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.586
.model flat, stdcall
option casemap :none
.stack 4096

ExitProcess proto, dwExitCode :dword
GetStdHandle proto :dword
WriteConsoleA proto :dword, :dword, :dword, :dword, :dword
ReadConsoleA proto :dword, :dword, :dword, :dword, :dword

.data
    STD_INPUT_HANDLE equ -10
    STD_OUTPUT_HANDLE equ -11
    bufSize = 80
    inputHandle DWORD ?
    buffer db bufSize dup (?)
    bytes_read DWORD ?
    get_temp_input db "What temperature are you trying to convert? ",0
    final_output db "The temperature is ",0
    get_unit_input db "What unit are you wanting to convert from? ",0
    outputHandle DWORD ?
    bytes_written dd ?
    TemperatureOutput DWORD 0
    TemperatureInput dw 0
    TemperatureUnitInput byte 0
    TemperatureOutputString dd 0
    asciiBuf db 4 dup (0)
.code

main proc
    mov eax, 0
    mov ebx, 0
    mov ecx, 0
    mov edx, 0
    invoke GetStdHandle, STD_OUTPUT_HANDLE
    mov outputHandle, eax
    invoke GetStdHandle, STD_INPUT_HANDLE
    mov inputHandle, eax
    call GetTemperatureOutput
    call GetTemperatureInput;
    call GetUnitOutput
    call GetUnitInput
    mov TemperatureUnitInput, al
    call ComputeTemp
    mov TemperatureOutput, eax
;    call OutputComputed
    ret
main endp

GetTemperatureOutput PROC
    invoke GetStdHandle, STD_OUTPUT_HANDLE
    mov outputHandle, eax
    mov eax, LENGTHOF get_temp_input
    invoke WriteConsoleA, outputHandle, addr get_temp_input, eax, addr bytes_written, 0
    mov eax, 0
    mov eax, bytes_written
    ret
GetTemperatureOutput endp

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GetTemperatureInput PROC
    invoke GetStdHandle, STD_INPUT_HANDLE
    mov inputHandle,eax
    invoke ReadConsoleA, inputHandle, addr buffer, bufSize, addr bytes_read, 0
    sub bytes_read, 2 ; -2 to remove cr,lf
    mov eax, 0
    mov ebx,0
    mov al, byte ptr buffer+[ebx]
    sub al,30h
    add TemperatureInput,ax
getNext:
    inc bx
    cmp ebx,bytes_read
    jz finish
    mov ecx, 10
    mov ax, TemperatureInput
    mul ecx
    mov TemperatureInput, ax
    mov al, byte ptr buffer+[ebx]
    sub al,48
    add TemperatureInput,ax
    jmp getNext
    finish:
    ret
GetTemperatureInput endp

GetUnitOutput PROC
    invoke GetStdHandle, STD_OUTPUT_HANDLE
    mov outputHandle, eax
    mov eax, LENGTHOF get_unit_input
    invoke WriteConsoleA, outputHandle, addr get_unit_input, eax, addr bytes_written, 0
    mov eax, 0
    mov eax, bytes_written
    ret
GetUnitOutput endp

GetUnitInput PROC
    invoke GetStdHandle, STD_INPUT_HANDLE
    mov inputHandle,eax
    invoke ReadConsoleA, inputHandle, addr buffer, bufSize, addr bytes_read, 0
    sub bytes_read, 2
    mov eax, 0
    mov ebx, 0
    mov eax, bytes_read
    mov al, byte ptr buffer+[ebx]
    ret
GetUnitInput endp

ComputeTemp PROC
    mov al, TemperatureUnitInput
    cmp al, 70
    jz fahrenheit
    cmp al, 102
    jz fahrenheit
    mov eax, 0
    mov ax, TemperatureInput
    mov ecx, eax

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    mov eax, 9
    imul ecx
        mov ecx, eax
    mov ecx, 5
        mov eax, eax
    idiv ecx
    add eax, 32
    ret
fahrenheit:
    mov eax, 0
    mov ax, TemperatureInput
    mov ecx, eax
        sub ecx, 32
    mov eax, 5
    imul ecx
        mov ecx, eax
    mov eax, 9
        mov ecx, ecx
    idiv eax
    ret
ComputeTemp endp

