

A Scalable Platform for Interactive Large Graph Visualization

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The graphVizdb Platform

> Novel Graph Visual Exploration Paradigm

Similar to the exploration of web maps

> Preprocessing

Graph Layout \Rightarrow Spatial Indexing & DB Storing

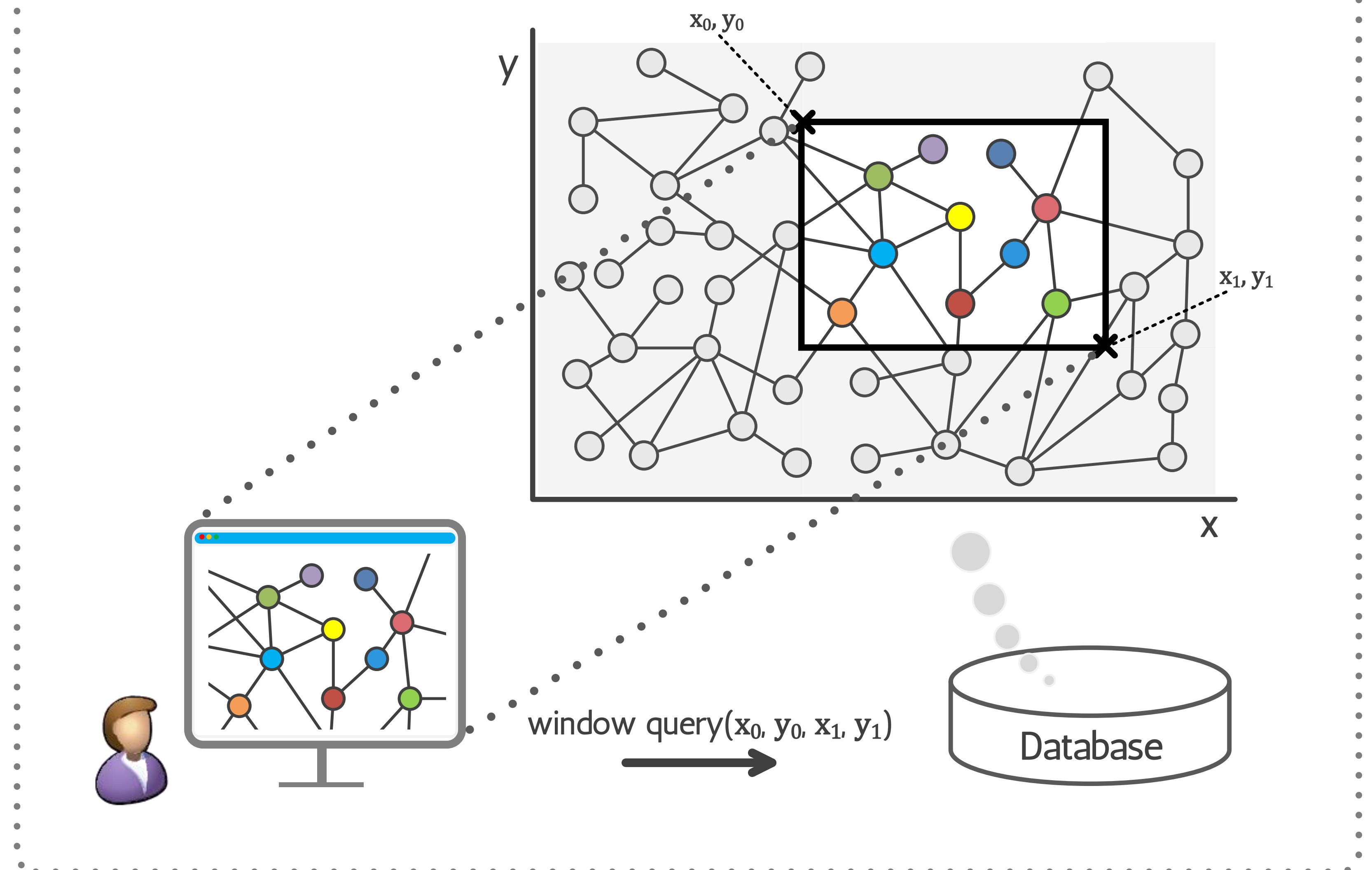
> Exploration

User Interaction \Rightarrow Spatial Window Queries

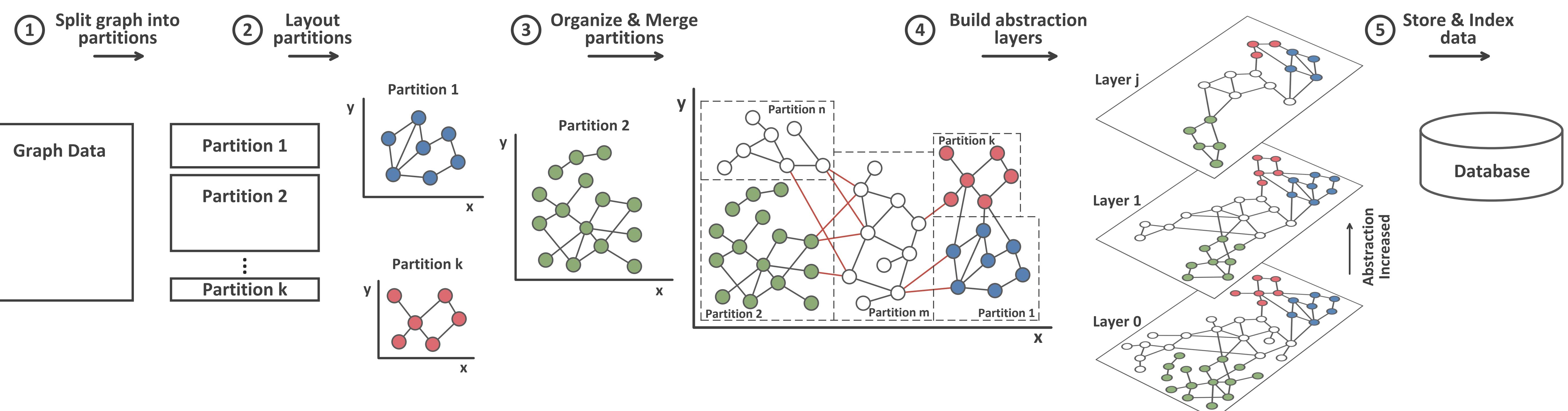
> Main Operations

- > Interactive Navigation
- > Multi-level Exploration
- > Keyword Search
