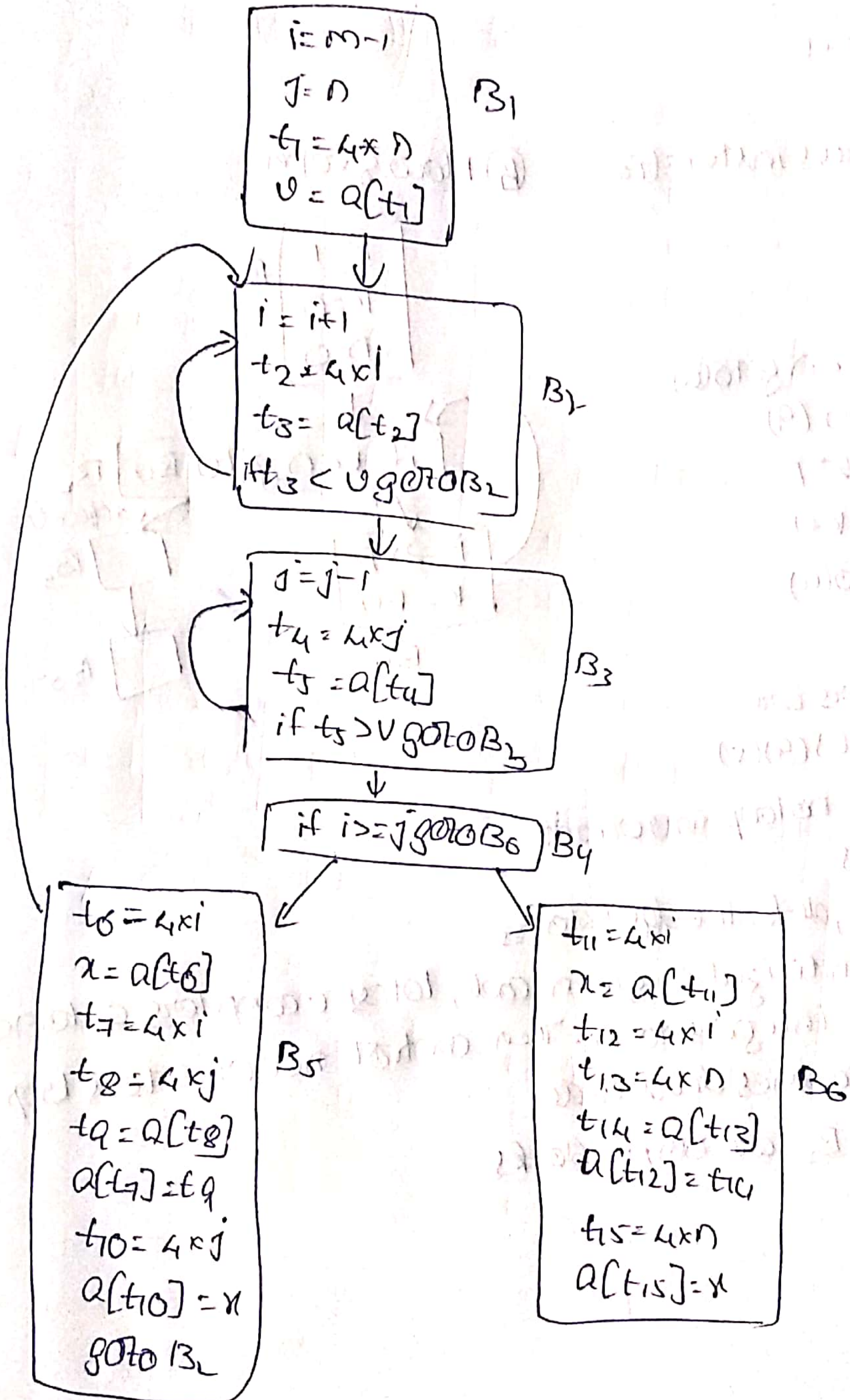


CD Tutorial 7

1) Flowgraph



2) code:

```
int j=1, k=0, n;  
while(k < n)  
{  
    p = 2 * p;  
    k = k + 1;  
}
```

② 3-address instruction

1) $P = 1$

2) $k = 0$

3) $n = 0$

4) if $k < n$ goto (6)

5) goto (9)

