C Segment

Assume that all variables used in the following program segment are of type int.

```c
j = 0;
for (i = 1; i <= n; i++) {
    j += 2 * i;
}
```

Let us assume that the variables `i`, `j` and `n` are in registers $15$, $16$ and $17$ respectively. Also, register $18$ is used for scratch work (i.e., as a temporary).

MAL Segment

```mal
move $16, $0  #Set j = 0.
addi $15, $0, 1  #Set i = 1.
loop: bgt $15, $17, end_loop  #If i > n, loop is over.
mul $18, $15, 2  #Set temp = 2 * i.
add $16, $15, $18  #Set j += temp.
addi $15, $15, 1  #i++
loop
```

end_loop: