

Sorcerer's Apprentice, Part 4
by Wayne Schotten

If you're interested in programming, whether a novice or a pro, I'd like to hear from you. This column is place for all to share what we know or what we'd like to know. All Apple /// languages are fair game. Send contribution, questions or suggestions to me at Precision Audio, Pier 26, San Francisco 94105 or 415-541-0960.

This column and the related program codefiles are available through the ATUNC library. This will SAVE YOU THE TEDIUM AND time of typing the programs printed here, WHICH YOU CAN USE FOR DEVELOPING PROGRAMS OF YOUR OWN TO CONTRIBUTE TO THIS COLUMN.

We should have printed a hookup diagram for the Morse Code Decoder by Clyde Kirlin of last month's column. Here it is, so you may hook the output of the demodulator into the gameport of the A ///. (see inserted diagram). (NOTE FOR WAP READERS: THIS DIAGRAM WAS NOT INCLUDED IN THE ATUNC DISK FILE. SORRY.)

Animated Graphics by Bill Smith

One of the best ways to learn programming is to just play with it. Bill Smith has contributed an interesting set of programs, interesting because they produce animated graphics on the text screen. Thank you, Bill.

```
1  REM **** PECULIAR ****
10  REM
21  PRINT:PRINT:PRINT:PRINT:INVERSE
23  PRINT:PRINT:PRINT:PRINT:NORMAL
25  WINDOW 20,10 TO 60,14
27  PRINT:PRINT:PRINT:PRINT:INVERSE
34  PRINT:PRINT:PRINT:PRINT:NORMAL
35  WINDOW 1,1 TO 80,24
40  GOTO 1

1  REM **** PECULIAR2 ****
5  REM
10  REM
21  PPRINT:PRINT:PRINT:PRINT:INVERSE
23  PRINT:PRINT:PRINT:PRINT:NORMAL
25  WINDOW 1,1 TO 40,24
27  PRINT:PRINT:PRINT:PRINT:INVERSE
33  PRINT:PRINT:PRINT:PRINT:NORMAL
35  WINDOW 41,1 TO 80,24
40  GOTO 5

1  REM **** PECULIAR3 ****
5  REM
10  REM
21  PRINT:PRINT:PRINT:PRINT:INVERSE
23  PRINT:PRINT:PRINT:PRINT:NORMAL
25  WINDOW 1,1 TO 40,12
27  PRINT:PRINT:PRINT:PRINT:INVERSE
33  PRINT:PRINT:PRINT:PRINT:NORMAL
35  WINDOW 41,1 TO 80,12
121 PRINT:PRINT:PRINT:PRINT:INVERSE
```

```
123 PRINT:PRINT:PRINT:PRINT:NORMAL
200 WINDOW 1,13 TO 40,24
221 PRINT:PRINT:PRINT:PRINT:INVERSE
223 PRINT:PRINT:PRINT:PRINT:NORMAL
240 WINDOW 41,13 TO 80,24
250 GOTO 5
```

```
1 REM **** PECULIAR3 ****
5 REM
10 REM
21 PRINT:PRINT:PRINT
22 INVERSE
23 PRINT:PRINT:PRINT
24 NORMAL
25 WINDOW 1,1 TO 40,12
27 PRINT:PRINT:PRINT
28 INVERSE
33 PRINT:PRINT:PRINT
34 NORMAL
35 WINDOW 41,1 TO 80,12
121 PRINT:PRINT:PRINT
122 INVERSE
123 PRINT:PRINT:PRINT
124 NORMAL
200 WINDOW 1,13 TO 40,24
221 PRINT:PRINT:PRINT
222 INVERSE
223 PRINT:PRINT:PRINT
224 NORMAL
240 WINDOW 41,13 TO 80,24
250 GOTO 5
```

```
1 REM **** PECULIAR5 ****
5 REM
10 REM
21 PRINT:PRINT:PRINT:PRINT:INVERSE
23 PRINT:PRINT:PRINT:PRINT:NORMAL
25 WINDOW 1,1 TO 20,24
27 PRINT:PRINT:PRINT:PRINT:INVERSE
33 PRINT:PRINT:PRINT:PRINT:NORMAL
35 WINDOW 21,1 TO 40,24
210 PRINT:PRINT:PRINT:PRINT:INVERSE
230 PRINT:PRINT:PRINT:PRINT:NORMAL
250 WINDOW 41,1 TO 60,24
270 PRINT:PRINT:PRINT:PRINT:INVERSE
330 PRINT:PRINT:PRINT:PRINT:NORMAL
350 WINDOW 61,1 TO 80,24
710 PRINT:PRINT:PRINT:PRINT:INVERSE
730 PRINT:PRINT:PRINT:PRINT:NORMAL
750 WINDOW 61,1 TO 80,24
770 PRINT:PRINT:PRINT:PRINT:INVERSE
830 PRINT:PRINT:PRINT:PRINT:NORMAL
850 WINDOW 41,1 TO 60,24
7100 PRINT:PRINT:PRINT:PRINT:INVERSE
7300 PRINT:PRINT:PRINT:PRINT:NORMAL
7500 WINDOW 21,1 TO 40,24
7700 PRINT:PRINT:PRINT:PRINT:INVERSE
8300 PRINT:PRINT:PRINT:PRINT:NORMAL
8500 WINDOW 1,1 TO 20,24
9000 GOTO 5
```

```

1  REM **** PECULIAR6 ****
5  REM
10 REM
21 PRINT:PRINT:PRINT:PRINT:INVERSE
25 WINDOW 1,1 TO 20,24
33 PRINT:PRINT:PRINT:PRINT:NORMAL
35 WINDOW 21,1 TO 40,24
210 PRINT:PRINT:PRINT:PRINT:INVERSE
250 WINDOW 41,1 TO 60,24
330 PRINT:PRINT:PRINT:PRINT:NORMAL
350 WINDOW 61,1 TO 80,24
710 PRINT:PRINT:PRINT:PRINT:INVERSE
750 WINDOW 61,1 TO 80,24
830 PRINT:PRINT:PRINT:PRINT:NORMAL
850 WINDOW 41,1 TO 60,24
7100 PRINT:PRINT:PRINT:PRINT:INVERSE
7500 WINDOW 21,1 TO 40,24
8300 PRINT:PRINT:PRINT:PRINT:NORMAL
8500 WINDOW 1,1 TO 20,24
9000 GOTO 5

