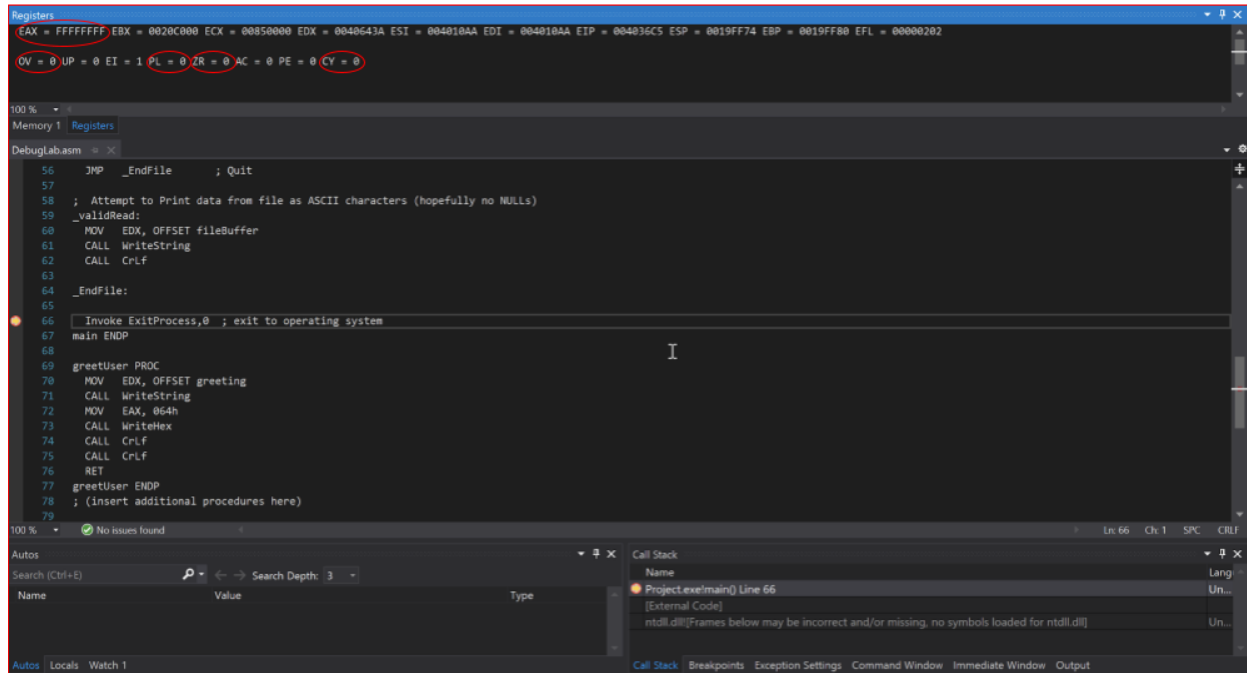Lake Peterson
CS 271
Project 2
July 11, 2021
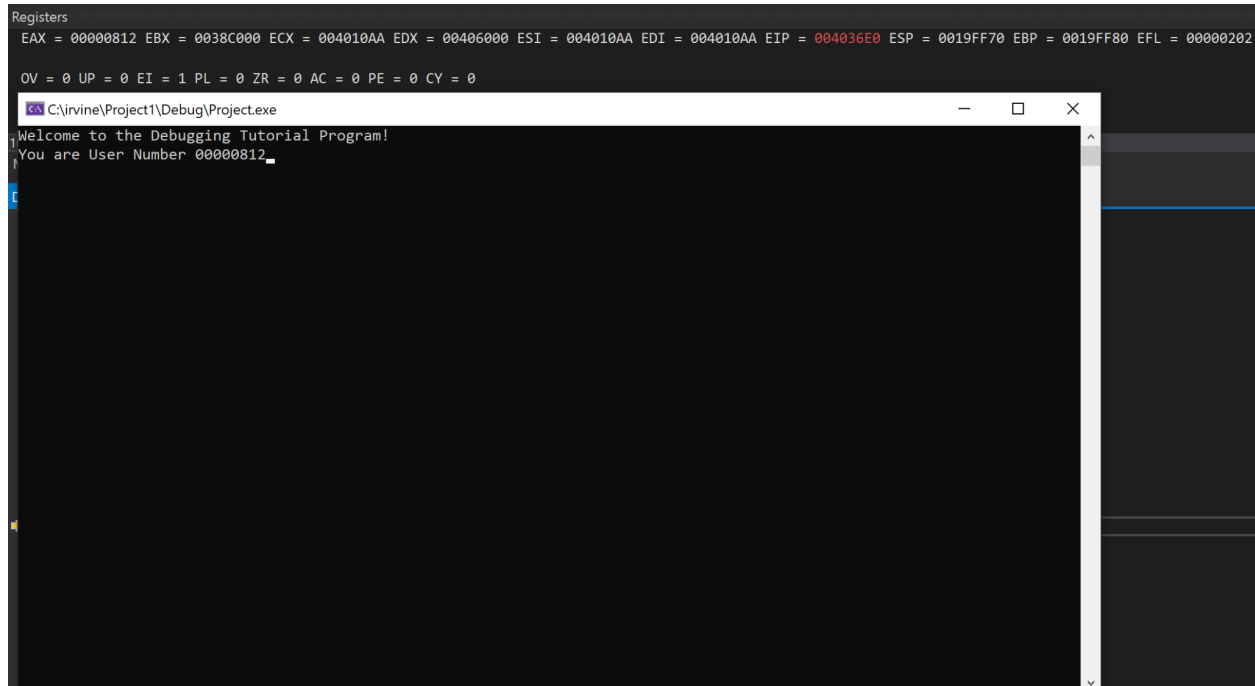
Part 1:

