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CPE 315 lab4 hand calculations
main:

```
        push    {r7, lr}        //1
        sub     sp, sp, #16     //1
        add     r7, sp, #0      //1
        mov     r3, #0          //1
        str     r3, [r7, #12]   //1
        mov     r3, #1          //1
        str     r3, [r7, #8]    //1
        mov     r3, #0          //1
        str     r3, [r7, #4]    //1
        mov     r3, #0          //1
        str     r3, [r7]        //1
        b       .L2             //4 (static branch prediction)
.L3: //L3 is taken 10 times (cmp will be evaluated 11 times)
        ldr     r2, [r7, #12]   //1
        ldr     r3, [r7, #8]
        add     r3, r2, r3      //4 (r3 is late)
        str     r3, [r7, #4]    //1
        ldr     r3, [r7, #8]
        str     r3, [r7, #12]   //4 (r3 is late)
        ldr     r3, [r7, #4]
        str     r3, [r7, #8]    //4 (r3 is late)
        ldr     r3, [r7]
        add     r3, r3, #1      //4 (r3 is late)
        str     r3, [r7]        //1
.L2:
        ldr     r3, [r7]        //1
        cmp     r3, #9          //3 (r3 is late)
        ble     .L3             // 0:4 1-10:1 11:6
        ldr     r3, [r7, #4]    //1
        mov     r0, r3          //3 (r3 is late)
        mov     sp, r7          //1
        add     sp, sp, #16     //1
        pop     {r7, pc}        //1
```

Final calculation: 15(main)+10*19(L3)+11*4(ldr+cmp in L2)+1*4(ble static prediction)+9*1(ble dynamic correct)+1*6(ble dynamic incorrect)+7(last 5 lines of L2) = 275 cycles