```

```

1  REM **** PECULIAR6A.X ****
5  REM
10 REM: 1ST GO ROUND -----
251  PRINT:PRINT:PRINT:INVERSE
252  WINDOW 1,1 TO 10,24
253  PRINT:PRINT:PRINT:NORMAL
254  WINDOW 11,1 TO 20,24
255  PRINT:PRINT:PRINT:INVERSE
260  WINDOW 21,1 TO 30,24
330  PRINT:PRINT:PRINT:NORMAL
350  WINDOW 31,1 TO 40,24
710  PRINT:PRINT:PRINT:INVERSE
750  WINDOW 41,1 TO 50,24
830  PRINT:PRINT:PRINT:NORMAL
850  WINDOW 51,1 TO 60,24
7100  PRINT:PRINT:PRINT:INVERSE
7500  WINDOW 61,1 TO 70,24
8300  PRINT:PRINT:PRINT:NORMAL
8500  WINDOW 71,1 TO 80,24
9000  PRINT:PRINT:PRINT:INVERSE
9100  WINDOW 71,1 TO 80,24
9300  PRINT:PRINT:PRINT:NORMAL
9500  WINDOW 61,1 TO 70,24
10300  PRINT:PRINT:PRINT:INVERSE
10500  WINDOW 51,1 TO 60,24
10800  PRINT:PRINT:PRINT:NORMAL
11800  WINDOW 41,1 TO 50,24
12000  PRINT:PRINT:PRINT:INVERSE
13500  WINDOW 31,1 TO 40,24
13800  PRINT:PRINT:PRINT:NORMAL
14500  WINDOW 21,1 TO 30,24
14750  PRINT:PRINT:PRINT:INVERSE
15500  WINDOW 11,1 TO 20,24
15750  PRINT:PRINT:PRINT:NORMAL
15800  WINDOW 1,1 TO 10,24
20000  REM: 2ND GO ROUND -----
20010  PRINT:PRINT:PRINT:INVERSE
20020  WINDOW 1,1 TO 10,24
20030  PRINT:PRINT:PRINT:NORMAL
20040  WINDOW 11,1 TO 20,24

