Panel (1):

Parallel Port 1 — Port 1
P1: 0xFF — Bits 7..0 all checked
Pins: 0xFF — all checked

Parallel Port 0 — Port 0
P0: 0xFF — all checked
Pins: 0x00 — none checked

Memory 2 — d:0x30
```
D:0x30: 00
D:0x31: 00
D:0x32: 00
D:0x33: 00
D:0x34: 00
D:0x35: 00
D:0x36: 00
D:0x37: 00
D:0x38: 00
```

(1) at the beginning all ports are set **FFh**

Panel (2):

Parallel Port 1 — Port 1
P1: 0x0F
Pins: 0x0F

Parallel Port 0 — Port 0
P0: 0xFF
Pins: 0x00

Memory 2 — d:0x30
```
D:0x30: 00
D:0x31: 00
D:0x32: 00
D:0x33: 00
D:0x34: 00
D:0x35: 00
D:0x36: 00
D:0x37: 00
D:0x38: 00
```
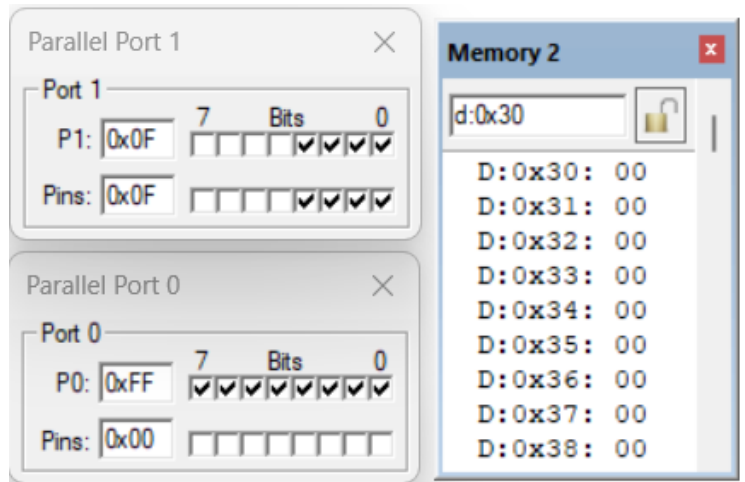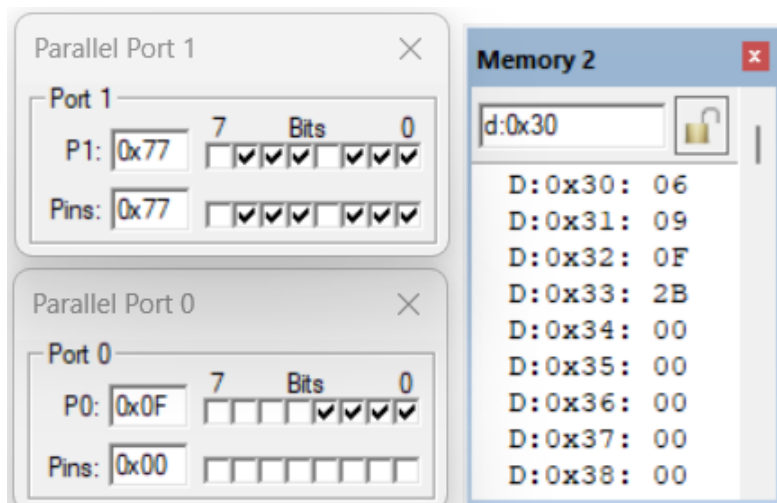
(2) Columns must read **1111b**, indicating no active key.

Panel (3):

Parallel Port 1 — Port 1
P1: 0xBD
Pins: 0xBD

Parallel Port 0 — Port 0
P0: 0x39
Pins: 0x00

Memory 2 — d:0x30
```
D:0x30: 09
D:0x31: 00
D:0x32: 00
D:0x33: 39
D:0x34: 00
D:0x35: 00
D:0x36: 00
D:0x37: 00
D:0x38: 00
```
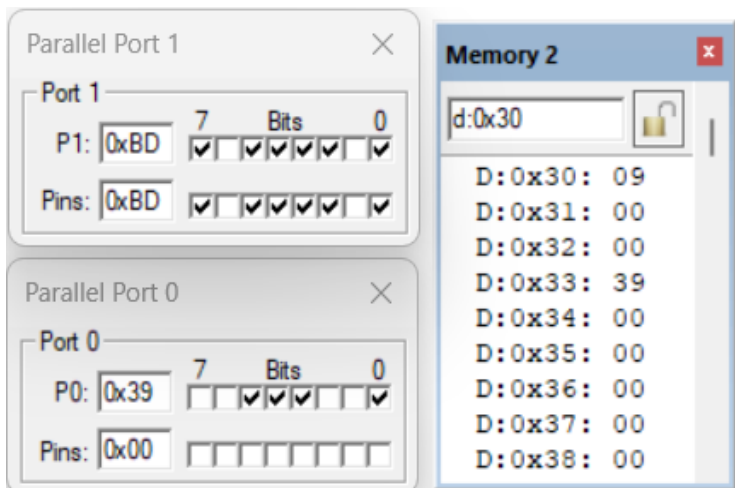
(3) Once both active row and column are found, the lookup table is accessed.
(here row_2 and column_1 i.e 9)

Panel (4):

Parallel Port 1 — Port 1
P1: 0xDB
Pins: 0xDB

Parallel Port 0 — Port 0
P0: 0x36
Pins: 0x00

Memory 2 — d:0x30
```
D:0x30: 06
D:0x31: 09
D:0x32: 00
D:0x33: 36
D:0x34: 00
D:0x35: 00
D:0x36: 00
D:0x37: 00
D:0x38: 00
```
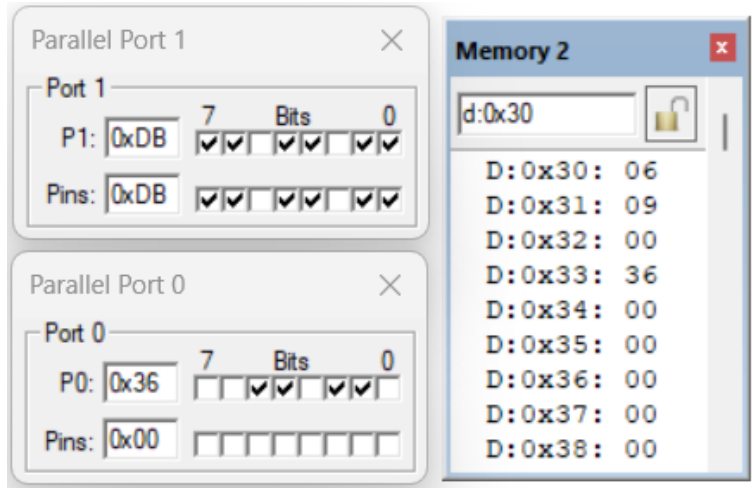
(4) then goes back to main for another key to be pressed
(here row_1 and column_2 i.e 6)

Panel (5):

Parallel Port 1 — Port 1
P1: 0x77
Pins: 0x77

Parallel Port 0 — Port 0
P0: 0x0F
Pins: 0x00

Memory 2 — d:0x30
```
D:0x30: 06
D:0x31: 09
D:0x32: 0F
D:0x33: 2B
D:0x34: 00
D:0x35: 00
D:0x36: 00
D:0x37: 00
D:0x38: 00
```

(5) Shows how memory addresses 30h and 31h store last two digits.
When '+' is pressed, the addition is done and result stored at address 32h.

(here 6h + 9h = 0Fh)
P0 shows the sum in binary