STORY LINE

The adventure games that we are designing in this programming project are text-based — when the player enters a new location, the description and the possible exits must be printed to the screen. Here, we develop a utility that will allow us to format output to the screen.

As Digitaya and Haunted Forest are both text-based adventures, they use words to describe locations and events. Passing this information to the screen using PRINT statements can be inelegant. For example, a PRINT statement that exceeds the length of one screen line will carry onto the next line, often splitting in two words that fall across the end of the screen line. A laborious way to get around this problem would be to consider each PRINT statement in the program individually and 'manually' format the output so that words on the ends of lines were not split. If there were just a few occasions on which this had to be done then it would not be too much of a chore, but in an adventure game program this would have to be done a lot. The alternative is to design a routine that formats output for us. To use such a routine we should be able to pass the sentence we want to format to the routine via a string variable, and the routine should take care of the formatting and output.

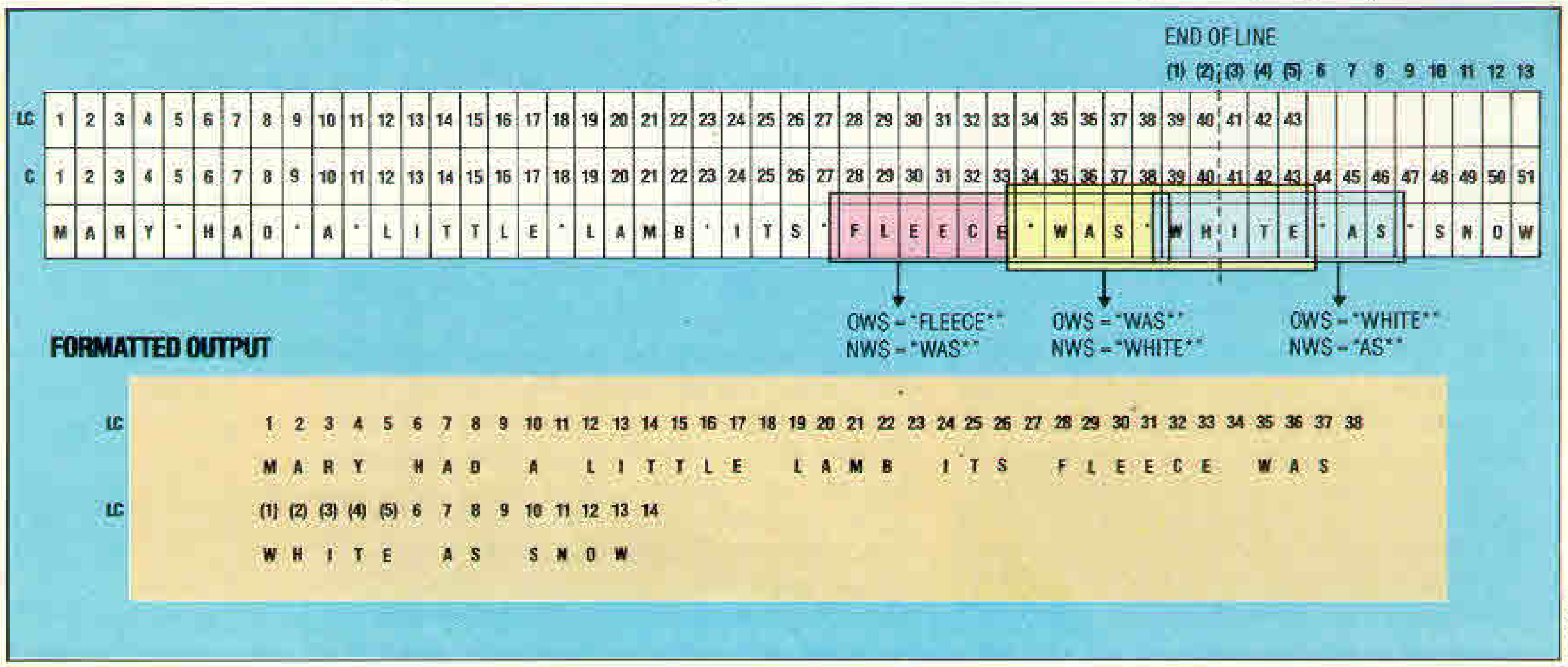
Digitaya and Haunted Forest both use a special routine to format their output, so before we continue to describe the game programming itself, let's look at how this routine works. Here is the listing from the Haunted Forest game.

```
5500 REM **** FORMAT OUTPUT S/R ****
5510 LC=0:     REM CHAR/LINE COUNTER
5520 OC=1:     REM OLD COUNT INITIAL VALUE
5530 OW$="":   REM OLD WORD  INITIAL VALUE
5540 LL=40:    REM LINE LENGTH
5550 SN$=SN$+" DUMMY "
5560 PRINT
5570 FOR C=1 TO LEN(SN$)
5580 LC=LC+1
5590 IF MID$(SN$,C,1)=" " THEN GOSUB5800
5600 NEXT C
5605 PRINT
5610 RETURN
5620 :
5800 REM ** END OF LINE CHECK S/R **
5810 NW$=MID$(SN$,OC,C-OC+1):REM NEW WORD
5820 IF LC<LL THENPRINTOW$;:GOTO5840
5830 PRINTOW$:LC=LEN(NW$)
5840 OC=C+1:OW$=NW$
5850 RETURN
```

The routine first of all searches through the sentence, passed to it by the variable SN$, for a space character. Whenever a space is found, the subroutine at line 6020 is called. This subroutine carries out several important tasks. Using OC to indicate the beginning of a word (initially, OC is set to 1), and C to keep track of the current character under examination, the word encountered before the space can be isolated using MID$ and stored in NW$ (for 'New Word'). Before the contents of NW$ are output to the screen, they will be transferred to OW$.

A line counter, LC, is used to count how many characters have been used so far on any given line, and this is checked at line 6040 to ensure that it is less than the permitted line length, LL. If this is the case, then OW$ is PRINTed, followed by a semi-colon to ensure that any output that follows will continue on the same line. If LC does exceed LL then, again, OW$ is PRINTed, but this time omitting the semi-colon (and thus, any output that follows

Formation Display
The screen formatting routine used by Haunted Forest and Digitaya allows any screen output to be formatted so that word breaks do not occur. By using variables OW$ and NW$ the routine 'looks' one word ahead of the word about to be printed. If the next word were to exceed the designated line length, the semi-colon supressing a carriage return is ommited, causing a new line to be started



END OF LINE
(1) (2) (3) (4) (5) 6 7 8 9 10 11 12 13
LC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
M A R Y • H A D • A • L I T T L E • L A M B • I T S • F L E E C E • W A S • W H I T E • A S • S N O W
OW$ = "FLEECE" NW$ = "WAS"
OW$ = "WAS" NW$ = "WHITE"
OW$ = "WHITE" NW$ = "AS"
FORMATTED OUTPUT
LC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
M A R Y H A D A L I T T L E L A M B I T S F L E E C E W A S
LC (1) (2) (3) (4) (5) 6 7 8 9 10 11 12 13 14
W H I T E A S S N O W
LIZ DIXON