```

```
20050 PRINT:PRINT:PRINT:INVERSE
20060 WINDOW 21,1 TO 30,24
20070 PRINT:PRINT:PRINT:NORMAL
20080 WINDOW 31,1 TO 40,24
20090 PRINT:PRINT:PRINT:INVERSE
20100 WINDOW 41,1 TO 50,24
20110 PRINT:PRINT:PRINT:NORMAL
20120 WINDOW 51,1 TO 60,24
20130 PRINT:PRINT:PRINT:INVERSE
20140 WINDOW 61,1 TO 70,24
20150 PRINT:PRINT:PRINT:NORMAL
20160 WINDOW 71,1 TO 80,24
20170 PRINT:PRINT:PRINT:INVERSE
20180 WINDOW 71,1 TO 80,24
20190 PRINT:PRINT:PRINT:NORMAL
20200 WINDOW 61,1 TO 70,24
20210 PRINT:PRINT:PRINT:INVERSE
20220 WINDOW 51,1 TO 60,24
20230 PRINT:PRINT:PRINT:NORMAL
20240 WINDOW 41,1 TO 50,24
20250 PRINT:PRINT:PRINT:INVERSE
20260 WINDOW 31,1 TO 40,24
20270 PRINT:PRINT:PRINT:NORMAL
20280 WINDOW 21,1 TO 30,24
20290 PRINT:PRINT:PRINT:INVERSE
20300 WINDOW 11,1 TO 20,24
20310 PRINT:PRINT:PRINT:NORMAL
20320 WINDOW 1,1 TO 10,24
21000 REM: 3RD GO ROUND -----
21010 PRINT:PRINT:PRINT:INVERSE
21020 WINDOW 1,1 TO 10,24
21030 PRINT:PRINT:PRINT:NORMAL
21040 WINDOW 11,1 TO 20,24
21050 PRINT:PRINT:PRINT:INVERSE
21060 WINDOW 21,1 TO 30,24
21070 PRINT:PRINT:PRINT:NORMAL
21080 WINDOW 31,1 TO 40,24
21090 PRINT:PRINT:PRINT:INVERSE
21100 WINDOW 41,1 TO 50,24
21110 PRINT:PRINT:PRINT:NORMAL
21120 WINDOW 51,1 TO 60,24
21130 PRINT:PRINT:PRINT:INVERSE
21140 WINDOW 61,1 TO 70,24
21150 PRINT:PRINT:PRINT:NORMAL
21160 WINDOW 71,1 TO 80,24
21170 PRINT:PRINT:PRINT:INVERSE
21180 WINDOW 71,1 TO 80,24
21190 PRINT:PRINT:PRINT:NORMAL
21200 WINDOW 61,1 TO 70,24
21210 PRINT:PRINT:PRINT:INVERSE
21220 WINDOW 51,1 TO 60,24
21230 PRINT:PRINT:PRINT:NORMAL
21240 WINDOW 41,1 TO 50,24
21250 PRINT:PRINT:PRINT:INVERSE
21260 WINDOW 31,1 TO 40,24
21270 PRINT:PRINT:PRINT:NORMAL
21280 WINDOW 21,1 TO 30,24
21290 PRINT:PRINT:PRINT:INVERSE
21300 WINDOW 11,1 TO 20,24
21310 PRINT:PRINT:PRINT:NORMAL
21320 WINDOW 1,1 TO 10,24
```

```

22000 REM: 4TH GO ROUND -----
22010 PRINT:PRINT:PRINT:INVERSE
22020 WINDOW 1,1 TO 10,24
22030 PRINT:PRINT:PRINT:NORMAL
22040 WINDOW 11,1 TO 20,24
22050 PRINT:PRINT:PRINT:INVERSE
22060 WINDOW 21,1 TO 30,24
22070 PRINT:PRINT:PRINT:NORMAL
22080 WINDOW 31,1 TO 40,24
22090 PRINT:PRINT:PRINT:INVERSE
22100 WINDOW 41,1 TO 50,24
22110 PRINT:PRINT:PRINT:NORMAL
22120 WINDOW 51,1 TO 60,24
22130 PRINT:PRINT:PRINT:INVERSE
22140 WINDOW 61,1 TO 70,24
22150 PRINT:PRINT:PRINT:NORMAL
22160 WINDOW 71,1 TO 80,24
22170 PRINT:PRINT:PRINT:INVERSE
22180 WINDOW 71,1 TO 80,24
22190 PRINT:PRINT:PRINT:NORMAL
22200 WINDOW 61,1 TO 70,24
22210 PRINT:PRINT:PRINT:INVERSE
22220 WINDOW 51,1 TO 60,24
22230 PRINT:PRINT:PRINT:NORMAL
22240 WINDOW 41,1 TO 50,24
22250 PRINT:PRINT:PRINT:INVERSE
22260 WINDOW 31,1 TO 40,24
22270 PRINT:PRINT:PRINT:NORMAL
22280 WINDOW 21,1 TO 30,24
22290 PRINT:PRINT:PRINT:INVERSE
22300 WINDOW 11,1 TO 20,24
22310 PRINT:PRINT:PRINT:NORMAL
22320 WINDOW 1,1 TO 10,24
22400 Number=1
22410 Number=Number+1
22420 IF Number<9 THEN 5
22430 IF Number=9 THEN GOTO 22600
22600 TEXT:HOME: PRINT: PRINT
22700 INVERSE: PRINT: PRINT: PRINT
22710 PRINT CHR$(16):PRINT"HOW ABOUT          THIS?!!"
22715 FOR WAIT=1 TO 200:NEXT WAIT
22720 NORMAL: PRINT: PRINT: PRINT
22730 PRINT CHR$(04)
22740 INVERSE:HOME: PRINT:PRINT
22750 NORMAL:PRINT:PRINT: PRINT
22900 END

