
CS 346: EX Component

Distributed RedBase

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Functionality

- **dbcreate** <dbName> **-distributed** <numberNodes>
 - **create table** <relName> (<attrInfo>) **distribute** <attrName> (<partitionVector>)
 - **Insert** and **Load** commands populate distributed relations
 - **Print** command prints the entire relation
 - **Delete** and **Update** queries forwarded to the appropriate partitions
 - **Select** query fetches the required fragments of the distributed relations and performs the query
 - **Communication layer** for the interaction and data transfer between the nodes
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Design

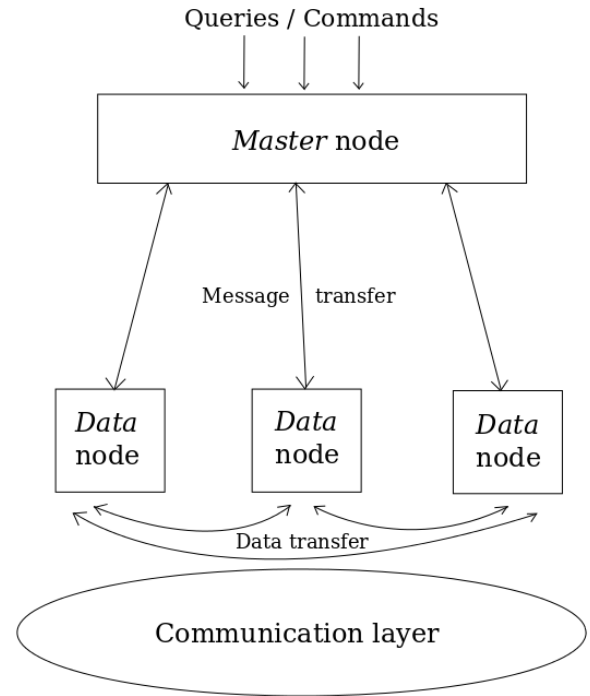
- **Master node and data nodes**
- Non-distributed relations only in the master node
- Distributed relations fragmented by partition vector into data nodes

- **Recursive design =>**

Queries on fragment of distributed relation by data node

equivalent to

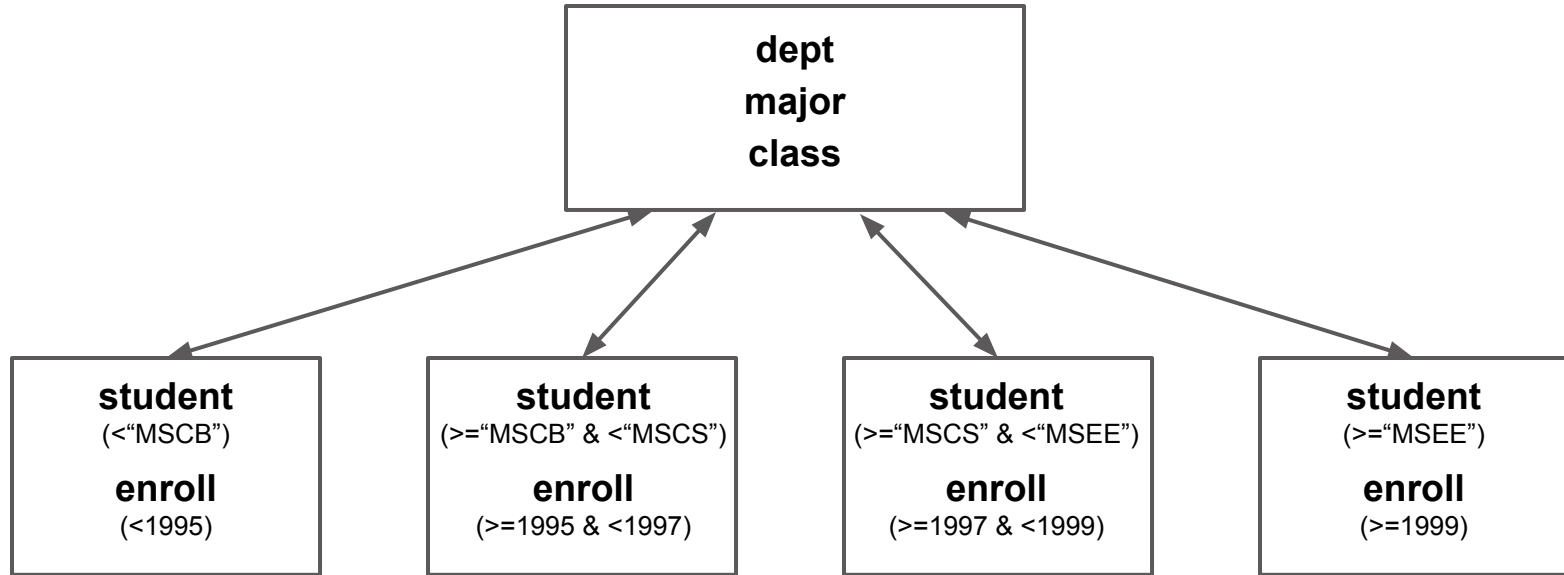
Queries on non-distributed relation by master node



Communication Layer

- **Message transfer:**
 - Methods to create, drop, insert, load, delete, update relations in data nodes
 - Query forwarding to data node from master node
 - **Data transfer:**
 - Transfer records from one node to another
 - Data transfer through RM files
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Test Example



student - distributed by **majorid** ("MSCB", "MSCS", "MSEE")

enroll - distributed by **year** (1995, 1997, 1999)
