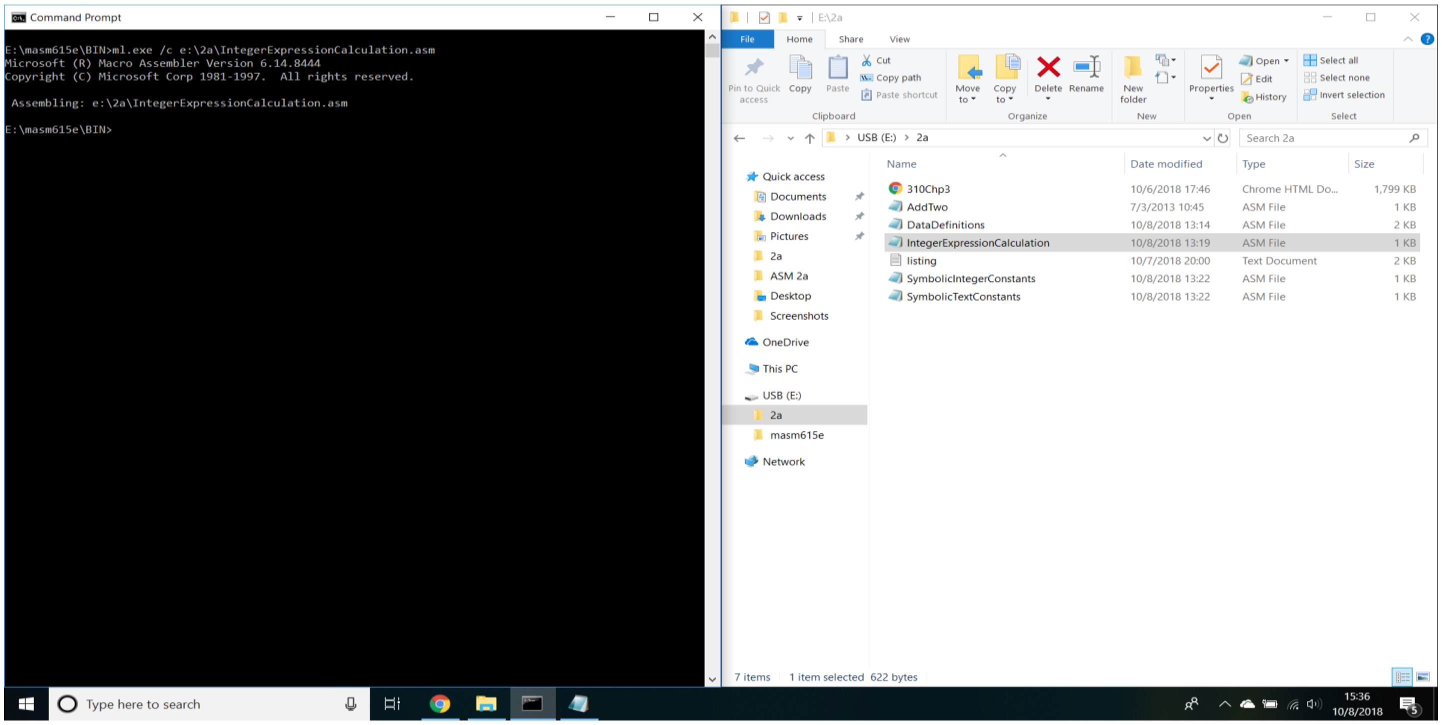
```
;;    Author: Marco Martinez
;;    Program: IntegerExpressionCalculation.asm
;;    Date: 10/7/2018
;;    Purpose: To calculate the expression: A = (A+B)-(C+D)
;;
;;    Software Change Record
;;    Name         Date     What
;;    Marco      10/7  Baseline for integer calculation A = (A+B) - (C-D)
;;

.386
.model flat,stdcall
.stack 4096
ExitProcess proto,dwExitCode:dword

.data
valA SDWORD 10
valB SDWORD 15
valC SDWORD 5
valD SDWORD 10
.stack

.code
main proc
      mov   eax, valA
      mov   ebx, valB
      add   eax, ebx
      mov   ecx, valC
      mov   edx, valD
      add   ecx, edx
      sub   eax, ecx

      invoke ExitProcess,0
main endp
end main
```