1. What is the current value (in Hex) of the EAX Register?

- EAX Register = FFFFFFFF

2. What is the current state (Set/Clear) of the following flags: Carry, Overflow, Zero, Sign?

- Carry Flag (CY) = Clear
- Overflow Flag (OV) = Clear
- Zero Flag (ZR) = Clear
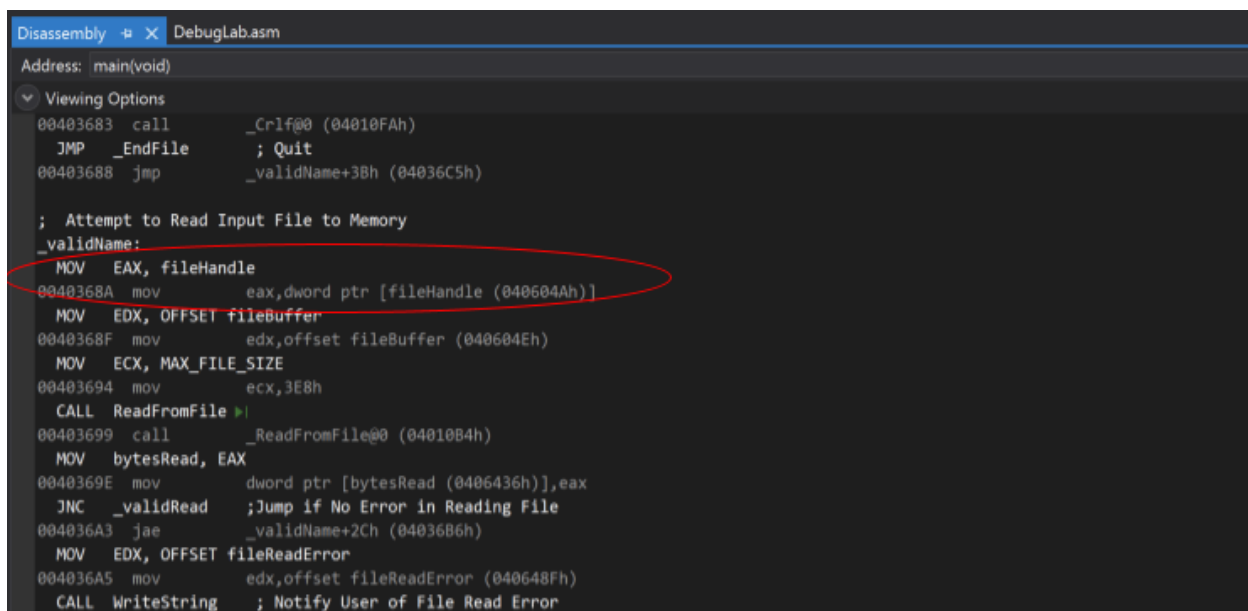- Sign Flag (PL) = Clear

Part 2:

1. (Screenshot of your User Number number in Terminal Window and Registers/Editor window in Visual Studio).

Registers
EAX = 00000812 EBX = 0038C000 ECX = 004010AA EDX = 00406000 ESI = 004010AA EDI = 004010AA EIP = 004036E0 ESP = 0019FF70 EBP = 0019FF80 EFL = 00000202

OV = 0 UP = 0 EI = 1 PL = 0 ZR = 0 AC = 0 PE = 0 CY = 0

C:\irvine\Project1\Debug\Project.exe   —   □   ×

Welcome to the Debugging Tutorial Program!
You are User Number 00000812_

Part 3:

1. What is the memory address (in the code segment) of the instruction located at the _validName code label? Note that this question is not asking about the address of the JNE _validName instruction, but the actual code label (defined as _validName:).

- 040368Ah

2. What instruction (with operands, if any) is stored at the code segment address from Question 1 above? In addition to writing the instruction (with operands, if any), please circle this line on the screenshot attached to this part in your report, including the address from Question 1.

