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COMP 3350: Homework 4 - Debugging, Flags, and Data Declarations

Problem 1

1. SF=0 → AL= 0111 1111
2. SF=0 → AL= 0111 1111
3. SF=1, OF=1 → AL= 1000 0000, overflow since +127 → -128
4. CF=0 → AL still in bounds. No carry from bit 7 to bit 8.
5. PF=1 → AL = 0100 1000, even number of '1' bits.

Problem 2

```
mov AX, 0
add AX, MyArray
add AX, MyArray+1
add AX, MyArray+2
add AX, MyArray+3
add AX, MyArray+4
mov Total, AX
```

Problem 3

1. ESI = 0040_2070 → N/A
2. AX = 126Bh → low byte=6B, high byte=12
3. EAX = 19F2_25E8 → First 4 bytes of 0040_2074: E8, 25, F2, 19
4. AX = 0000h → 0040_2080 ⇒ 00, 00
5. AX = 2400h → low byte=00, high byte=24
6. AX = DA2Dh → memory[207C... 70] = 2D, DA

Problem 4

1. AX = 2 → because each element is a WORD = 2 bytes
2. AX = 18 → (number of words)(2 bytes) = 9x2=18
3. AX = 9 → number of words = 9

Problem 5

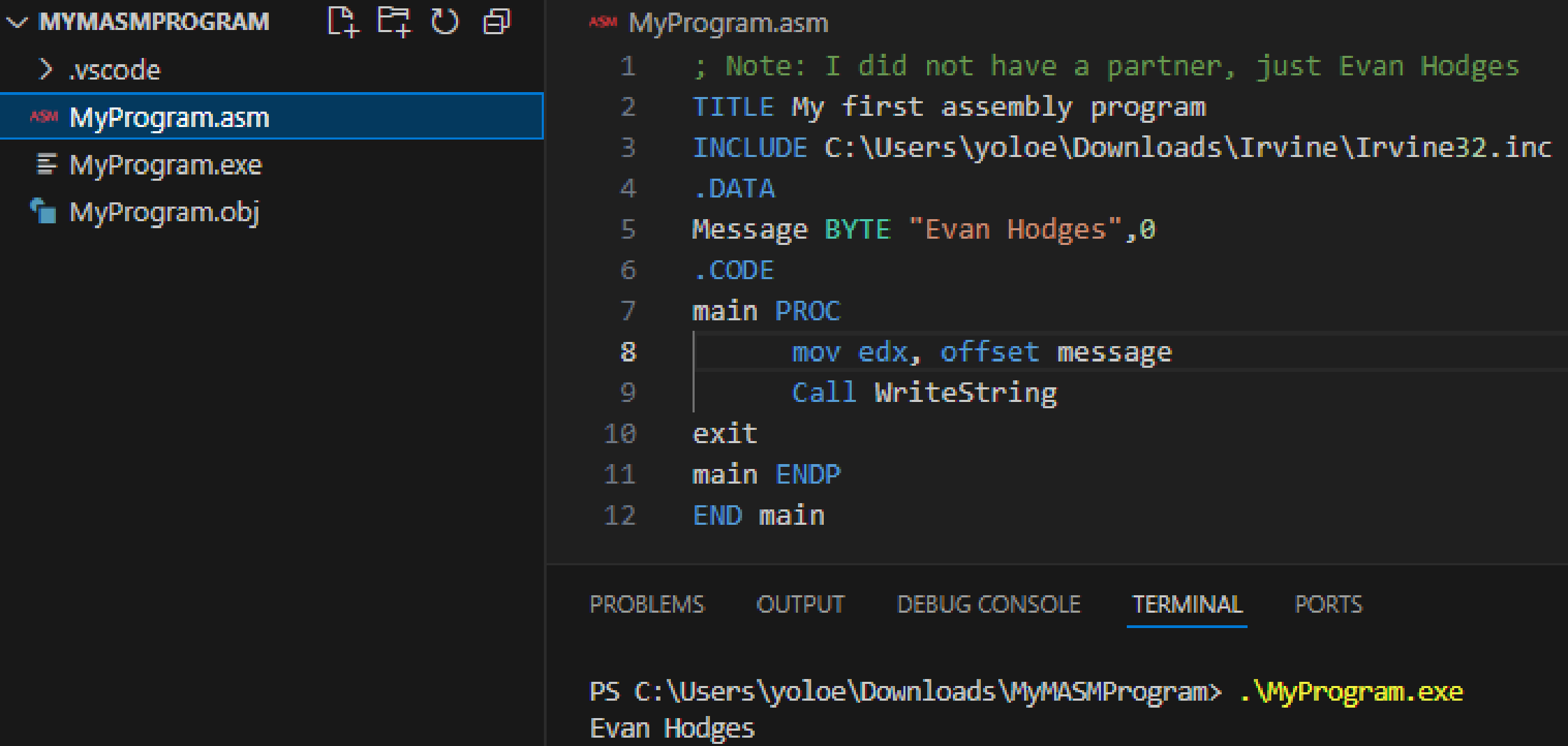
1. EAX = 0000F26Bh → zero-extension of bx = F26Bh
2. EDX = 000000F2h → 32-bit zero-extension of bh = F2h
3. EAX = FFFFD312h → signed-extension of bx = D312h
4. EDX = 00000012h → signed-extension of bl = 12h

Problem 6

1. AX = 0F06h → low byte = 06, next byte = 0F
2. AX = 9396h → 96, 93
3. AX = FFD9h → D9, FF
4. AX = 9527h → var3-2 = address of last 2 bytes of var2 ⇒ 27, 95

Problem 7

Visual Studio Code and output screenshot provided in this same PDF.


MYMASMPROGRAM
.vscode
MyProgram.asm
MyProgram.exe
MyProgram.obj
MyProgram.asm
; Note: I did not have a partner, just Evan Hodges
TITLE My first assembly program
INCLUDE C:\Users\yoloe\Downloads\Irvine\Irvine32.inc
.DATA
Message BYTE "Evan Hodges",0
.CODE
main PROC
mov edx, offset message
Call WriteString
exit
main ENDP
END main
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
PS C:\Users\yoloe\Downloads\MyMASMProgram> .\MyProgram.exe
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