

FOUNDATIONS IN COMPUTER STUDIES WITH COMAL by John Kelly  
Notes for use with PET and Commodore 64 COMAL version 0.14

Programs from the book are available on disk for \$19.95. To retrieve them from disk:  
NEW  
ENTER "PROGRAM1" (program numbers 1 - 118 are on the disk)

System tab stops are called ZONEs by the COMAL Standard. The book uses TAB.

Page 7, 72: Change from: TAB:=6 Change to: ZONE 6

Program SAVEing and LOADING is different from system to system. For Commodore COMAL:  
SAVE "NAME" or SAVE "0:NAME" LOAD "NAME" or LOAD "0:NAME"

NAME is the program name, and may optionally be preceded by the drive number and colon.

In a few places, program lines are too long to enter into COMAL (limit of 80 characters/line)

Page 28, 30: Split long lines into two: (page 28 line 0030 and page 30 line 0080)

Due to a bug in the Commodore 40 column operating system, do not use INPUT prompts longer than 39 characters. A few places in the book uses long prompts. Either change them into one print statement followed by a shorter prompt, or just shorten the prompt (Pages 30, 154, 176, 192, 200).

Page 31: ROUND is not a built in function in Commodore COMAL. Add this function yourself:

```
FUNC ROUND(NUMBER) CLOSED
```

```
    RETURN SGN(NUMBER)*INT(ABS(NUMBER)+.5)
```

```
ENDFUNC ROUND
```

Page 41: STATUS\$ is a keyword in Commodore COMAL. Change variable name to STATUS'

Page 66: RANDOM is not needed by Commodore COMAL. You may substitute DUMMY:=RND(0)

Page 70: FOR ... NEXT. The NEXT is converted into ENDFOR for you.

Page 72: Slightly different results due to precision level (also seen several other places)

Page 73, 135, 139: DOWNTD is not implemented. Use TO instead with a STEP -1

Page 75: Leading 0 in a decimal less than 1 is not printed.

Page 140: BACK is a keyword in C64 COMAL. Add an apostrophe to it, change it to BACK'

Page 142, 144,...: Substrings, use a colon (:) instead of a comma (,) for separator:

```
NAME$(5,6) Changes to: NAME$(5:6)
```

Page 164: CLEAR is not implemented. Use PRINT CHR\$(147) instead.

Page 175: RND is implemented to require one parameter: Use RND(0) instead.

Page 182: RIGHT is a keyword in C64 COMAL. Add an apostrophe, change to RIGHT'

Page 184: Functions are defined differently in STANDARD COMAL (including Commodore COMAL).

```
SHOWN: DEF FNSUM(X) Change to: FUNC SUM(X)
```

```
    FNSUM:=X+12
```

```
    RETURN X+12
```

```
ENDDEF FNSUM
```

```
ENDFUNC SUM
```

The value of the function is returned via the RETURN statement. (The book shows it being assigned to the DEF name).

Page 188: GLOBAL was changed to IMPORT in STANDARD COMAL. Version 0.14 does not implement it. However, all functions are NOT automatically CLOSED, and GLOBAL / IMPORT is not needed. You do have the option of CLOSED functions.

Page 209: VAL is not implemented. It can be user defined. See COMAL TODAY or COMAL HANDBOOK.

Page 226: PASS is a keyword. Add an apostrophe to variable PASS#, change to PASS'

Page 231: String array substring specifiers are kept separate from the index:

```
FROM: LISST$(COUNT#,1,POSITION#) Change to: LISST$(COUNT#)(1:POSITION#)
```

Page 236: Don't use file number 1, use file numbers 2-253.

Page 238: PRINT USING is available in C64 COMAL 0.14 (but not PET COMAL 0.14). But it only formats numbers, not strings.

Page 238: BUG in program: NUMBER and NUMBER# are two different variables, both cannot use the same name. Change NUMBER into NUM.

Page 238: INPUT FILE must be split up to input one variable at a time. Or use WRITE FILE and READ FILE instead of PRINT FILE and INPUT FILE to avoid this restriction.

Page 245: BUG in program: REQUIRED and REQUIRED\$ and cannot use same name. Change one.

Page 247: Random files: specify record length without the comma (also allow 2 bytes extra for use by the system as a string length counter):

```
FROM: RANDOM, 40 Change to: RANDOM 42
```

Page 249: WORD\$ does not need to be dimensioned.

Programs 119 and 120 can not be used: they request a file of 9999 records 22 2 characters long. There is not enough room on the disk for that.