Disassembly ⊕ × DebugLab.asm

Address: main(void)

Viewing Options
```
00403683  call       _Crlf@0 (04010FAh)
   JMP   _EndFile      ; Quit
00403688  jmp        _validName+3Bh (04036C5h)

;  Attempt to Read Input File to Memory
_validName:
   MOV    EAX, fileHandle
0040368A  mov         eax,dword ptr [fileHandle (040604Ah)]
   MOV    EDX, OFFSET fileBuffer
0040368F  mov         edx,offset fileBuffer (040604Eh)
   MOV    ECX, MAX_FILE_SIZE
00403694  mov         ecx,3E8h
   CALL   ReadFromFile ▶|
00403699  call        _ReadFromFile@0 (04010B4h)
   MOV    bytesRead, EAX
0040369E  mov         dword ptr [bytesRead (0406436h)],eax
   JNC   _validRead   ;Jump if No Error in Reading File
004036A3  jae         _validName+2Ch (04036B6h)
   MOV    EDX, OFFSET fileReadError
004036A5  mov         edx,offset fileReadError (040648Fh)
   CALL   WriteString  ; Notify User of File Read Error
```

- MOV   EAX,   fileHandle
  0040368A mov   eax, dword ptr [fileHandle (040604AH)]

3. What is the significance of the relationship between the value in EIP (in the Registers window) and the leftmost value on any given line?

- The significance of the relationship between the value in EIP and the leftmost value on any given line is that EIP is the current memory address of the location we are in the program.

Part 4:

1. Let n = (the last three digits of your OSU ID number). What is the (n+1)st byte (index n) of TestText.txt, interpreted as an ASCII character?

- The (812 + 1) byte is interpreted as an ASCII character as a space ' '.

2. Remember to take a screenshot of the Memory window used to collect this information for inclusion in the lab report. Please circle the value in the address bar and the character in the ASCII portion of the Memory debug window.
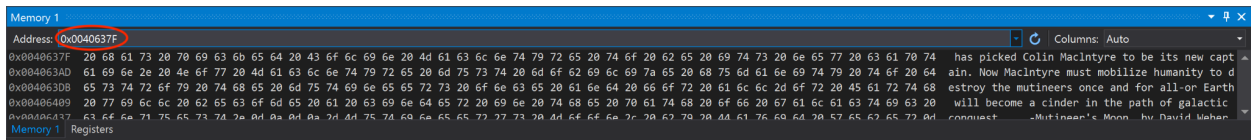
Part 5:

1. What is the unsigned value of fileHandle after opening the TestText.txt file? Remember to include a screenshot that shows where you obtained this information, and please circle the value of fileHandle on this screenshot.
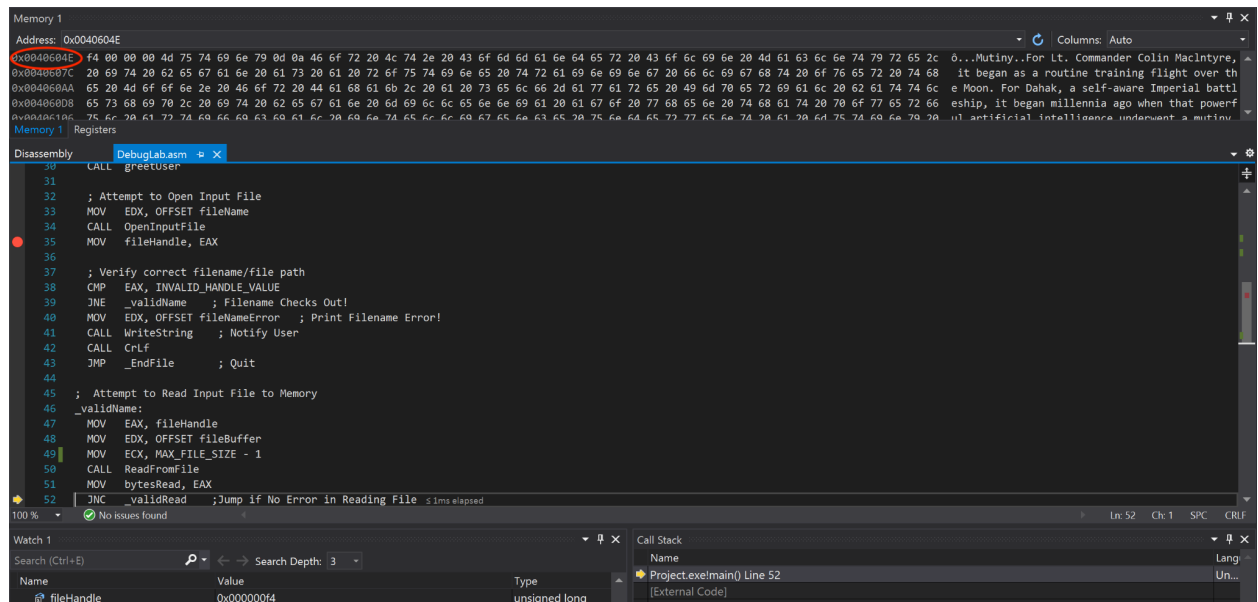
- The unsigned value of fileHandle after opening the TestText.txt file is 0x0040604E, which is 4218958.