

B10402123 葉澤賢

Digital logic design homework3: Exact Boolean Minimization

5variables: $F = ab'de' + acde + ade + ab'c'de + ab'cde$

6variables: $F = ab'cdf + b'c'de'f + ab'c'ef + a'b'c'd'e' + abc'd'e'f + cde' + abcd'e'f' + ce$

7variables: $F = a'cde'g' + cd'fg + a'b'ce'd'g + a'bef'g + ab'c'defg + ab'd'e' + abc'e'f$

5variables:

```
e.pla
1  .i 5
2  .o 1
3  .ilb a b c d e
4  .ob e
5  .p 5
6  10-10 1
7  1-111 1
8  1--11 1
9  10011 1
10 10111 1
11 .e
12
```

5variables output:

```
Digital_homework2 > e output_e.pla
1  .i 5
2  .o 1
3  .ob output
4  .p 8
5  10-1- 1
6  10-1- 1
7  10-1- 1
8  10-1- 1
9  1--11 1
10 1--11 1
11 1--11 1
12 1--11 1
13 .e
```

6variables:

```
≡ f.pla
1  .i 6
2  .o 1
3  .ilb a b c d e f
4  .ob f
5  .p 8
6  1011-1 1
7  -00101 1
8  100-11 1
9  00000- 1
10 110001 1
11 --110- 1
12 111000 1
13 --1-1- 1
14 .e
15
```

6variables output:

```
Digital_homework2 > ≡ output_f.pla
1  .i 6
2  .o 1
3  .ob output
4  .p 3
5  1011-0 1
6  1-1100 1
7  10110- 1
8  .e
```

7variables:

```
≡ g.pla
1  .i 7
2  .o 1
3  .ilb a b c d f g
4  .ob F
5  .p 7
6  0-110-0 1
7  --10-11 1
8  001-001 1
9  01--101 1
10 1001111 1
11 10-00-- 1
12 110-01- 1
13 .e
```

7variables output:

```
Digital_homework2 > ≡ output_g.pla
1  .i 7
2  .o 1
3  .ob output
4  .p 2
5  1010001 1
6  0100101 1
7  .e
```