Problem FC-4 (3 parts)  

Flow Control

Part A: Turn this doubly nested if statement into a single if-then-else statement using a compound predicate.

```c
if not(x<3)
    if (y!=100)
        z = 50;
    else z = 20;
else z = 20;

if ((x<3)||(y==100))
    z = 20;
else
    z = 50;
```

Part B: Write a single C statement that corresponds to the following MIPS code. Assume $1$ holds $A$, $2$ holds $B$, and $3$ holds $C$. Do not use an if-then-else.

```mips
beq $1$, $0$, False
beq $2$, $0$, False
addi $3$, $0$, 1
j Continue
False: addi $3$, $0$, 0
Continue: ...

C = A && B;
```

Part C: Draw a control flow graph for the following C fragment. Assume blocks A, B, C, and D contain several C statements. Use proper control flow graph notation.

```c
if (X == Y) {
    block A;
    if (N != M)
        if (J == K)
            Block B;
        else
            Block C;
    else
        Block D;
}
```