

BI / read / 16

BI 1	query	BI / read / 16			
BI 2	title	Fake news detection			
BI 3	pattern	<p>For \$tagX/\$dateX in [tagA/dateA, tagB/dateB], compute scoreX = count(messageX)</p> <p>1. Create an induced subgraph of Persons who created a Message with Tag \$tagX on \$dateX</p> <pre> graph LR tag[Tag name = \$tagX] -- hasTag --> message[Message day(creationDate) = \$dateX] message -- hasCreator --> person[Person] </pre> <p>2. In the subgraph, count the Messages (using the same conditions) from People with $\leq \\$maxKnowsLimit$ friends</p> <pre> graph TD subgraph Subgraph tag[Tag name = \$tagX] -- hasTag --> messageX[Message day(creationDate) = \$dateX] messageX -- hasCreator --> person[Person] person -- "count <= \$maxKnowsLimit «opt» knows" --> Person[Person] messageX -- "count(messageX)" --> messageX end </pre>			
BI 4					
BI 5	description	<p>Given two Tag/date pairs (\$tagA/\$dateA and \$tagB/\$dateB), for each pair \$tagX/\$dateX:</p> <ul style="list-style-type: none"> • Create an induced subgraph between Persons where for each pair of Persons person1/person2, both have created a Message on the day of \$dateX with Tag \$tagX. • In the induced subgraph, only keep pairs of Persons who have at most <code>maxKnowsLimit</code> friends (in the induced subgraph). • For these Persons, count the number of Messages created on \$dateX with Tag \$tagX. <p>Return Persons who had at least one Messages for both \$tagA/\$dateA and \$tagB/\$dateB ranked by their total number of Messages (descending).</p>			
BI 6					
BI 7	params	1	\$tagA	Long String	(a) \$tagA/\$dateA, \$tagB/\$dateB are both selected to be a flashmob Tag/date combination (b) \$tagA/\$dateA, \$tagB/\$dateB are both selected to be a non-flashmob Tag/date combination
BI 8		2	\$dateA	Date	
BI 9		3	\$tagB	Long String	
BI 10		4	\$dateB	Date	
BI 11		5	\$maxKnowsLimit	32-bit Integer	Selected between 3 and 6
BI 12	result	1	person.id	ID	R
BI 13		2	messageCountA	32-bit Integer	A
BI 14		3	messageCountB	32-bit Integer	A
BI 15	sort	1	messageCountA + messageCountB	\downarrow	
BI 16		2	person.id	\uparrow	
BI 17	limit	20			
BI 18	CPs	5.3, 8.4, 8.5			
BI 19	relevance				
BI 20		<p>There are two major ways to compute this query: (1) create the induced subgraph as suggested by the specification (either as a view or in materialized form), or (2) skip creating the induced subgraph and perform on-the-fly check for the number of friends (who also posted at least one Message with the given Tag on the given date). The latter approach is easier to express in systems which do not provide graph views but might result in redundant computations (the query engine might repeatedly check whether a Person has at least one Message that satisfies the conditions).</p>			