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Query Optimization

4. Exercise, Winter 2007/2006

Due 2007-11-27

1. Given $|R_1|$, $|R_2|$, the Domain of $R_1.x$ and $R_2.y$, and the information if $R_1.x$ and/or $R_2.y$ are keys of R_1 and R_2 .
 - (a) How can you estimate the selectivity of $\sigma_{R_1.x=c}$ if c is a constant? (2)
 - (b) How can you estimate the selectivity of $\bowtie_{R_1.x=R_2.y}$? (3)
2. Implement a program, that transforms input of the form

```
from  
vorlesungen v  
professoren p  
where  
p.persnr=v.gelesenvon  
;
```

into a canonical execution plan and then executes the plan. Assume that the input is correct (one entry per line etc.). For the execution you can use the *tinydb* package linked from the lecture web site, the *samples* directory includes some examples (JoinSample.java might be useful). (5)