Exemplar Queries: Unleashing the Power of Knowledge Graphs

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Percentage of people who
use search engines: 93%
find useful info: 91%
are satisfied: 73%

Percentage of users that during search
get new info: 86%
get conflicting info: 41%
get partial info: 34%

but only 70% of people use the correct words to find what they need

Search Engines

and Users

I'm looking for cases similar to the acquisition of YouTube by Google

Find me articles like this paper that talks about using cryptography for software security

What are other pairs of products that can sell so successfully like beers and diapers?

Give me a municipality operating like the one of Rome

Lawyer
Student
Seller
Politician

Problem definition
A query $Q$ is a database whose graph representation is a connected graph. An answer to a query $Q(N_Q, E_Q)$ on a database $D$ is any subgraph $D' := (N_D, E_D)$ of $D$ that is isomorphic to $Q$, i.e., $D' \cong Q$, and $\forall n_Q \in N_Q, n_D \in N_D: \mu(n_Q) = n_D \Rightarrow n_Q = n_D$. The set of all such subgraphs, denoted as $\text{exal}(Q)$, is referred to as the answer set of the query.

Ranking Function

$$\sigma(n, e) = \sum_{t \in \text{top-k}} R(t)^{\alpha}$$

$$s(n, n') = \frac{\sum_{e \in \text{top-k}} \sigma(n, e) \sigma(n', e)}{\sqrt{\sum_{e \in \text{top-k}} \sigma(n, e)^2} \sqrt{\sum_{e \in \text{top-k}} \sigma(n', e)^2}}$$

Exemplar Query

Traditional Evaluation

Similarity Search

Results

Google YouTube
Yahoo! Flickr
HP 3Com
Facebook WhatsApp

Ranking and top-k

Reformulation
