

ACTIVITY 5

Basic Control Flow Using JECXZ

1. In each of the following, what instruction will be the next to execute after JECXZ?

(a)

```
mov ecx, 0
add ecx, 3
jecxz ok
mov ecx, 1
ok: nop
```

(b)

```
x: mov eax, -3
   mov ecx, 1
   add ecx, 2
   add ecx, eax
   jecxz x
   mov ecx, 0
```

(c)

```
top: call ReadDec
     mov ecx, eax
     jeczx top
     call WriteDec
```

2. From the user's perspective, what does the program from 1(c) do?
3. What value will be in ECX after the following sequence of instructions executes?

```
mov ecx, 123456h
sub cx, 3400h
mov cl, 00h
jecz ok
mov ecx, 0FFFFFFFFh
ok: nop
```

4. Translate the following pseudocode into a sequence of assembly language instructions.
What will each program display?

(a)
Set ECX to 5
do {
 Print the value in ECX
 Decrement ECX by 1
} while (ECX \neq 0)

(b)
Set ECX to 5
do {
 Print the value in ECX
 Decrement ECX by 1
} while (ECX == 0)

5. Translate the following pseudocode into a sequence of assembly language instructions.
What will each program display?

(a)
Set ECX to 5
while (ECX \neq 0) {
 Print the value in ECX
 Decrement ECX by 1
}

(b)
Set ECX to 5
while (ECX == 0) {
 Print the value in ECX
 Decrement ECX by 1
}

6. Translate the following pseudocode into a sequence of assembly language instructions.

```
Read an unsigned integer from the keyboard
Store it in ECX
if (ECX == 0) {
    Display the value 9999
} else {
    Display the value the user entered
}
```