

Big Data Engineering: Assignment 3

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Relational Algebra and SQL

Subproblem 2

Translate the following colloquial queries into relational algebra expressions

1.

$\sigma_{city < > 'Saarbrücken'} (libraries \bowtie_{lid=libraries} (membership \bowtie_{member=mid} members))$

2.

$R_1 := members \bowtie_{favorite_author=aid} (\sigma_{salary > 2000} authors)$

$R_2 := \sigma_{sum(late_fees)=100} (\gamma_{reservation_date, sum(late_fees)} (reserve \bowtie_{member=mid} R_1))$

$\gamma_{avg(late_fees)} R_2$