Lab 02 Tasks

Task 01: (Verifying an Instruction with the Debugger)

The purpose of this task is to use the debugger to confirm exactly what an instruction does by observing a register's value before and after the instruction runs.

1. Code: Copy the following program into your project:

```
TITLE DebugTest (DebugTest.asm)
INCLUDE Irvine32.inc
.code
        main PROC
        mov eax, 10
        add eax, 20
        exit
main ENDP
END main
```

2. Steps:

1. **Predict the Result:** Before you run the code, read the two instructions. What decimal value do you predict will be in the eax register after the add eax, 20 line executes?
2. **Set a Breakpoint:** Set a breakpoint on the add eax, 20 line. This will pause the program just before that line runs.

3. Observe the "Before" State:

- Start the debugger (F5). The program will pause at your breakpoint.
- Look at the Registers window at the bottom of Visual Studio. Note the value of eax. It should be 10 from the first instruction.

4. Execute and Observe the "After" State:

- Press the Step Over (F10) key one time. This executes only the add instruction.
- Look at the eax register again. You will see it has changed.

Task 02:

1. **Define two variables** (num1 and num2) in the .data section.

2. **Write code in the .code section** to:

    - Load num1 and num2 into registers.
    - Add the two numbers.
    - Store the result in the EAX register.
    - Display/print the result.

WHAT YOU NEED TO SUBMIT

Task 01:

1. A short written answer with your prediction from Step 1.
2. The "Before" screenshot (from Step 3).
3. The "After" screenshot (from Step 4). The screenshot must show the Visual Studio window with the yellow arrow on the exit line and the Registers window clearly displaying the final value of eax.

Task 02:

1. Include your **name as a comment** at the top of the .asm file (must be visible in the screenshot).
2. Attach a screenshot showing the program output.