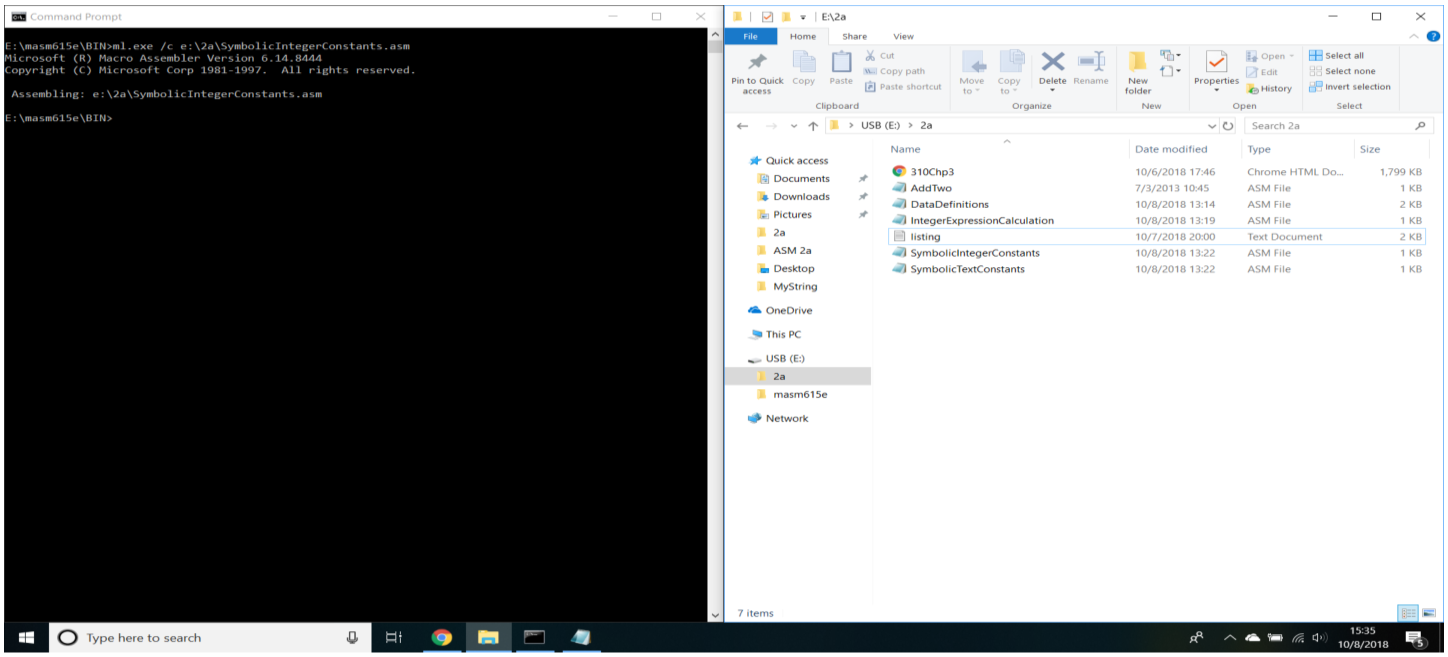


```
E:\masm615e\BIN>ml.exe /c e:\2a\IntegerExpressionCalculation.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

 Assembling: e:\2a\IntegerExpressionCalculation.asm

E:\masm615e\BIN>
```

Name	Date modified	Type	Size
310Chp3	10/6/2018 17:46	Chrome HTML Do...	1,799 KB
AddTwo	7/3/2013 10:45	ASM File	1 KB
DataDefinitions	10/8/2018 13:14	ASM File	2 KB
IntegerExpressionCalculation	10/8/2018 13:19	ASM File	1 KB
listing	10/7/2018 20:00	Text Document	2 KB
SymbolicIntegerConstants	10/8/2018 13:22	ASM File	1 KB
SymbolicTextConstants	10/8/2018 13:22	ASM File	1 KB

