CPSC 240: Computer Organization and Assembly Language
Assignment 02, Fall Semester 2023

CWID:_____ Name:_____

1. Download the "CPSC-240 Assignment02.docx" document.
2. Design the "addition.asm" program, and use assembly language to realize the function of the following C++ instructions.

```
unsigned short num1 = 50000;
unsigned short num2 = 40000;
unsigned int sum = 0;
sum = int(num1 + num2);
```

3. Assemble the "addition.asm" file and link the "addition.o" file to get the "addition" executable file.
4. Run the "addition" file with the DDD debugger to display the simulation results of num1 and num2, as well as the simulation results of sum.
5. Insert source code (addition.asm) and simulation results (DDD debugger window) of the memory (num1, num2, and sum) in the document. Use calculator or hand calculation to verify the simulation results.
6. Design the "subtraction.asm" program, and use assembly language to realize the function of the following C++ instructions.

```
signed short num1 = 20000;
signed short num2 = 30000;
signed int dif = 0;
dif = int(num1 - num2);
```

7. Assemble the "subtraction.asm" file and link the "subtraction.o" file to get the "subtraction" executable file.
8. Run the "subtraction" file with the DDD debugger to display the simulation results of num1 and num2, as well as the simulation results of diff.
9. Insert source code (subtraction.asm) and simulation results (DDD debugger window) of the memory (num1, num2, and dif) in the document. Use calculator or hand calculation to verify the simulation results.
10. Save the file in pdf format and submit the pdf file to Canvas before 23:59 pm on 09/13/2023.

[Insert addition.asm here]

[Insert addition simulation result here]

[Insert addition simulation result verification here]

[Insert subtraction.asm here]

[Insert subtraction simulation result here]

[Insert subtraction simulation result verification here]