

CS5541 - Computer Systems

C Code from Assembly Exercise

For a function with prototype
long decode2(long x, long y, long z);
GCC generates the following code:

```
1  decode2:
2      subq    %rdx, %rsi
3      imulq   %rsi, %rdi
4      movq    %rsi, %rax
5      salq    $63, %rax
6      sarq    $63, %rax
7      xorq    %rdi, %rax
8      ret
```

Parameters x, y, and z are passed in registers %rdi, %rsi, and %rdx. The code stores the return value in register %rax.

Write C code for decode2 that will have an effect equivalent to the assembly code shown.