

The Workshop Answers Back

The programming exercises set in the last instalment (see page 516) all resembled the Telephone Numbers example program, in monitoring the user port and checking its state against that of some reference value. We give workable, but by no means unique, solutions.

1) Burglar Alarm

```
10 REM BBC VERSION 1.1
20 DATREG=&FEE0:DDR=&FE2
30 DDR=0:PODREG=127
40 REPEAT
50 PRINT "ALL'S WELL"
60 ALARM=PODREG
70 UNTIL ALARM<>255
80 PRINT "ALARM"
90 FOR PIN=0 TO 7
100 IF (ALARM AND 2*PIN)=0,
    THEN PRINT "ALARM ON SWITCH NO."PIN
110 NEXT
120 END
READY.
```

2) Pulse Count (i)

```
10 REM BBC VERSION 1.2
20 DATREG=&FEE0:DDR=&FE2
30 DDR=0:PODREG=127
40 KOUNT=0:REM INIT COUNT
50 TIME=0:REM INIT TIME
60 REPEAT
70 REPEAT
80 UNTIL PODREG<>255
90 KOUNT=KOUNT+1
100 UNTIL TIME > 6000:REM 1 MIN
110 PRINT "PULSES="KOUNT
120 END
READY.
```

3) Pulse Count (ii)

```
10 REM BBC VERSION 1.3
20 DATREG=&FEE0:DDR=&FE2
30 DIM C(8)
40 DDR=0:TIME=0
50 REPEAT
60 FOR N=0 TO 7
70 C(N)=C(N)+NOT(PODREG AND(2*N))
80 NEXT N
90 UNTIL TIME>6000
100 FOR N=0 TO 7
110 PRINT "LINE"=C(N)
120 NEXT N
130 END
```

4) Combination Lock

```
10 REM BBC VERSION 1.4
20 DATREG=&FEE0:DDR=&FE2:FLAG=1
30 DDR=15:REM LINES 0-3 INPUT
40 DIM C(3)
50 REM CODE=359
60 C(1)=3:C(2)=5:C(3)=9
70 FOR N=1 TO 3
80 A#=GET#:REM AWAIT KEYPRESS
90 NEXT N
100 IF FLAG=1 THEN PRINT "UNLOCKED"
    ELSE PRINT "WRONG COMBINATION"
110 END
```

```
90 IF FLAG=1 THEN PRINT "WRONG COMBINATION":END
80 NEXT K
70 IF PEEK(DATREG)<>C(K) THEN FLAG=1
65 PRINT A#
60 GET A#:IF A#="" THEN 60:REM AWAIT KEY
55 PRINT"ENTER A DIGIT"
50 FOR K=1 TO 3
40 C(1)=1:C(2)=2:C(3)=4:REM CODE 124
30 POKEDDR,0:REM LINES 0-3 INPUT
20 DDR=5579:DATREG=5577
10 REM CBM64 VERSION 1.4
```

5) Change Colour

```
10 REM BBC VERSION 1.5
20 MODE3
30 DATREG=&FEE0:DDR=&FE2
40 DDR=128:REM ALL INPUT BUT 07
45 PODREG=255
50 A#=GET#:REM AWAIT KEYPRESS
60 SCOL=PODREG:REM BACKGROUND127
70 GCOL=SCOL:REM CHANGE SCREEN COLOUR
80 CLG:REM CLEAR GRAPHICS SCREEN
90 END
```

```
20 DDR=5579:DATREG=5577
30 POKEDDR,0:REM ALL INPUT
40 GET A#:IF A#="" THEN 40
50 SCOL=PEEK(DATREG)
60 POKESCOL,SCOL
70 END
```