BDD

B11115032 陳尚澤

1. PLA1 (4個輸入)

.i 4

.o 1

.ilb a b c d

.ob F

.p 8

0000 1

0011 1

0110 1

1100 1

0101 1

1010 1

1001 1

1111 1

.e

表格化簡：

-----|----------|----------|----------|------------

id | variable | elseEdge | thenEdge | comment

-----|----------|----------|----------|------------

0 | 0 | -1 | -1 | Boolean 0

1 | a | 2 | 3 |

2 | b | 4 | 5 |

3 | b | 6 | 7 |

4 | c | 8 | 9 |

5 | c | 9 | 8 |

6 | c | 9 | 8 |

7 | c | 8 | 9 |

8 | d | 16 | 0 |

9 | d | 0 | 16 |

10 | d | 0 | 16 | redundant

11 | d | 16 | 0 | redundant

12 | d | 0 | 16 | redundant

13 | d | 16 | 0 | redundant

14 | d | 16 | 0 | redundant

15 | d | 0 | 16 | redundant

16 | 1 | -1 | -1 | Boolean 1

-----|----------|----------|----------|------------

------|----------|----------|----------|-------------

id | variable | elseEdge | thenEdge | comment

------|----------|----------|----------|-------------

0 | 0 | -1 | -1 | Boolean 0

1 | a | 2 | 3 |

2 | b | 4 | 5 |

3 | b | 5 | 4 |

4 | c | 8 | 9 |

5 | c | 9 | 8 |

6 | c | 9 | 8 | redundant

7 | c | 8 | 9 | redundant

8 | d | 16 | 0 |

9 | d | 0 | 16 |

10 | d | 0 | 16 | redundant

11 | d | 16 | 0 | redundant

12 | d | 0 | 16 | redundant

13 | d | 16 | 0 | redundant

14 | d | 16 | 0 | redundant

15 | d | 0 | 16 | redundant

16 | 1 | -1 | -1 | Boolean 1

------|----------|----------|----------|-------------

DOT檔案:

digraph BDD {

{rank=same 1 }

{rank=same 2 3 }

{rank=same 4 5 }

{rank=same 8 9 }

0 [label="0", shape=box]

1 [label="a"]

2 [label="b"]

3 [label="b"]

4 [label="c"]

5 [label="c"]

8 [label="d"]

9 [label="d"]

16 [label="1", shape=box]

1 -> 2 [label="0", style=dotted]

1 -> 3 [label="1", style=solid]

2 -> 4 [label="0", style=dotted]

2 -> 5 [label="1", style=solid]

3 -> 5 [label="0", style=dotted]

3 -> 4 [label="1", style=solid]

4 -> 8 [label="0", style=dotted]

4 -> 9 [label="1", style=solid]

5 -> 9 [label="0", style=dotted]

5 -> 8 [label="1", style=solid]

8 -> 16 [label="0", style=dotted]

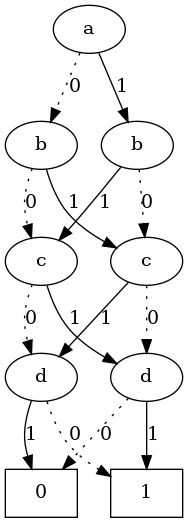
8 -> 0 [label="1", style=solid]

9 -> 0 [label="0", style=dotted]

9 -> 16 [label="1", style=solid]

