

Interactive / complex / 1

IC 1

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query	Interactive / complex / 1			
title	Transitive friends with certain name			
pattern	<pre> graph LR P1[person: Person id = \$personId] -- knows*1..3 --> P2[otherPerson: Person firstName = \$firstName id lastName birthday creationDate gender browserUsed locationIP email speaks] P2 -- isLocatedIn --> L[locationCity: City name] P2 -- «opt» workAt --> C[company: Company name] P2 -- «opt» studyAt --> U[university: University name] C -- isLocatedIn --> CC[companyCountry: Country name] U -- isLocatedIn --> UC[universityCity: City name] </pre>			
desc.	Given a start Person, find Persons with a given first name (firstName) that the start Person is connected to (excluding start Person) by at most 3 steps via the knows relationships. Return Persons, including the distance (1..3), summaries of the Persons workplaces and places of study.			
params	1	personId	ID	
	2	firstName	String	
result	1	otherPerson.id	ID	R
	2	otherPerson.lastName	String	R
	3	distanceFromPerson	32-bit Integer	C
	4	otherPerson.birthday	Date	R
	5	otherPerson.creationDate	DateTime	R
	6	otherPerson.gender	String	R
	7	otherPerson.browserUsed	String	R
	8	otherPerson.locationIP	String	R
	9	otherPerson.email	{Long String}	R
	10	otherPerson.speaks	{String}	R
	11	locationCity.name	String	R
	12	universities	{<String, 32-bit Integer, String>}	A {<university.name, studyAt.classYear, universityCity.name>}
	13	companies	{<String, 32-bit Integer, String>}	A {<company.name, workAt.workFrom, companyCountry.name>}
sort	1	distanceFromPerson	↑	
	2	otherPerson.lastName	↑	
	3	otherPerson.id	↑	
limit	20			
CPs	2.1, 5.3, 8.2			
relevance	This query is a representative of a simple navigational query. It looks for paths of length 1..3 through the knows relation, starting from a given Person and ending at a Person with a given first name. It is interesting for several aspects. (1) It requires for a complex aggregation for returning the concatenation of universities, companies, languages and email information of the Person. (2) It tests the ability of the optimizer to move the evaluation of sub-queries functionally dependant on the Person, after the evaluation of the top-k. (3) Its performance is highly sensitive to properly estimating the cardinalities in each transitive path, and paying attention not to explore already visited Persons.			