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| BI 1 |
| BI 2 |
| BI 3 |
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| BI 20 |

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|---------|---|-----------|--------------|---|--|
| query | BI / read / 15 | | | | |
| title | Trusted connection paths through forums created in a given timeframe | | | | |
| pattern | <div><div><p>Enumerate all unweighted shortest paths on knows edges between person1 to person2.</p><div><div>person1: Person</div><div>id = \$person1Id</div></div><div>knows*</div><div><div>person2: Person</div><div>id = \$person2Id</div></div></div></div> <div><p>Case 1: Replies on Posts, weight += 1.0 × count(c)</p><div><div>personA: Person</div><div>hasCreator</div><div>c: Comment</div><div>knows</div><div>personB: Person</div><div>hasCreator</div><div>post: Post</div><div>replyOf</div><div>containerOf</div><div>forum: Forum</div><div>$\\$start \leq creationDate$ and $creationDate \leq \\$end$</div></div></div> <div><p>Case 2: Replies on Comments, weight += 0.5 × count(c1)</p><div><div>personA: Person</div><div>hasCreator</div><div>c1: Comment</div><div>knows</div><div>personB: Person</div><div>hasCreator</div><div>c2: Comment</div><div>replyOf</div><div>replyOf*</div><div>Post</div><div>containerOf</div><div>forum: Forum</div><div>$\\$start \leq creationDate$ and $creationDate \leq \\$end$</div></div></div> <div><p>For each knows edge in the path, calculate a weight based on interactions between the pair of Persons of the edge, calculated as a sum of cases #1 and #2 for the Persons (both ways), and the sum of these weights determine the total weight of each path.</p><div><div>p1</div><div>knows</div><div>pX</div><div>knows</div><div>pY</div><div>...</div><div>pW</div><div>knows</div><div>p2</div></div></div> | | | | |
| desc. | <p>Given two Persons, find all (unweighted) shortest paths between these two Persons, in the subgraph induced by the knows relationship.</p> <p>Then, for each path calculate a weight. The nodes in the path are Persons, and the weight of a path is the sum of weights between every pair of consecutive Person nodes in the path.</p> <p>The weight for a pair of Persons is calculated based on their interactions:</p> <ul style="list-style-type: none">• Every direct reply (by one of the Persons) to a Post (by the other Person) contributes 1.0.• Every direct reply (by one of the Persons) to a Comment (by the other Person) contributes 0.5. <p>Only consider Messages that were created in a Forum that was created within the timeframe (interval) [startDate, endDate]. Note that for Comments, the containing Forum is that of the Post that the comment (transitively) replies to. Also note that interactions are counted both ways.</p> <p>Return all paths with the Person IDs ordered by their weights descending.</p> | | | | |
| params | 1 | person1Id | ID | | |
| | 2 | person2Id | ID | | |
| | 3 | startDate | Date | | |
| | 4 | endDate | Date | | |
| result | 1 | person.id | [ID] | C | Ordered sequence of the Person IDs in the path |
| | 2 | weight | 64-bit Float | C | |
| sort | 1 | weight | ↓ | The order of paths with the same weight is unspecified | |
| | 2 | personIds | ↑ | The IDs in the paths are used for lexicographical sorting | |
| CPs | 1.2, 2.1, 2.2, 2.4, 3.3, 5.1, 5.3, 7.2, 7.3, 7.5, 7.7, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6 | | | | |