

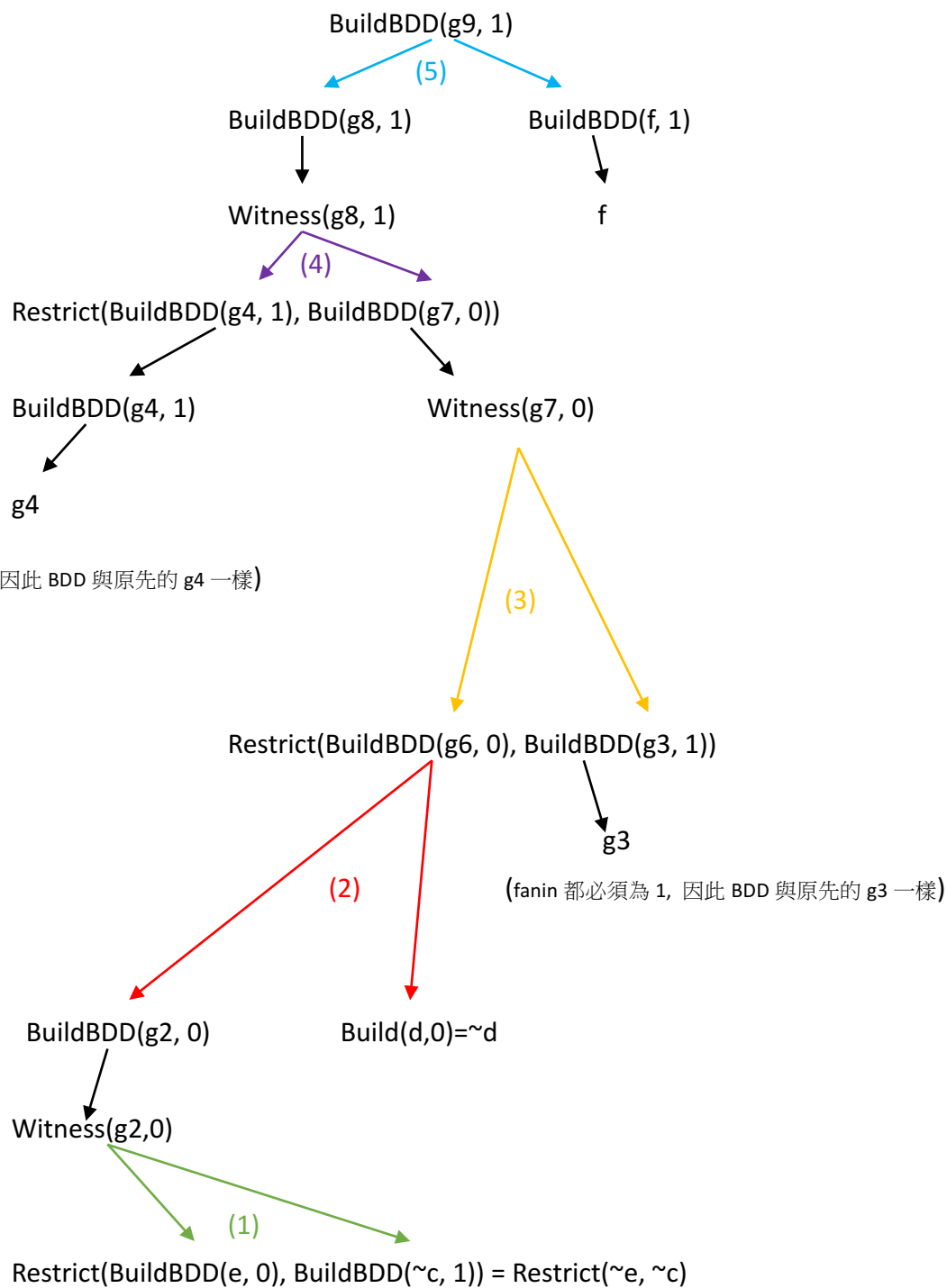
P7b

電機系 李友岐

延用 p6a 的設定

```
BddNode g1 = d & b;  
cout << "g1:" << endl;  
cout << g1 << endl;  
  
BddNode g2 = ~c & e;  
cout << "g2:" << endl;  
cout << g2 << endl;  
  
BddNode g3 = a & b;  
cout << "g3:" << endl;  
cout << g3 << endl;  
  
BddNode g4 = c & g1;  
cout << "g4:" << endl;  
cout << g4 << endl;  
  
BddNode g5 = g1 | g2;  
cout << "g5:" << endl;  
cout << g5 << endl;  
  
BddNode g6 = g2 | d;  
cout << "g6:" << endl;  
cout << g6 << endl;  
  
BddNode g7 = g6 & g3;  
cout << "g7:" << endl;  
cout << g7 << endl;  
  
BddNode g8 = g4 | g7;  
cout << "g8:" << endl;  
cout << g8 << endl;  
  
BddNode g9 = g8 & f;  
cout << "g9:" << endl;  
cout << g9 << endl;
```

BDD 建造過程大概如下：



(1) (2) (3) (4) (5) 就對應到新增的五行程式

```
cout << "p7b g9" << endl;
BddNode _g2=bm.restrict(~e,~c); //(1)
BddNode _g6=_g2|~d; //(2)
BddNode _g7=bm.restrict(_g6,g3); //(3)
BddNode _g8=bm.restrict(g4,_g7); //(4)
BddNode _g9=_g8&f; //(5)
cout<<_g9<<endl;
```

原本 p6a 的 g9，其 BDD Node 一共有 10 個。

但是 p7b 的 g9，其 BDD Node 一共只有 6 個，換言之減少了 4 個。

g9:

```
[6](+) 0x7f9859d00280 (1)
  [5](+) 0x7f9859d00240 (2)
    [4](+) 0x7f9859d001c0 (1)
      [3](+) 0x7f9859d00180 (2)
        [2](+) 0x7f9859c047a0 (6)
          [0](+) 0x7f9859c04530 (26)
          [0](-) 0x7f9859c04530 (26) (*)
        [2](+) 0x7f9859c04960 (5)
          [1](+) 0x7f9859c04760 (3)
            [0](+) 0x7f9859c04530 (26) (*)
            [0](-) 0x7f9859c04530 (26) (*)
            [0](-) 0x7f9859c04530 (26) (*)
          [3](-) 0x7f9859d00080 (2)
            [0](+) 0x7f9859c04530 (26) (*)
            [2](-) 0x7f9859c04960 (5) (*)
        [4](+) 0x7f9859d00200 (1)
          [3](+) 0x7f9859d00180 (2) (*)
          [0](-) 0x7f9859c04530 (26) (*)
        [0](-) 0x7f9859c04530 (26) (*)
```

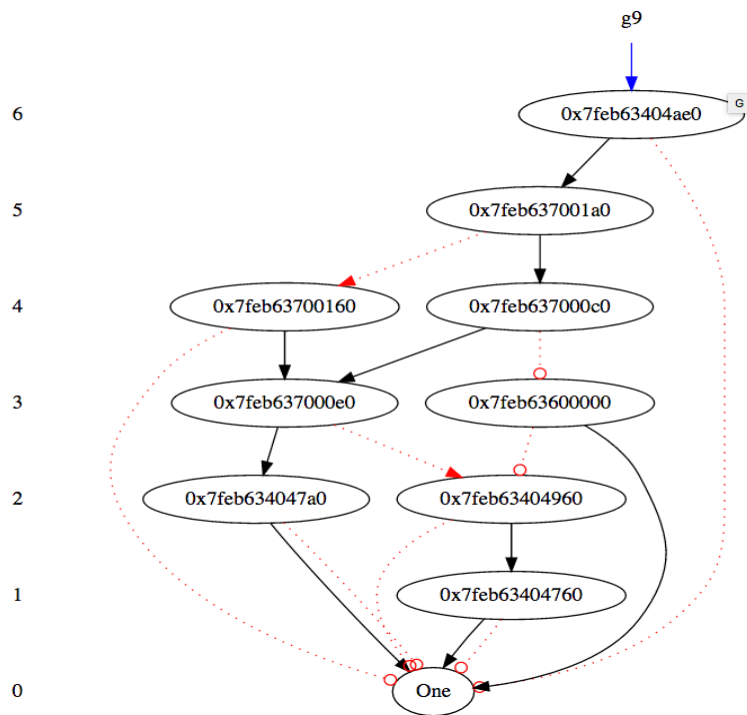
==> Total #BddNodes : 10

p7b g9

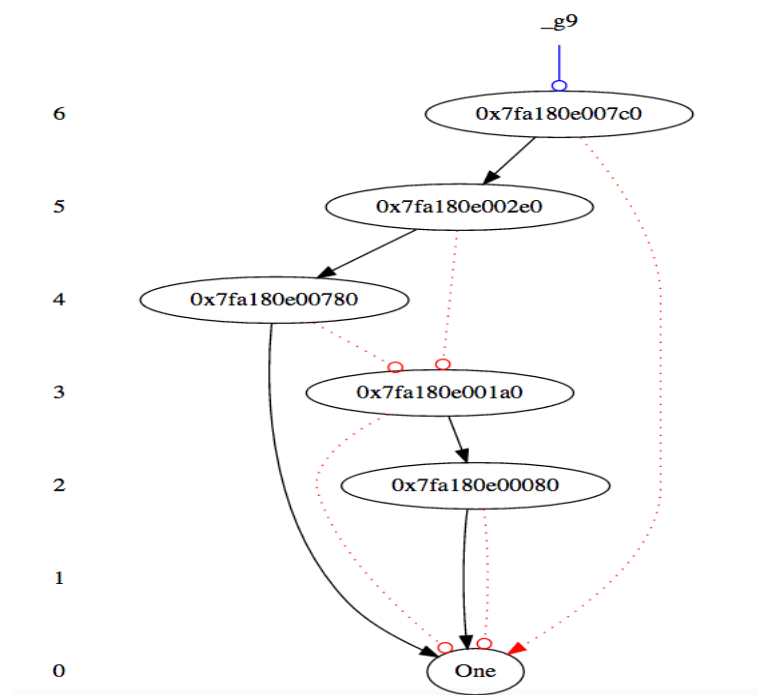
```
[6](-) 0x7f9859d003e0 (1)
  [5](+) 0x7f9859d003a0 (2)
    [4](+) 0x7f9859d00340 (1)
      [0](+) 0x7f9859c04530 (30)
      [3](-) 0x7f9859c049a0 (3)
        [2](+) 0x7f9859c047a0 (6)
          [0](+) 0x7f9859c04530 (30) (*)
          [0](-) 0x7f9859c04530 (30) (*)
          [0](-) 0x7f9859c04530 (30) (*)
        [3](-) 0x7f9859c049a0 (3) (*)
      [0](+) 0x7f9859c04530 (30) (*)
```

==> Total #BddNodes : 6

P6a BDD Graph



p7b BDD Graph



很明顯地，p7b 的 `g9` 之 BDD Size 變小了。