

Interactive / complex / 1

IC 1

IC 2

IC 3

IC 4

IC 5

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IC 13

IC 14

query	Interactive / complex / 1																																																																					
title	Friends with certain name																																																																					
pattern	<pre>graph LR Person1[Person] -- knows*1..3 --> Person2[person: Person] Person2 -- isLocatedIn --> City1[City] Person2 -- workAt --> Company[Company] Person2 -- studyAt --> University[University] City1 -- isLocatedIn --> Country[Country] University -- isLocatedIn --> City2[City]</pre> <p>The diagram illustrates the query pattern. It starts with a Person entity (orange box) with a variable <code>id = \$id</code>. This person is connected via a <code>knows*1..3</code> relationship to another person: Person entity (orange box) with a variable <code>firstName = \$firstName</code>. This second person is then connected to three other entities: City (teal box) via <code>isLocatedIn</code>, Company (green box) via <code>workAt</code>, and University (yellow box) via <code>studyAt</code>. The City entity is further connected to a Country (yellow box) via <code>isLocatedIn</code>, and the University entity is connected to another City (teal box) via <code>isLocatedIn</code>. All entities have a <code>name</code> attribute.</p>																																																																					
desc.	Given a start Person, find Persons with a given first name (<code>firstName</code>) that the start Person is connected to (excluding start Person) by at most 3 steps via the <code>knows</code> relationships. Return Persons, including the distance (1..3), summaries of the Persons workplaces and places of study.																																																																					
params	<table><tr><td>1</td><td>Person.id</td><td>ID</td><td>personId</td></tr><tr><td>2</td><td>Person.firstName</td><td>String</td><td>firstName</td></tr></table>					1	Person.id	ID	personId	2	Person.firstName	String	firstName																																																									
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CPs	2.1, 5.3, 8.2																																																																					
relevance	<p>This query is a representative of a simple navigational query. It looks for paths of length 1..3 through the <code>knows</code> 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.</p>																																																																					