

Systems Software: Essential Concepts
First Edition
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ERRATA

0.- In Acknowledgement, page xv, last line

Replace “I had play” by “I had to play”

1.- Page 23, figure 2.6, step 2:

Replace “by one the new value” by “by one, and the new value”.

2.- Page 24, first line:

Replace “ $ALU \leftarrow R[y]$ ” by “ $ALU \leftarrow R[x]$ ”

2a.- Page 24, instruction EQ in flowchart:

In line 3, replace “ $IFR[0]$ ” by “ $IF R[0]$ ”

3.- Page 25, first paragraph, line 2:

Replace “JumP on Condition (JPC)” by “**JumP** on Condition (JPC)”

3a.- Page 25, last paragraph, at the beginning of line 1 (or third line from the bottom up):

Replace “In this new example” by “In the next example”

4.- Page 28, in the paragraph before last paragraph, line 2:

Replace “Figure 2.9 depicts” by “Figures 2.8 and 2.9 depict”

5.- Page 29, figure 2.9:

“The arrow from OUTBUF should point the screen instead of the keyboard”

7.- Page 37, program at the end of page

In text segment, the **line** between addresses “0x3C01” and “0xF000” must be deleted.

8.- Page 39, Summary, line 6:

Replace “understand the user program” by “execute the user program”

9.- Page 55, program 3.1:

In function sub2 (y), replace “c:= 2” by “c:= 2 + y”

10- Page 67, at the bottom:

Line before last:

Replace “Below” by In box 1.1”

Last line, last word:

Replace “calloc” by “malloc”

12.- Page 68, at the bottom, last line in box 1.1:

Replace “FREE A → X” by “FREE ARR → X”

12.- Page 69, first paragraph, line 5:

Replace “known” by “unknown”

13.- Page 75, last paragraph, line 3:

In storage.alloc(5), replace “5” by “6”

14.- Page 76, Figure 4.11:

In Caption:

In storage.alloc(5), replace “5” by “6”

In heap box:

In cell 0, Replace “5” by “6” and shade cell 6

15.- Page 76, first paragraph, line 3:

Replace “zero to five” by “one to six”

16.- Page 79, in summary, line 7:

Replace “collector mechanism” by “collection algorithm”

17.- Page 87, second paragraph, line 2:

Delete “as PL/0 terminal symbols”

18.- Page 90, last paragraph, line 3:

Insert after “identifier” the word “name”

19.- Page 92, after first paragraph paragraph, in functions “Lookup(identifier)”, line 3:

Replace the “zero.” by “zero, which means that the identifier has not been declared.”

20.- Page 93, in the paragraph, after PL/0 program identified with numbers 1, 2, and 3:

line 2: Replace “row” by “two rows”

line 3: Replace “second” by “third”

21.- Page 93, towards the middle of the page, there are two sequences of letters and numbers. The first one begins with 28 and the second one begins with 29:

Add “02 x 20 02 y 04 02 pi 18” as a third line underneath the sequence that begins with 29.

22.- Page 94, table on top:

Pointer “tp” and “the arrow” are pointing at index 1 and should point to index 2.

23.- Page 94, after the table on top of page, there is a line beginning with “Take”:

Replace “Take” by “Let us take”

24.- Page 99, first paragraph, line 1:

Replace “machine code (object code)” by “object code”

25.- Page 108, The second paragraph that begins with a “3”, in the middle of the page:

In the last line (line 5): replace “or” by “and/or”

26.- Page 110, Grammar defined at the end of page:

There is too much space between the left-hand side and the right hand side. It should look like this one below:

```
R1 S ::= ID := E
R2 ID ::= v | w | x | y
R3 E ::= E + T
R4   | T
R5 T ::= T * F
R6   | F
R8 F ::= ( E )
R7   | ID
```

27.- Page 111, paragraph in the middle, line 3 and 4:

In line 3:

Replace “placing the plus symbol first. However, the multiplication will be carried out first, because” by “placing the plus and times symbols in different grammars rules.”

In line 4:

Replace “the grammar enforces” by “The new grammar enforces”

Last line:

Replace (E) by “E”

28.- Page 112, first line and last statement:

In first line:

Replace “recursive” by “left recursive”

In last statement:

Replace “X represents a syntactic class (nonterminal) in” by “X represents a syntactic class (nonterminal). In”

29.- Page 117, two lines program at the bottom:

The program is not aligned. It should look like this:

```
var x, y; ← Let us work with the declaration first.
x := y + x.
```

30.- Page 119, going bottom up, lines 4 and 5:

Statements are not aligned, it looks like this:

```
if i != 0 then emit (STO, RF[rp], 0, symbol_table {i}.address)
                    rp := rp + 1;
```

and should look like this (notice that symbol “+” is changed to “-“):

```
if i != 0 then emit (STO, RF[rp], 0, symbol_table {i}.address)
                    rp := rp - 1;
```

31.- Page 120, corrections on programs:

1) In program on top, right hand side

Replace “F” by “factor”

2) In program procedure factor, going bottom up, line before last:

Where it says “else ERROR” we need to add a comment.

It should look like this and the comment aligned with all the other comments in the program:

```
“else ERROR”           // error message: “(” right parenthesis expected
```

32.- Page 121, in programs on top of page:

To be consistent with programs on top of page 119, we must do:

On the left hand side:

Replace “E” by “expression”

Replace “T” by “term”

Replace “E” by “expression”

On the right hand side:

Replace “T” by “term”

Replace “F” by “factor”

Replace “T” by “term”

33.- Page 122, lines 4 and 5 from the top:

Replace “(cd)” by “(cx)” in both lines

34.- Page 133, figure 7.1 captions, line 2:

Delete “after execution”

35.- Page 137, figure 7.1 and figure 7.6:

The word “label” in both figures must be aligned with the labels located next to the box as in figure 7.4 in page 136.

36.- Page 157, beginning final line at the bottom:

Replace “this” by “this flag”

37.- Page 159, last paragraph, from top to bottom, line 5:

At the beginning of the statement, replace “This program is a known” by

“This program is known” or in other words, delete the “a”

38.- Page 160, figure 8.4:

In the text on the right-hand side, after 1,2, and 3, replace “BACK TO FETCH” by “(4) Go to INTERRUPT”. Then after 5 spaces, insert:

```
“05 INTERRUPT  
IF OV = 1 PC ← NEWPC  
Back to fetch”
```

See Figure 8.5 as a reference.

40.- Page 167, figure 8.10:

In the center box there is a small box called OLD-PC. Inside that box the number “4001” should be written

41.- Page 173, second paragraph, line 3, towards the center:

Delete the comma between “SVC, and I/O interrupt”

42.- Page 177, in INTRODUCTION, beginning of line 6:

Insert “of” between “track” and “program”. It should say “track of program”

43.- Page 179, in ACTIVATING PRIOR KNOWLEDGE, number 7:

The answer “context switch” is appears twice; delete the last one

44.- Page 201, last paragraph, beginning at line 5, towards the right end of line and ending in line 6, on the left hand side:

Replace “the process 1 PCB.” By “PCB_1.”

45.- Page 204, the two programs on top and Shared buffer B:

Program on left hand side, line 56: Replace “k = 1” by “k = 5”

Program on right hand side, line 20: Replace “i = 1” by “i = 5”

The shared buffer should be centered in between the two programs

46.- Page 216, first of the two paragraph at the end of page going top down:

In line one, towards the right-hand side, replace “B)” by B

In line two, towards the right-hand side, replace “A)” by A