Solutions to Exercises for 3/12/13

3b Main loop: $\frac{10000}{1000} = 10$ iterations

Each iteration: Read 1000 blocks of R and all of S, i.e., 11000 blocks

Total $10 * 11.000 = 110.000$ reads

3c Assume $M = k + 1$. Cost is $\frac{10.000}{k}(k + 10.000)$ i.e., $= 10.000 + \frac{100.000.000}{k}$

Solve for $c <$ 100.000, 25.000, 15.000

4 Memory requirements 10.000 (for γ) and 20.000 (for the others) must be less than M^2

6 Without index: 10.000

With index $\frac{500.000}{k}$

7 (a) $2 < 1$ (A, C), and $3 < 2$ (B). Serializable $T_3; T_2; T_1$.

(b) $3 < 1$ (A) $1 < 2$ (B), and $2 < 3$ (B). Not serializable

(c) $1 < 3$ (A) $2 < 3$ (C), and $1 < 2$ (B). Serializable $T_1; T_2; T_3$.

(d) $1 < 2 < 1$ (B). Not serializable

(e) $2 < 1$ and $3 < 1$ (A) $1 < 2$ and $4 < 2$ (B). Not serializable