Working of Program:

The “prog-add.c” C program is used to take two integer inputs, and find the sum by add function (written in assembly language add.asm) and print it. We take two input integer “a” and “b” and then pass them as arguments to add function. Our add function is implemented in assembly language in add.asm file which takes two input and stores in two 32-bit register by storing a in edi register and b in esi register. We first store edi register content to eax register by mov operand of assembly language and then store esi register content to ebx register with the same command. Finally, we add the content of eax and edx register by add operand which store the result back in eax register. At last, our ret statement returns the eax register data which is stored in another variable “c” of C Program. In the end we print the desired output by printf function of stdio.h library.

To run this program in terminal I use the make command to run Makefile. The following command:

nasm -felf64 add.asm && gcc prog-add.c add.o && ./a.out

First, the nasm command compile the assembly code to produce object file and the gcc pro-add.c add.o compile our C program and link it with assembly object file to produce final executable file a.out which is run with the help of **./a.out.**