims 55 to 76, wherein the link data stored in the database for each link includes 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 the tag data associated with the link.~~

~~78.—A database according to any of claims 55 to 77, wherein the tag data associated with a link includes a tag ID and a tag description.~~

~~79.—A database according to any of claims 55 to 78, wherein the tag data includes a description of an attribute of the entity associated with the node to which the corresponding link extends and wherein the description is defined by the entity associated with the node from which the link extends.~~

~~80.—A database according to any of claims 55 to 79, wherein 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, between new entities or between new entities and existing entities.~~

~~81.—A database according to claim 80, operable to generate new node data and new link data in response to inputs received from one or more servers or one or more user terminals.~~

~~82.—A relationship management 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, each link connecting the node to another node representative of another entity and having associated tag data that describes a different relationship attribute of the other entity.~~

3883. A computer implemented searching method comprising:

receiving a search request from a user terminal;

searching 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, each link connecting a node to another node representative of another entity and 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 and the other entity;

ranking search results based on reputational scores associated with the search results;

outputting one or more ranked search results to the user terminal;

and applying, prior to said ranking, different weighting functions to different reputational scores depending on the entity with which the reputational score is associated~~A method of searching a database according to any of claims 55 to 81, characterised by ranking search results using reputational scores associated with links matching a search query.~~

~~39~~84. A method according to claim ~~38~~83, wherein the different weighting functions are arranged to cause the different reputational scores to reduce at different rates~~comprising weighting the reputational scores prior to said ranking.~~

40. A method according to claim 38, wherein the different weighting functions cause the reputational scores associated with more active users to reduce at a rate that is faster than the rate at which the reputational scores associated with less active users reduce.

41. A method according to claim 38, wherein each weighting function is defined by one or more exponential functions.

42. A method according to any of claims 38 to 41, wherein the weighting applied depends on the difference in time between when the search request is received and when the reputational score was last updated.

43. A method according to claim 38, wherein entities create links with other entities in the database and wherein the weighting applied to a reputational score depends on the number of links created in a given time period by the entity represented by the node from which the link associated with the reputational score extends.

44. A method according to claim 43, wherein the weighting that is applied reduces as

the number of links created in the given time period by the entity increases.

45. A method according to any of claims 38 to 44, wherein the processor applies a constant weighting or no weighting to a reputational score for an initial period following an update of the reputational score.

46. A method according to any of claims 38 to 45, wherein the weighting applied to a reputational score is causes the reputational score to reduce to substantially zero after a defined period following an update of the reputational score.

47. A method according to any of claims 38 to 46, wherein the processor receives a vote for a reputational score from a voting entity and updates the reputational score based on the received vote.

48. A method according to any of claims 38 to 47, wherein each reputational score has an associated time stamp that indicates the last time that the reputational score was updated and wherein said processor updates the time stamp in response to voting up or voting down of the reputational score.

~~49~~⁸⁵. A social networking database comprising a database according to any of claims ~~28~~⁵⁵ to ~~37~~⁸².

~~50~~⁸⁶. An internet search server comprising a server according to any of claims ~~10~~³⁶ to ~~27~~⁵⁴.

~~51~~⁸⁷. 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, each link connecting the node to another node representative of another entity and 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 and

the other entity;

rank search results based on reputational scores associated with the search results; and

output one or more ranked search results to the user;

wherein each reputational score has an associated time dependent weighting function and wherein the computer terminal is arranged to apply different weighting functions to different reputational scores depending on the entity with which the reputational score is associated.

~~88. 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, each link connecting the node to another node representative of another entity and having associated tag data that describes an attribute of the other entity associated with the 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 new link in the database.~~

~~5289.~~ A computer implementable instructions product comprising computer implementable instructions for causing a programmable computer device to become configured as the server of any of claims ~~1036~~ to ~~2754~~ or as a database or any of claims ~~2855~~ to ~~3782~~ or as the terminal of claim ~~5187~~.