SynopSys: Large Graph Analytics in the SAP HANA Database Through Summarization

Example: What is the average rating of the Apple iPhone 5 from American and German users?

Catalogue of Summarization Templates

- **Collect vertex attribute values**
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- **Collect edge attribute values**
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  - 

  - **Match mode match-all within a graph pattern**
  - **Adds multiset attributes for collecting the matched values**

- **Aggregate vertex attribute values**
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- **Aggregate edge attribute values**
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  - 

  - **Matches a single multiset attribute**
  - **Applies an aggregation function to a multiset and creates a new attribute**

- **Collapse vertices**
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- **Collapse edges**
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  - **Match mode match-all within a graph pattern**
  - **Introduces a representative for a set of vertices or edges**

Grouping: Each variable appearing on new vertices or edges is a grouping specifier

Group products by capacity

Group ratings by nationality

Anatomy of a Summarization Template

Graph Processing in SAP HANA

Grouping & Aggregation: SQL & SPARQL

Group products by capacity

Group ratings by nationality

Author: Michael Rudolf