This quiz has 1 questions, for a total of 10 points.

1. **10 points** Convert the following C program to an equivalent program in x86 assembly.

```c
int gcd(int a, int b) {
    if (b == 0)
        return a;
    else
        return gcd(b, a % b);
}

int main() {
    return gcd(4, 6);
}
```

**Solution:**

```assembly
.text
.globl _gcd
_gcd:
pushl %ebp
movl %esp, %ebp
cmpl $0, 12(%ebp)
jne L2
movl 8(%ebp), %eax
leave
ret
L2:
movl 8(%ebp), %eax
cltd
idivl 12(%ebp)
pushl %edx
pushl 12(%ebp)
call _gcd
addl $8, %esp
leave
ret
.globl _main
_main:
pushl %ebp
movl %esp, %ebp
subl $24, %esp
movl $6, 4(%esp)
movl $4, (%esp)
call _gcd
leave
ret
.subsections_via_symbols
```