

Interactive / complex / 7

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|-------|--------------------|---|----------------|--|---|--|---|--------------------|----|---|---|-----------|------------------|--------|---|--|---|-----------------|--------|---|--|---|--------------------|----------|---|--|---|------------|----|---|--|---|---|------|---|--|---|----------------|----------------|---|---|---|-------|---------|---|--|
| IC 1 | query | Interactive / complex / 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 2 | title | Recent likers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 3 | pattern | <pre>graph LR person["person: Person id = \$personId"] friend["friend: Person id firstName lastName"] message["message: Message id content / imageFile"] person -- "«opt» knows" --> person person -- "hasCreator" --> message friend -- "likes creationDate" --> message</pre> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 8 | desc. | Given a start Person, find the most recent likes on any of start Person’s Messages. Find Persons that liked (likes edge) any of start Person’s Messages, the Messages they liked most recently, the creation date of that like, and the latency in minutes (minutesLatency) between creation of Messages and like. Additionally, for each Person found return a flag indicating (isNew) whether the liker is a friend of start Person. In case that a Person liked multiple Messages at the same time, return the Message with lowest identifier. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 9 | params | <table><tr><td>1</td><td>personId</td><td>ID</td><td></td></tr></table> | | | | | 1 | personId | ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | personId | ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 10 | result | <table><tr><td>1</td><td>friend.id</td><td>ID</td><td>R</td><td></td></tr><tr><td>2</td><td>friend.firstName</td><td>String</td><td>R</td><td></td></tr><tr><td>3</td><td>friend.lastName</td><td>String</td><td>R</td><td></td></tr><tr><td>4</td><td>likes.creationDate</td><td>DateTime</td><td>R</td><td></td></tr><tr><td>5</td><td>message.id</td><td>ID</td><td>R</td><td></td></tr><tr><td>6</td><td>message.content or message.imageFile (for photos)</td><td>Text</td><td>R</td><td></td></tr><tr><td>7</td><td>minutesLatency</td><td>32-bit Integer</td><td>C</td><td>Duration between creation of the Message and the creation of the like, in minutes</td></tr><tr><td>8</td><td>isNew</td><td>Boolean</td><td>C</td><td>False if person and friend know each other, True otherwise</td></tr></table> | | | | | 1 | friend.id | ID | R | | 2 | friend.firstName | String | R | | 3 | friend.lastName | String | R | | 4 | likes.creationDate | DateTime | R | | 5 | message.id | ID | R | | 6 | message.content or message.imageFile (for photos) | Text | R | | 7 | minutesLatency | 32-bit Integer | C | Duration between creation of the Message and the creation of the like, in minutes | 8 | isNew | Boolean | C | False if person and friend know each other, True otherwise |
| 1 | | friend.id | ID | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | friend.firstName | String | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | friend.lastName | String | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | likes.creationDate | DateTime | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | message.id | ID | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | message.content or message.imageFile (for photos) | Text | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | minutesLatency | 32-bit Integer | C | Duration between creation of the Message and the creation of the like, in minutes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | isNew | Boolean | C | False if person and friend know each other, True otherwise | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IC 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | sort | <table><tr><td>1</td><td>likes.creationDate</td><td>↓</td><td></td></tr><tr><td>2</td><td>friend.id</td><td>↑</td><td></td></tr></table> | | | | | 1 | likes.creationDate | ↓ | | 2 | friend.id | ↑ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | likes.creationDate | ↓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | friend.id | ↑ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | limit | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CPs | 2.2, 2.3, 3.3, 5.1, 8.1, 8.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | relevance | This query looks for paths of length two, starting from a given Person, moving to its published messages and then to Persons who liked them. It tests several aspects related to join optimization, both at query optimization plan level and execution engine level. On the one hand, many of the columns needed for the projection are only needed in the last stages of the query, so the optimizer is expected to delay the projection until the end. This query implies accessing two-hop data, and as a consequence, index accesses are expected to be scattered. We expect to observe variate cardinalities, depending on the characteristics of the input parameter, so properly selecting the join operators will be crucial. This query has a lot of correlated sub-queries, so it is testing the ability to flatten the query execution plans. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |