Interactive / complex / 1

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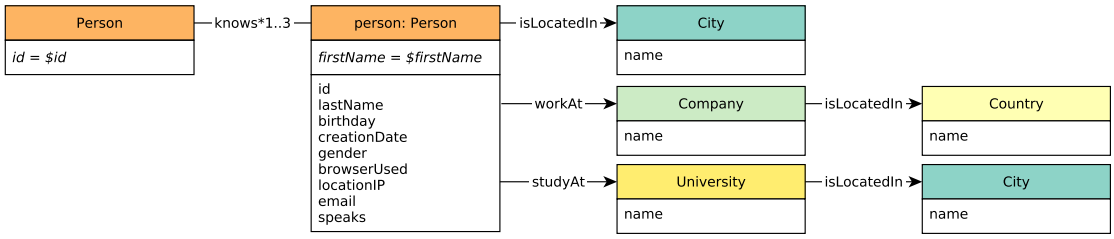
query	Interactive / complex / 1
title	Friends with certain name
pattern	
desc.	Given a start Person, find Persons with a given first name (`firstName`) that the start Person is connected to (excluding start Person) by at most 3 steps via the knows relationships. Return Persons, including the distance (1..3), summaries of the Persons workplaces and places of study.

params

1	`Person.id`	ID	`personId`
2	`Person.firstName`	String	`firstName`

result

1	`Person.id`	ID	R	`friendId`
2	`Person.lastName`	String	R	`friendLastName`
3	`distanceFromPerson`	32-bit Integer	C	`distanceFromPerson`
4	`Person.birthday`	Date	R	`friendBirthday`
5	`Person.creationDate`	DateTime	R	`friendCreationDate`
6	`Person.gender`	String	R	`friendGender`
7	`Person.browserUsed`	String	R	`friendBrowserUsed`
8	`Person.locationIP`	String	R	`friendLocationIp`
9	`{Person.email}`	{String}	R	`friendEmails`
10	`{Person.speaks}`	{String}	R	`friendLanguages`
11	`Person-isLocatedIn->City.name`	String	R	`friendCityName`
12	`{Person-studyAt->University.name, Person-studyAt->.classYear, Person-studyAt->University-isLocatedIn->City.name}`	{<String, 32-bit Integer, String>}	A	`friendUniversities`
13	`{Person-workAt->Company.name, Person-workAt->.workFrom, Person-workAt->Company-isLocatedIn->Country.name}`	{<String, 32-bit Integer, String>}	A	`friendCompanies`

sort

1	`distanceFromPerson`	↑
2	`Person.lastName`	↑
3	`Person.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.