

Code Example

```

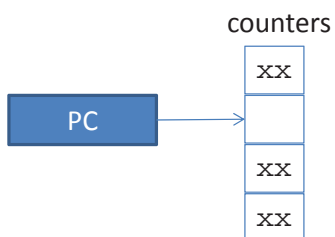
1   int i=0, j=3;
2   do {
3       j += 3;
4   b1:   if(i == 0)
5           j %= 5;
6   b2:   if(j < 2)
7           j++;
8           i++;
9   b3: } while(i<2);

```

line	i	j	b1	b2	b3
1					
3					
4					
5					
6					
7					
8					
9					
3					
4					
6					
8					
9					

Bimodal Predictor (b2)

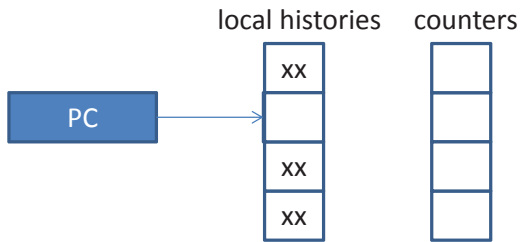
- individual 2-bit up/down counter
 - initial state = 10



line	i	j	b1	b2	b3
1	0	3			
3		6			
4			NT		
5		1			
6				NT	
7		2			
8	1				
9					T
3		5			
4			T		
6				T	
8	2				
9					NT

Local Predictor (b2)

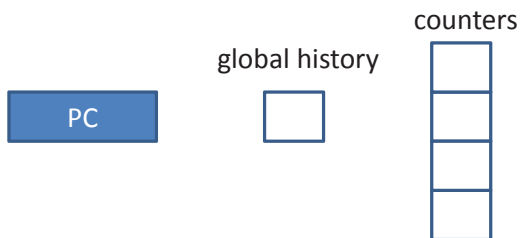
- shared 2-bit up/down counters
 - initial states = 10
- individual local histories
 - initialized to 11



line	i	j	b1	b2	b3
1	0	3			
3		6			
4			NT		
5		1			
6				NT	
7		2			
8	1				
9					T
3		5			
4			T		
6				T	
8	2				
9					NT

Global Predictor (b1,b2,b3)

- shared 2-bit up/down counters
 - initial states = 10
- one global history
 - initialized to 11



line	i	j	b1	b2	b3
1	0	3			
3		6			
4			NT		
5		1			
6				NT	
7		2			
8	1				
9					T
3		5			
4			T		
6				T	
8	2				
9					NT