

Graph Database

Knowledge Graph

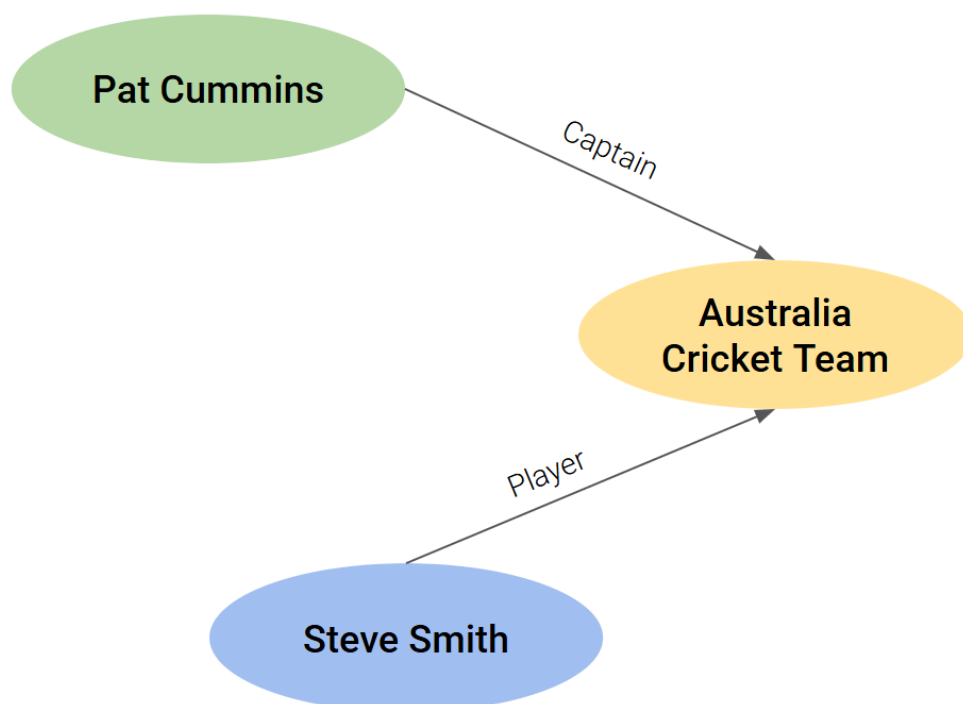
A knowledge graph is a knowledge base that represents real-world entities and the relationships between them in a graph-structured way, like a network of nodes (entities) and edges (relationships).

Main Components

- **Nodes:** Any object, place or person can be a node
- **Edges:** Define the relationship between the nodes
- **Labels:** Type of Entity or Relation

Example

1. Pat Cummins is the captain of Australian cricket team
2. Steve Smith is the player of Australian cricket team



Difference between RDBMS and Graph Database

| RDBMS | Graph Database |
|-------------------------------------|-----------------------|
| Tables | Graph |
| Insert Records → Rows | Nodes |
| Columns and Data | Properties and Values |
| Constraints → Primary, Foreign Keys | Relationships |
| Join queries | Traversal |

Advantages of Neo4j

1. Data Model: Nodes, Relationship, Properties and Values
2. Real Time Insights
3. Easy Retrieval
4. Cypher Query Language → Declarative way to represent graph visually
5. No joins

Neo4j Property Graph Data Model