}

結果圖檔：



1. PLA2 (5個輸入)

.i 5

.o 1

.ilb a b c d e

.ob F

.p 4

1-1-1 1

-0-0- 1

0-0-0 1

-1-1- 1

.e

表格化簡：

| id | variable | elseEdge | thenEdge | comment |

|------|----------|----------|----------|-------------|

| 0 | 0 | -1 | -1 | Boolean 0 |

| 1 | a | 2 | 3 | |

| 2 | b | 4 | 5 | |

| 3 | b | 6 | 7 | |

| 4 | c | 8 | 9 | |

| 5 | c | 10 | 11 | |

| 6 | c | 12 | 13 | |

| 7 | c | 14 | 15 | |

| 8 | d | 32 | 17 | |

| 9 | d | 32 | 0 | |

| 10 | d | 17 | 32 | |

| 11 | d | 0 | 32 | |

| 12 | d | 32 | 0 | |

| 13 | d | 32 | 27 | |

| 14 | d | 0 | 32 | |

| 15 | d | 27 | 32 | |

| 16 | e | 32 | 32 | redundant |

| 17 | e | 32 | 0 | |

| 18 | e | 32 | 32 | redundant |

| 19 | e | 0 | 0 | redundant |

| 20 | e | 32 | 0 | redundant |

| 21 | e | 32 | 32 | redundant |

| 22 | e | 0 | 0 | redundant |

| 23 | e | 32 | 32 | redundant |

| 24 | e | 32 | 32 | redundant |

| 25 | e | 0 | 0 | redundant |

| 26 | e | 32 | 32 | redundant |

| 27 | e | 0 | 32 | |

| 28 | e | 0 | 0 | redundant |

| 29 | e | 32 | 32 | redundant |

| 30 | e | 0 | 32 | redundant |

| 31 | e | 32 | 32 | redundant |

| 32 | 1 | -1 | -1 | Boolean 1 |

| id | variable | elseEdge | thenEdge | comment |

|------|----------|----------|----------|-------------|

| 0 | 0 | -1 | -1 | Boolean 0 |

| 1 | a | 2 | 3 | |

| 2 | b | 4 | 5 | |

| 3 | b | 6 | 7 | |

| 4 | c | 8 | 9 | |

| 5 | c | 10 | 11 | |

| 6 | c | 9 | 13 | |

| 7 | c | 11 | 15 | |

| 8 | d | 32 | 17 | |

| 9 | d | 32 | 0 | |

| 10 | d | 17 | 32 | |

| 11 | d | 0 | 32 | |

| 12 | d | 32 | 0 | redundant |

| 13 | d | 32 | 27 | |

| 14 | d | 0 | 32 | redundant |

| 15 | d | 27 | 32 | |

| 16 | e | 32 | 32 | redundant |

| 17 | e | 32 | 0 | |

| 18 | e | 32 | 32 | redundant |

| 19 | e | 0 | 0 | redundant |

| 20 | e | 32 | 0 | redundant |

| 21 | e | 32 | 32 | redundant |

| 22 | e | 0 | 0 | redundant |

| 23 | e | 32 | 32 | redundant |

| 24 | e | 32 | 32 | redundant |

| 25 | e | 0 | 0 | redundant |

| 26 | e | 32 | 32 | redundant |

| 27 | e | 0 | 32 | |

| 28 | e | 0 | 0 | redundant |

| 29 | e | 32 | 32 | redundant |

| 30 | e | 0 | 32 | redundant |

| 31 | e | 32 | 32 | redundant |

| 32 | 1 | -1 | -1 | Boolean 1 |

DOT檔案:

digraph BDD {

{rank=same 1 }

{rank=same 2 3 }

{rank=same 4 5 6 7 }

{rank=same 8 9 10 11 13 15 }

{rank=same 17 27 }

0 [label="0", shape=box]

1 [label="a"]

2 [label="b"]

3 [label="b"]

4 [label="c"]

5 [label="c"]

6 [label="c"]

7 [label="c"]

8 [label="d"]

9 [label="d"]

10 [label="d"]

11 [label="d"]

13 [label="d"]

15 [label="d"]

17 [label="e"]

27 [label="e"]

32 [label="1", shape=box]

1 -> 2 [label="0", style=dotted]

1 -> 3 [label="1", style=solid]

2 -> 4 [label="0", style=dotted]

2 -> 5 [label="1", style=solid]

3 -> 6 [label="0", style=dotted]

3 -> 7 [label="1", style=solid]

4 -> 8 [label="0", style=dotted]

4 -> 9 [label="1", style=solid]

5 -> 10 [label="0", style=dotted]

5 -> 11 [label="1", style=solid]

6 -> 9 [label="0", style=dotted]

6 -> 13 [label="1", style=solid]

7 -> 11 [label="0", style=dotted]

7 -> 15 [label="1", style=solid]

8 -> 32 [label="0", style=dotted]

8 -> 17 [label="1", style=solid]

9 -> 32 [label="0", style=dotted]

9 -> 0 [label="1", style=solid]

10 -> 17 [label="0", style=dotted]

10 -> 32 [label="1", style=solid]

11 -> 0 [label="0", style=dotted]

11 -> 32 [label="1", style=solid]

13 -> 32 [label="0", style=dotted]

13 -> 27 [label="1", style=solid]

15 -> 27 [label="0", style=dotted]

15 -> 32 [label="1", style=solid]

17 -> 32 [label="0", style=dotted]

17 -> 0 [label="1", style=solid]

27 -> 0 [label="0", style=dotted]

27 -> 32 [label="1", style=solid]

}

結果圖檔：

