```
        # comments are written like this--source code often included
        # while (save[i] == k)
loop:   li R1,save   # loads the starting address of save into R1
        lw R2,i
        mult R3,R2,4 # Multiply R2 by 4
        add R4,R3,R1
        lw R5,0(R4) # load save[i]
        lw R6,k
        bne R5,R6,endwhileloop
        # i += 1
        lw R6, i
        add R7,R6,1  # increment
        sw R7,i
        branch loop # next iteration
endwhileloop:
```

FIGURE e2.15.3 The while loop example is shown using a typical intermediate representation. In practice, the names save, i, and k would be replaced by some sort of address, such as a reference to either the local stack pointer or a global pointer, and an offset, similar to the way save[i] is accessed. Note that the format of the MIPS instructions is different, because they are intermediate representations here: the operations are capitalized and the registers use RXX notation.