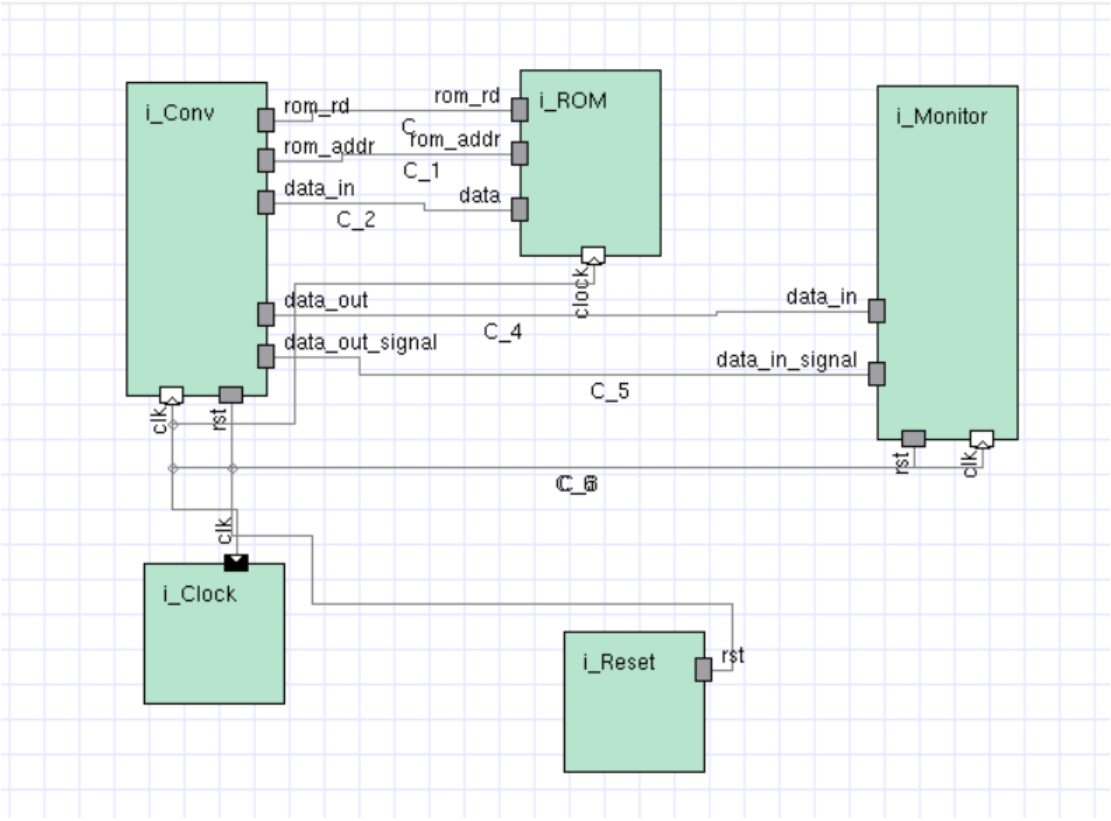

電路圖如上

```
  SystemC 2.3.1 --- May 12 2017 20:20:38
  Copyright 1996-2017 by all Contributors,
  ALL RIGHTS RESERVED

Result:
0       174     0       103     0       92      22      7
22      0       0       61      0       22      0       51
11      106     36      0       71      13      66      0
0       23      0       0       18      0       66      117
44      8       93      94      10      76      0       0
0       14      94      11      0       0       0       0
53      171     0       0       78      52      80      51
108     0       93      0       141     0       67      10
SystemC: simulation stopped by user.
[New SystemC Thread 0x1496d50 "HARDWARE.i_Reset.do_it"]
[SystemC Thread 0x1496d50 "HARDWARE.i_Reset.do_it" exited]
```

輸出結果如上

程式碼主要分成 2 個部分 1.輸入 2.輸出

輸入時 data_in 有延遲所以實際上當 i=2~112 時才有值被讀取到

0~1 是延遲

2~101 是 input data

102~110 是 weight

111 是 bias

```
10  if(i<112)
11  {
12    data_out_signal = 0;
13    rom_rd = 1;
14    rom_addr = i;
15    if (i>=2 && i<102)
16    {
17      input[i-2] = data_in;
18    }
19    else if (i<111)
20    {
21      weight[i-102] = data_in;
22    }
23    else if (i==111)
24    {
25      bias = data_in;
26    }
27    i++;
28  }
```

else 為輸出的部分

i 初始值=112，所以(i-112) = 0

33 行的 input[(i-112)+10*(k/3)+(k%3)]是對應一個九宮格 input[(i-112)]

為九宮格的左上

所以 input[(i-112)]最多到倒數第 3 個

之後就要換行 也就是加 3

```
29  else
30  {
31    for(int k=0;k<9;k++)
32    {
33      temp = temp+(input[(i-112)+10*(k/3)+(k%3)] * weight[k]);
34    }
35    temp = (temp+bias <= 0) ? 0 : temp + bias;
36    data_out_signal = 1;
37    data_out = temp;
38    temp = 0;
39    if ((i-112)%10==7)
40    {
41      i+=3;
42    }
43    else
44    {
45      i++;
46    }
47  }
```

然後 input file 改成絕對路徑就 OK 了

```
16
17  SC_CTOR( ROM )
18  {
19    // vvvvv change the path of input file here vvvvv
20    fin.open( "/home/b083022053/SC/HW3/Code/input.txt", ios::in );
21
22    for ( int i = 0 ; i < 110 ; i++ )
23   {
```