6) $p = 2 * p$

7) $k = k + 1$

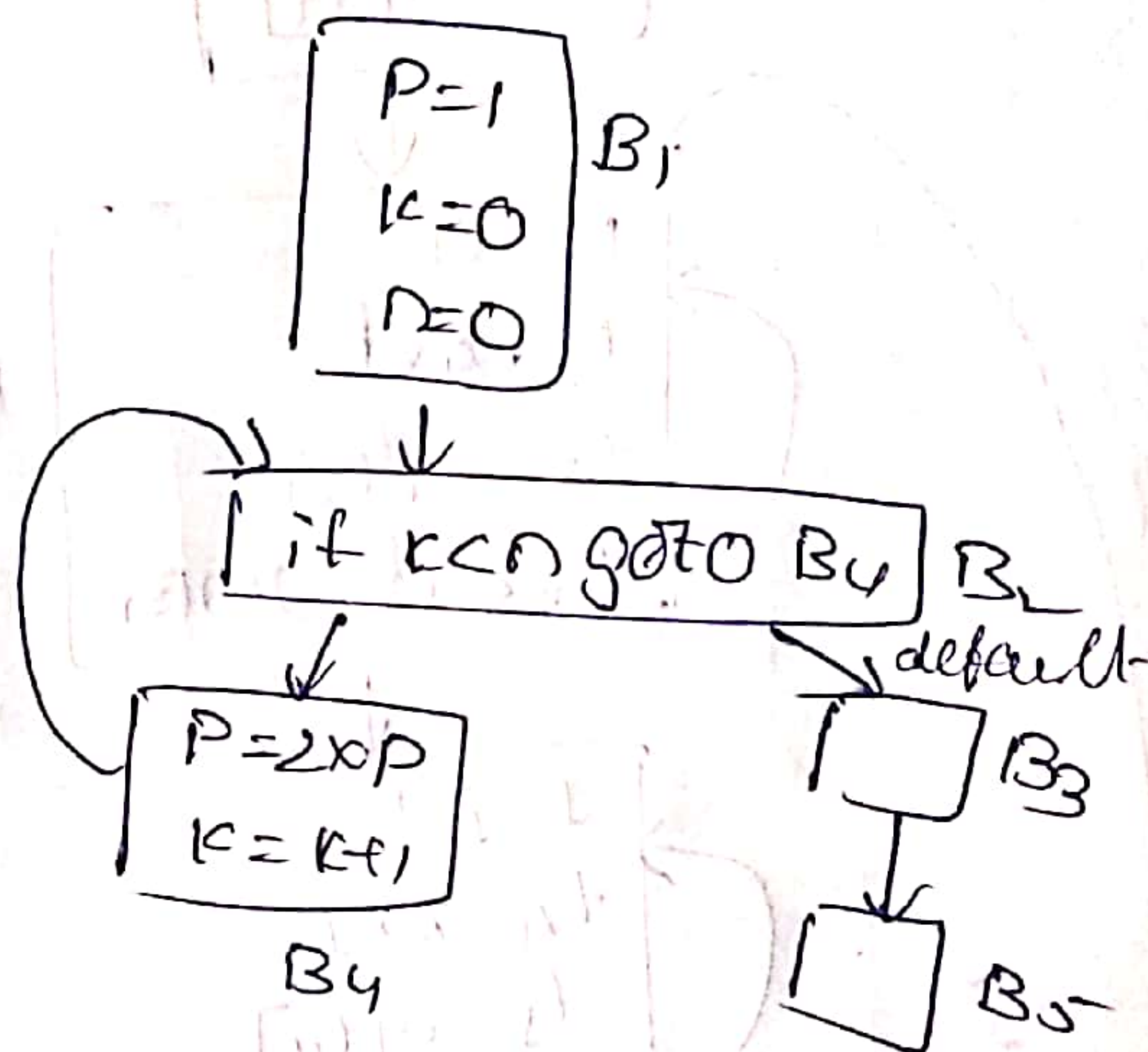
8) goto (4)

9)

leaders are

(1)(4)(6)(9)(5)

③ Flow graph



(c) There are no loop invariant operations

(d) From B_2 , default edge is to B_3

* n is not initialized in given code, latest compilers automatically initialize integers to 0. Then control never enters loop so B_4 becomes dead code.

B_3 & B_5 are empty blocks