OutputComputed PROC
    invoke GetStdHandle, STD_OUTPUT_HANDLE
    mov outputHandle, eax
    mov eax, LENGTHOF final_output
    invoke WriteConsoleA, outputHandle, addr final_output, eax, addr bytes_written, 0
    mov eax, 0
    mov eax, bytes_written
    mov outputHandle, eax
        mov eax, LENGTHOF TemperatureOutput
    mov ebx, 10
        mov ecx, 0FFFFh
        mov edx, 0
        mov TemperatureOutput, 0
    mov TemperatureOutputString, 0
        mov eax, 0
        mov edi, 10000h
        mov ax, TemperatureInput
        mov eax, eax
        mov eax, edx
        mov edx, 0
        div ebx
        add eax, TemperatureOutputString
        add eax, 48
        add TemperatureOutputString, eax
        mov bytes_written, 0
parseStart:
    cmp TemperatureInput, 0
    jz endOfParse
        inc bytes_written
        mov eax, 0
        mov edx, 0
        mov ax, TemperatureInput
        mov eax, eax
        mov edx, 0
        div ebx

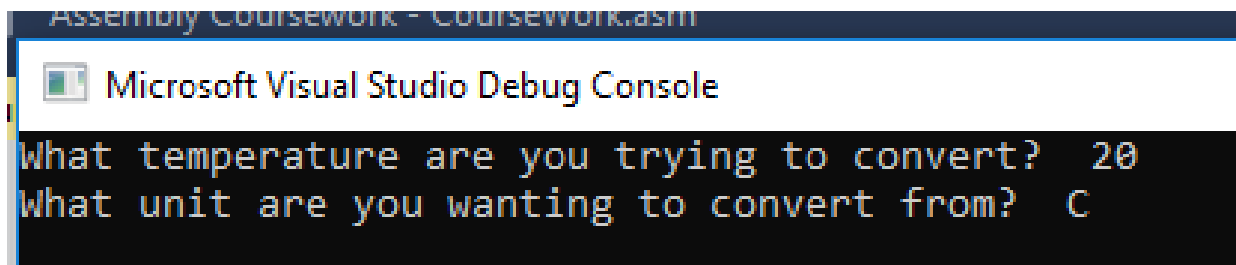
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        add eax, 48
        mul edi
        add TemperatureOutputString, eax
        mov edx, eax
        mov TemperatureInput, ax
        jmp parseStart
endOfParse:
        invoke GetStdHandle, STD_INPUT_HANDLE
        mov eax, LENGTHOF TemperatureOutputString
        invoke WriteConsoleA, outputHandle, addr TemperatureOutputString, eax, addr
bytes_written, 0
        mov eax, 0
        mov eax, bytes_written
        mov outputHandle, eax
        ret
OutputComputed endp

end main

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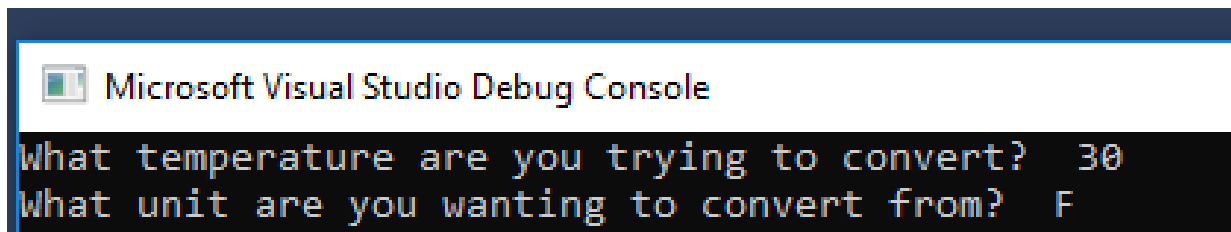
Assembly Coursework - Coursework.asm

Microsoft Visual Studio Debug Console

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What temperature are you trying to convert? 20
What unit are you wanting to convert from? C

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Assembly Coursework - Coursework.asm

Microsoft Visual Studio Debug Console

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What temperature are you trying to convert? 30
What unit are you wanting to convert from? F

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