- > Subgraph Selection & Manipulation

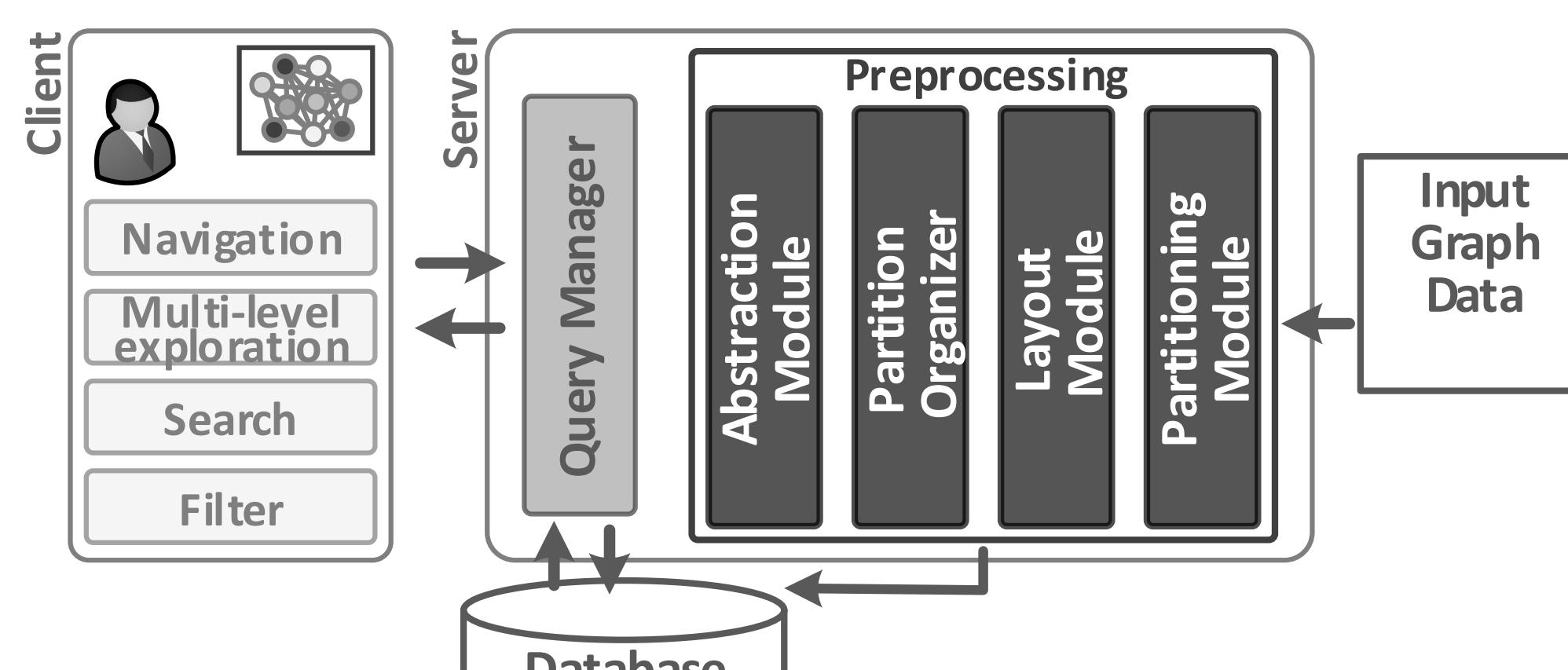
Approach Overview



Preprocessing



Platform Architecture



> Storage & Indexing Scheme

index	B-tree	fulltext	R-tree	B-tree	fulltext	
attribute	Node ₁ ID	Node ₁ Label	Edge Geometry	Edge Label	Node ₂ ID	Node ₂ Label
type	int	text	geometry	text	int	text

Performance Evaluation

> Data

Wikidata RDF: 151M edges | 146M nodes | 2.3E-6 density
Patent citation: 16.5M edges | 3.8M nodes | 1.4E-8 density

> Interaction

Random window queries: 200² ~ 3000² pixels

