

## BI / read / 12

BI 1	query	BI / read / 12			
BI 2	title	How many persons have a given number of messages			
BI 3	pattern	<pre> sequenceDiagram     participant P1 as Person     participant P2 as Message     participant P3 as Post     P2-&gt;&gt;P3: messageCount = count     activate P3     P3--&gt;&gt;P1: hasCreator opt     P1-&gt;&gt;P2: personCount = count     deactivate P3     activate P2     P2--&gt;&gt;P3: replyOf 0.. language in \$languages     deactivate P2     deactivate P3     constraint "content not empty and length &lt; \$lengthThreshold and \$startDate &lt; creationDate"   </pre>			
BI 4	<p>For each Person, count the number of Messages they made (messageCount). Only count Messages with the following attributes:</p> <ul style="list-style-type: none"> <li>Its content is not empty (and consequently, the <code>imageFile</code> attribute is empty for Posts).</li> <li>Its <code>creationDate</code> is after <code>\$startDate</code> (exclusive, equality is not allowed).</li> <li>Its <code>length</code> is below the <code>\$lengthThreshold</code> (exclusive, equality is not allowed).</li> <li>It is written in any of the given <code>\$languages</code>.       <ul style="list-style-type: none"> <li>The language of a Post is defined by its <code>language</code> attribute.</li> <li>The language of a Comment is that of the Post that initiates the thread where the Comment replies to.</li> </ul> </li> </ul> <p>The Post and Comments in the reply tree's path (from the Message to the Post) do not have to satisfy the constraints for <code>content</code>, <code>length</code>, and <code>creationDate</code>.</p> <p>For each <code>messageCount</code> value, count the number of Persons with exactly <code>messageCount</code> Messages (with the required attributes).</p>				
BI 5	params	1	\$startDate	Date	Selected randomly from a 60-day interval.
BI 6		2	\$lengthThreshold	32-bit Integer	Balanced against <code>startDate</code> to filter around 30% of the Messages within a language and keep the variance low. The selection of this parameter uses a factor table of bucketed Message lengths and creation dates.
BI 7		3	\$languages	{String}	Only the most frequently used languages
BI 8	result	1	messageCount	32-bit Integer	A Number of Messages created
BI 9		2	personCount	32-bit Integer	A Number of Persons with <code>messageCount</code> Messages
BI 10	sort	1	personCount	↓	
BI 11		2	messageCount	↓	
BI 12	limit	n/a			
BI 13	CPs	1.1, 1.2, 1.4, 2.6, 3.2, 4.2, 4.3, 8.1, 8.2, 8.3, 8.4, 8.5			