

Errata

“Capacity Planning and Performance Modeling: from mainframes to client-server systems”

Menascé, Almeida, and Dowdy, Prentice-Hall, 1994

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Some of the following errors may have already been corrected if you have a second or more recent printing.

1. Chapter 2, Page 55, paragraph after Eq. (2.6)
“The mean and standard deviation for the CPU time in milliseconds are 62 and 40.15, respectively.”
⇒
“The mean and standard deviation for the CPU time in seconds are 6.2 and 4.015, respectively.”
2. Chapter 2, Page 58, item 5
“... is 0.43.” ⇒ “... is 0.44.”
3. Chapter 2, Page 59, item 10
“ $[0.69 = (0.60 + 0.70 + 0.78)/3, 2.41 = (2.38 + 2.45 + 2.40)/3]$ ”
⇒
“ $[0.69 = (0.60 + 0.78 + 0.70)/3, 2.40 = (2.38 + 2.45 + 2.38)/3]$ ”
4. Chapter 2, Page 75, bibliography
“21. L. Bronner, Overview of the capacity planning process for production data processing, *IBM Systems Journal*, Vol. 18, No. 1, 1980.”
⇒
“21. L. Bronner, Overview of the capacity planning process for production data processing, *IBM Systems Journal*, Vol. 19, No. 1, 1980.”
5. Chapter 3, Page 83, paragraph starting with “Now ...”
“Therefore, an increase of λ in the range $[0, \lambda_1]$ causes an increase in the time spent in the system internal waiting queues, and therefore results in an increase in T .”
⇒

“Therefore, an increase of λ in the range $[0, \lambda_1]$ causes an increase in T due to an increase in the time spent in the system internal waiting queues and not due to an increase in memory contention.”

6. Chapter 4, Page 128, section 4.4, first line
“... transaction system ...” \Rightarrow “... interactive system ...”
7. Chapter 4, Page 129, Figure 4.5
“Transaction System” \Rightarrow “Interactive System”
8. Chapter 4, page 135, Second example
“Considering that the system has 150 terminals and that the average think time is 20 sec, ...” \Rightarrow “Considering that the system has 150 terminals and that the average think time is 10 sec, ...”
9. Chapter 5, page 150, top of the page
“This states that

$$\mu_c(1 - p)P_{101} = \mu_s P_{011}$$

”

\Rightarrow

“This states that

$$\mu_c(1 - p)P_{110} = \mu_s P_{011}$$

”

10. Chapter 5, page 150, middle of the page
“and reduced it to

$$\mu_c(1 - p)P_{101} = \mu_s P_{011}$$

...”

\Rightarrow

“and reduced it to

$$\mu_c(1-p)P_{110} = \mu_s P_{011}$$

...”

11. Chapter 5, page 162, paragraph after Eq. 5.8

“for $m = 1, 2, \dots, \text{MPL}$ ” \Rightarrow “for $n = 1, 2, \dots, \text{MPL}$ ”

12. Chapter 6, page 187, table 6.3

Replace $R_{1,q}, R_{2,q}, R_{3,q}, R_{1,u}, R_{2,u}, R_{3,u}$ by $R'_{1,q}, R'_{2,q}, R'_{3,q}, R'_{1,u}, R'_{2,u}, R'_{3,u}$

13. Chapter 6, page 192, line 14

“... queue lengths for 500 (25×20) ...” \Rightarrow
 “... queue lengths for 6 (26×21) ...”

14. Chapter 6, page 201, figure 6.9, Step 3 of the algorithm

“ $D_{i,r}^e = \frac{D_{i,r}}{1 - U_i}, \forall r \in \{1, 2, \dots, C\}$ ”

\Rightarrow

“ $D_{i,r}^e = \frac{D_{i,r}}{1 - U_{i,\text{open}}}, \forall r \in \{1, 2, \dots, C\}$ ”

15. Chapter 6, page 201, figure 6.9, Step 6 of the algorithm

$n_{i,\text{open}}(\vec{O}) = \lambda_r R_{i,r}(\vec{O}) \Rightarrow n_{i,\text{open}}(\vec{O}) = \lambda_r R'_{i,r}(\vec{O})$

16. Chapter 7, page 226, before Table 7.5

“The resulting values are 36, 306, and 738 μsec , ...”

\Rightarrow

“The resulting values are 36, 306, and 738 msec , ...”

