Property Graphs

Position Paper for Workshop on Social Standards

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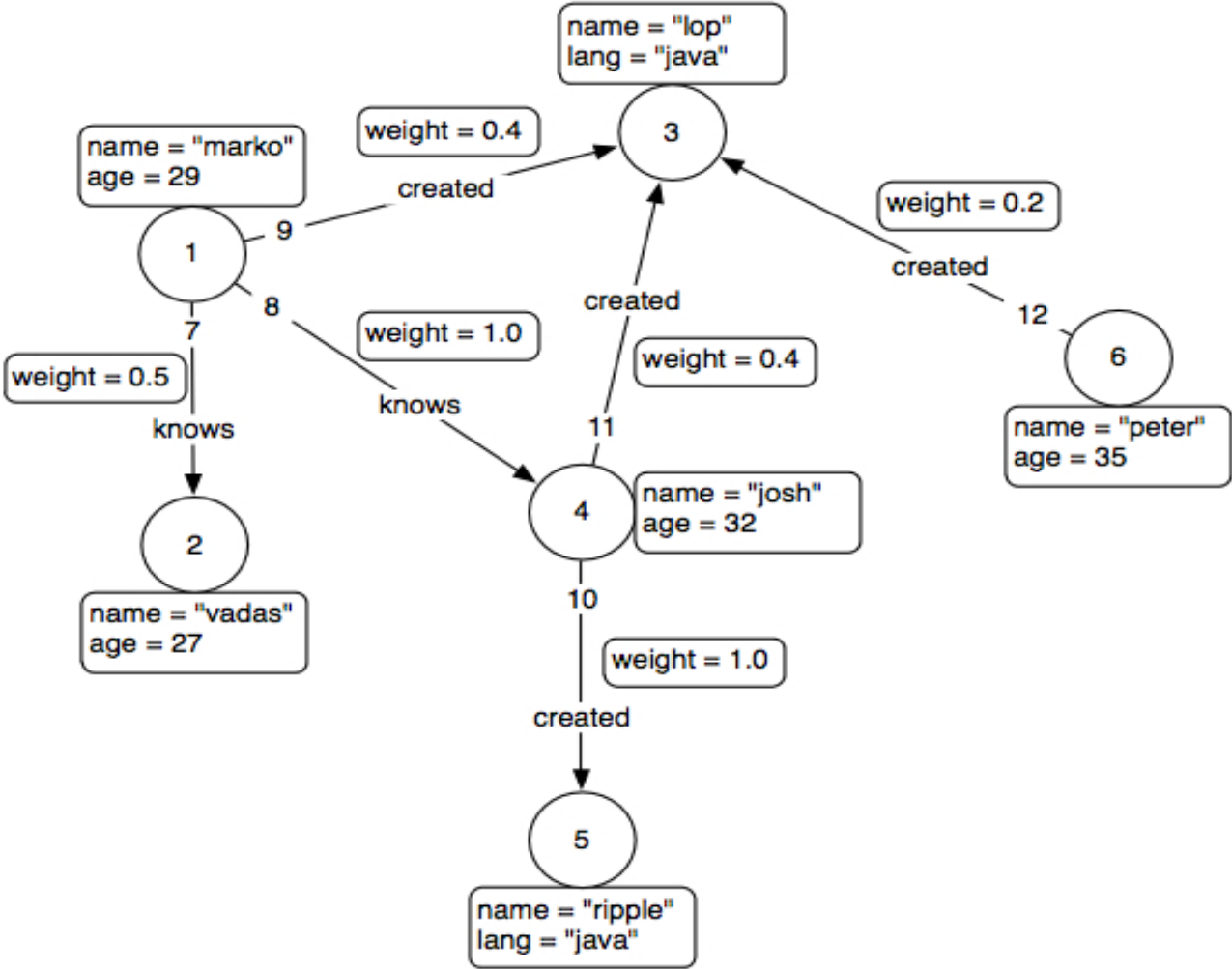Xavier Lopez
Souri Das
Jay Banerjee

Oracle

Property Graphs

- Social network providers are using property graphs to analyze and "mine" their networks

- A few vendors provide capabilities to store and work with property graphs

- Also a few home-grown implementations

- There are differences in the data model, the API and the capabilities offered

Property Graphs

- What are they?
- Node/edge model where the edges, as well as the nodes, have attributes (key-value pairs)
- Can be modelled in RDF

Example from Tinkerpop

Property Graph Model

- A set of nodes
  - each node has a unique identifier.
  - each node has a set of outgoing edges.
  - each node has a set of incoming edges.
  - each node has a collection of key-value properties.
- A set of edges
  - each edge is directed i.e. has a head and a tail node.
  - each edge has a unique identifier.
  - each edge has a label that denotes the type of relationship between its source and target nodes.
  - each edge has a collection of key-value

Recommendations

- The W3C should start two community groups
- One should to look into a standard for property graphs
- The other should work on a vocabulary for relationships and properties