Assignment 0.2

Combining C and Assembly Language Programs

GCC commands have been explained in assignment 0.1. New commands used in this assignment are:

Convert sum.asm into sum.o:

nasm -felf64 sum.asm

Command to link object code file of C program and object code file of .asm file:

gcc prog-add.o sum.o -o prog-add

How the program works:
The C file takes two numbers, x and y, as inputs and passes them as parameters in the function sum. The sum.asm file implements the add function. Since we have two integers as parameters we use the registers rdi and rsi registers. First, we store the value stored in rdi in rax. Then, we add the value in rsi to the value in rax. The ret returns the value stored in rax. We then print this value using printf() and then terminate the execution.

The steps of compilation are similar to what was explained in assignment 0.1 till the linking process. Before linking, we convert the sum.asm into sum.o using the command mentioned above and then we link them in the last step to get the executable file prog-add.