17. Chapter 7, page 211

“ L_{sql} = average length (in bytes) of the result of an SQL request ”

\Rightarrow

“ L_{sql} = average length of the result of an SQL request ”

18. Chapter 7, page 229, figure 7.9, step **Compute Response Times per Class** should be
 For $r := 1$ to R do $R_{0,r}(\vec{\lambda}) := \sum_{i=1}^K R'_{i,r}(\vec{\lambda})$
19. Chapter 7, page 229, figure 7.9, step **Compute Number in System per Class** should be
 For $r := 1$ to R do $\bar{N}_r^s(\vec{\lambda}) := \sum_{i=1}^K N_{i,r}(\vec{\lambda})$
20. Chapter 8, page 240, line 10 of section 8.2.3
 “(i.e., $J_q = 3$ and $J_u = 1$)” \Rightarrow “(i.e., $J_q = 4$ and $J_u = 1$)”
21. Chapter 8, page 242
 “6. Obtain performance results for the $(C - R)$ unconstrained classes from the solution of the transformed multiclass model (step 2), which take as input parameter for the memory-constrained classes the final values for \bar{n}_c , obtained in step 3.”
 \Rightarrow
 “6. Obtain performance results for the $(R - C)$ unconstrained classes from the solution of the transformed multiclass model (step 2), which take as input parameter for the memory-constrained classes the final values for \bar{n}_c , obtained in step 3.”
22. Chapter 8, page 242, last line:
 “5.83 sec. ” \Rightarrow “5.39 sec.”
23. Chapter 8, page 244, second paragraph, third sentence
 “Moving outward the memory ...”
 \Rightarrow
 “Moving outward from main memory ...”
24. Chapter 8, page 251, second line after Eq. 8.21
 “ $1/2 \times 1/3600 = 8.3$ msec” \Rightarrow “ $1/2 \times 60/3600 = 8.3$ msec’

25. Chapter 8, Page 259, Table 8.8

	Model		
	Q_1	Q_2	Q_3
...
$D_{\text{cpu},3}^2$	-	$0.8/(1 - 0.327) = 1.19$	$0.8/(1 - 0.287) = 1.12$
$D_{\text{cpu},4}^3$	-	-	$0.9/(1 - 0.747) = 3.56$
...

\Rightarrow

	Model		
	Q_1	Q_2	Q_3
...
$D_{\text{cpu},3}^2$	-	$0.8/(1 - 0.324) = 1.18$	$0.8/(1 - 0.287) = 1.12$
$D_{\text{cpu},4}^3$	-	-	$0.9/(1 - 0.751) = 3.61$
...

26. Chapter 8, page 261, eq. 8.30

$$R'_{\text{pag}}(n) = \begin{cases} \left\{ D_{\text{pag}}^{\text{NP}} + \left[1 + \left(\frac{a}{\text{NP}/n} \right)^2 - \left(\frac{a}{F} \right)^2 \right] \times S_{\text{pag}} \right\} \times [1 + \bar{n}_{\text{pag}}(n - 1)] & n > \text{NP}/F \\ D_{\text{pag}}^{\text{NP}} & n \leq \text{NP}/F \end{cases}$$

\Rightarrow

$$R'_{\text{pag}}(n) = \begin{cases} \left\{ D_{\text{pag}}^{\text{NP}} + \left[1 + \left(\frac{a}{\text{NP}/n} \right)^2 - \left(\frac{a}{F} \right)^2 \right] \times S_{\text{pag}} \right\} \times [1 + \bar{n}_{\text{pag}}(n - 1)] & n > \text{NP}/F \\ D_{\text{pag}}^{\text{NP}} \times [1 + \bar{n}_{\text{pag}}(n - 1)] & n \leq \text{NP}/F \end{cases}$$

27. Chapter 8, page 261, last equation of the page: drop $n = 1, \dots, N$.

28. Chapter 9, page 283, last paragraph:

“... on-line real-time multiuser system that receives requests, processes them, and returns response ...”

⇒

“... on-line real-time multiuser system that receives requests, processes them, and returns responses ...”

29. Chapter 11, section 11.3, page 344

$$0.3 \times \frac{2,160,000 \text{ tr./month}}{30 \text{ days/month}} = 21,600 \text{ tr./hr} = \frac{21,600 \text{ tr./hr}}{3600 \text{ sec/hr}} = 6 \text{ tps}$$

⇒

$$0.3 \times \frac{2,160,000 \text{ tr./month}}{30 \text{ days/month}} \times \frac{1}{1.0 \text{ hr./day}} = 6 \text{ tps}$$

30. Chapter 12, page 372

“To remain informed of the developments in the area, we recommend the following specialized publications: *ACM Sigmetrics Performance Evaluation Review*, Computer Measurement Group (CMG) *Transactions and Proceedings*, *EDP Performance Review*, and *Performance Evaluation*. ”

⇒

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31. Appendix D, Page 397

“This version is restricted to models with up to 3 workloads, 8 devices, max MPL = 20 per workload. ”

⇒

“This version is restricted to models with up to 3 workloads, 8 devices, max MPL = 10 per workload.”

32. Appendix A, page 381, in the definition of Think Time:

“... he/she receives ...”

⇒

“...he/she submitts ...”

33. Index, page 403, add the following references at the end of letter G

Grummit, A., 368

Gunther, J., 368