Distributed Data Management
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Exercise 5 - Optimal Fragmentation

based on [1]

1 An Optimal Horizontal Fragmentation

A company has the subdivisions *Games* (`G`), *Tools* (`T`) and *Rental* (`R`). The departments are primarily assigned to one one of the divisions: departments 100. . .250 to the division `G`, departments 251. . .400 to the division `T`, and departments 401. . .499 to the division `R`.

The analysis of the application's 1. . .6 accesses to `DEPT` resulted in the following access characteristics:

A_1 : access to all tuples with `div=G`

A_2 : access to all tuples with `div=T`

A_3 : access to all tuples with `div=R`

A_4 : access to all tuples with `DeptNo`$\in [100 \ldots 150]$

A_5 : access to all tuples with `DeptNo`$\in [151 \ldots 299]$

A_6 : access to all tuples with `DeptNo`$\in [300 \ldots 499]$

The `DEPT`-relation now must be fragmented horizontally according to these access patterns. Check the relevance of the given predicates and the resulting fragmentation based on logic reasoning.

References

[1] Peter Dadam. Vetreilte Datenbanken und Client/Server-Systeme: Grundlagen, Konzepte, Realisierungsformen. Springer-Verlag Berlin Heidelberg, 1996