

## BI / read / 6

|       |           |   |                |                |   |
|-------|-----------|---|----------------|----------------|---|
| BI 1  | query     | BI / read / 6   |                |                |   |
| BI 2  | title     | Most authoritative users on a given topic   |                |                |   |
| BI 3  | pattern   | <pre> graph TD     Tag[Tag] -- hasTag --&gt; message1[message1: Message]     person1[person: Person] -- hasCreator --&gt; message1     message1 -- "«opt» likes" --&gt; p2[p2: Person]     subgraph Compute_p2_popularityScore         p2 -- hasCreator --&gt; message2[message2: Message]         message2 -- "«opt» likes" --&gt; p3[p3: Person]         p2 -- "p2.popularityScore = count(p3)" --&gt; p2     end     p2 -- "person.authorityScore = sum(p2.popularityScore)" --&gt; person1           </pre>                   |                |                |   |
| BI 4  |           |   |                |                |   |
| BI 5  |           |   |                |                |   |
| BI 6  |           |   |                |                |   |
| BI 7  |           |   |                |                |   |
| BI 8  | desc.     | <p>Given a Tag (tag), find all Persons (person) that ever created a Message with the Tag. For each of these Persons (person) compute their “authority score” as follows:</p> <ul style="list-style-type: none"> <li>The “authority score” is the sum of “popularity scores” of the Persons (p2) that liked any of that Person’s Messages with the given Tag (same criterion as for message1).</li> <li>A Person’s (p2) “popularity score” is defined as the total number of likes on all of their Messages (message2).</li> </ul> |                |                |   |
| BI 9  |           |   |                |                |   |
| BI 10 |           |   |                |                |   |
| BI 11 |           |   |                |                |   |
| BI 12 |           |   |                |                |   |
| BI 13 | params    | 1   | tag            | Long String    | Tags with a similar amount of Messages are selected |
| BI 14 |           |   |                |                |   |
| BI 15 | result    | 1   | person.id      | ID             | R   |
| BI 16 |           | 2   | authorityScore | 32-bit Integer | A   |
| BI 17 | sort      | 1   | authorityScore | ↓              |   |
| BI 18 |           | 2   | person1.id     | ↑              |   |
| BI 19 | limit     | 100   |                |                |   |
| BI 20 | CPs       | 1.2, 2.3, 3.3, 6.1, 8.2   |                |                |   |
|       | relevance | Computing the authority scores might involve computing the popularity score for the same Person multiple times. Implementations are advised to avoid such redundant computations.   |                |                |   |