```

```

1 REM **** PECULIAR6A.SLOW ****
5 REM
10 REM
21 PRINT:PRINT:PRINT:PRINT:INVERSE
22 FOR WAIT=1 TO 300
24 NEXT WAIT
25 WINDOW 1,1 TO 20,24
30 PRINT:PRINT:PRINT:PRINT:NORMAL
32 FOR WAIT=1 TO 30
33 NEXT WAIT
35 WINDOW 21,1 TO 40,24
210 PRINT:PRINT:PRINT:PRINT:INVERSE
220 FOR WAIT=1 TO 30
221 NEXT WAIT

```

```

250 WINDOW 41,1 TO 60,24
330 PRINT:PRINT:PRINT:PRINT:NORMAL
335 FOR WAIT=1 TO 30
336 NEXT WAIT
350 WINDOW 61,1 TO 80,24
710 PRINT:PRINT:PRINT:PRINT:INVERSE
725 FOR WAIT=1 TO 300
726 NEXT WAIT
750 WINDOW 61,1 TO 80,24
830 PRINT:PRINT:PRINT:PRINT:NORMAL
835 FOR WAIT=1 TO 30
836 NEXT WAIT
850 WINDOW 41,1 TO 60,24
7100 PRINT:PRINT:PRINT:PRINT:INVERSE
7200 FOR WAIT=1 TO 30
7201 NEXT WAIT
7500 WINDOW 21,1 TO 40,24
8300 PRINT:PRINT:PRINT:PRINT:NORMAL
8400 FOR WAIT=1 TO 30
8400 NEXT WAIT
8500 WINDOW 1,1 TO 20,24
9000 GOTO 5

```

```

1   REM **** PECULIAR6B.SLOW ****
5   REM
10  REM
21  PRINT:PRINT:PRINT:PRINT:INVERSE
22  FOR WAIT=1 TO 500
24  NEXT WAIT
25  WINDOW 1,1 TO 20,24
30  PRINT:PRINT:PRINT:PRINT:NORMAL
32  FOR WAIT=1 TO 100
33  NEXT WAIT
35  WINDOW 21,1 TO 40,24
210 PRINT:PRINT:PRINT:PRINT:INVERSE
220 FOR WAIT=1 TO 100
225 NEXT WAIT
250 WINDOW 41,1 TO 60,24
330 PRINT:PRINT:PRINT:PRINT:NORMAL
335 FOR WAIT=1 TO 100
336 NEXT WAIT
350 WINDOW 61,1 TO 80,24
710 PRINT:PRINT:PRINT:PRINT:INVERSE
725 FOR WAIT=1 TO 500
726 NEXT WAIT
750 WINDOW 61,1 TO 80,24
830 PRINT:PRINT:PRINT:PRINT:NORMAL
835 FOR WAIT=1 TO 100
836 NEXT WAIT
850 WINDOW 41,1 TO 60,24
7100 PRINT:PRINT:PRINT:PRINT:INVERSE
7200 FOR WAIT=1 TO 100
7201 NEXT WAIT
7500 WINDOW 21,1 TO 40,24
8300 PRINT:PRINT:PRINT:PRINT:NORMAL
8400 FOR WAIT=1 TO 100
8401 NEXT WAIT
8500 WINDOW 1,1 TO 20,24
9000 GOTO 5 -----

```