Neo4j implementation updates

Bugfixes and decisions

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Neo4j and Cypher

- Neo4j has the first ever Cypher implementation
- Neo4j viewed as reference implementation, i.e., the Truth™
- Neo4j implementation still contains bugs, and Cypher is still not fully specified
  - Changes will be introduced and semantical decisions made
    - 'Bugs' / 'corner cases'
  - Sometimes our mental model is wrong, sometimes the implementation is wrong
Neo4j -- recent decisions

- LIMIT and updates
- UNWIND and non-lists
- Order of UNION fields
LIMIT and updates

MATCH (s:Start)
CREATE (n)-[:TO]->(:End)
RETURN n.position
LIMIT 10

MATCH (s:Start)
WITH *
LIMIT 10
CREATE (n)-[:TO]->(:End)
RETURN n.position

- Each clause completes before next starts
- Subclauses CIP suggests LIMIT allowed directly on reading clauses

Never-ending query:
MATCH ()
CREATE ()
UNWIND and non-lists

UNWIND [null, 'string', []] AS i
UNWIND i AS j
RETURN j

- Any non-list value is treated as singleton list, including null
- Empty list halts execution

j
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null
'string'
Order of UNION fields

- Order of fields must be the same for all sub-parts of UNION
- Order of fields are relevant for return records
  - This may be up for wider debate
Questions?