7 items 1 item selected 622 bytes

```
;;    Author: Marco Martinez
;;    Program: SymbolicIntegerConstants.asm
;;    Date: 10/7/2018
;;    Purpose: Write a program that defines symbolic constants for all seven days
of the week.
;;          Create an array variable that uses the symbols as initializers.
;;
;;    Software Change Record
;;    Name         Date     What
;;    Marco      10/7  Baseline for SymbolicIntegerConstants.asm
;;

.386
.model flat,stdcall
.stack 4096
ExitProcess proto,dwExitCode:dword

MONDAY = 1
TUESDAY = 2
WEDNESDAY = 3
THURSDAY = 4
FRIDAY = 5
SATURDAY = 6
SUNDAY = 7

.data
array BYTE MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY

.stack

.code
main proc

     invoke ExitProcess,0
main endp
end main
```



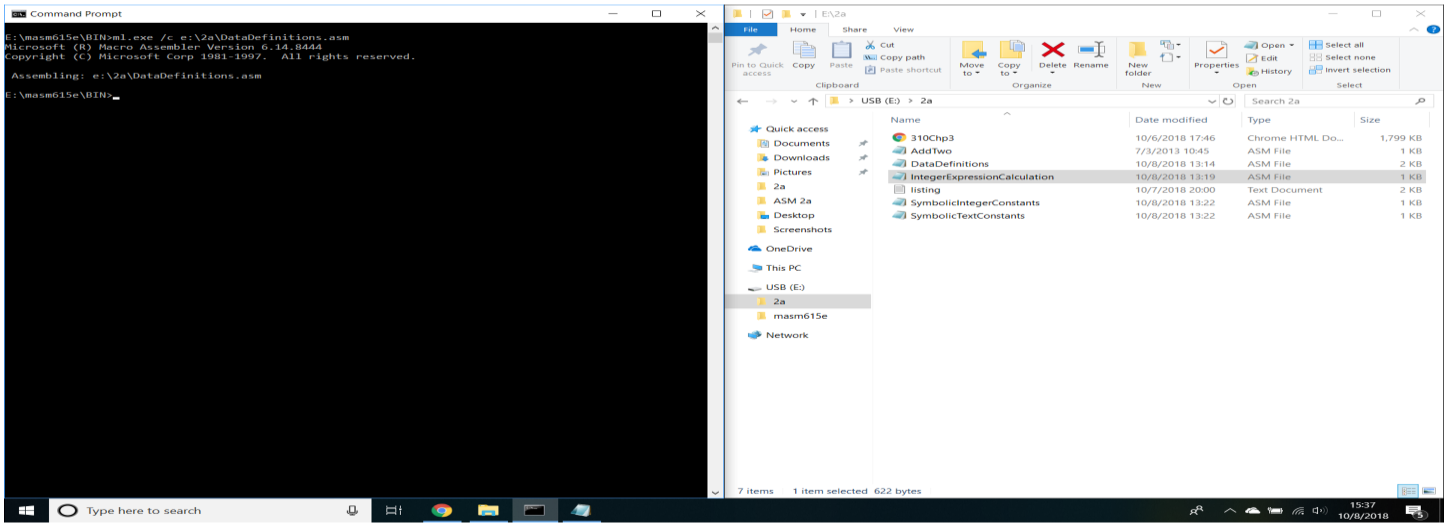
```
E:\masm615e\BIN>ml.exe /c e:\2a\SymbolicIntegerConstants.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

 Assembling: e:\2a\SymbolicIntegerConstants.asm

E:\masm615e\BIN>
```

E:\2a

Name	Date modified	Type	Size
310Chp3	10/6/2018 17:46	Chrome HTML Do...	1,799 KB
AddTwo	7/3/2013 10:45	ASM File	1 KB
DataDefinitions	10/8/2018 13:14	ASM File	2 KB
IntegerExpressionCalculation	10/8/2018 13:19	ASM File	1 KB
listing	10/7/2018 20:00	Text Document	2 KB
SymbolicIntegerConstants	10/8/2018 13:22	ASM File	1 KB
SymbolicTextConstants	10/8/2018 13:22	ASM File	1 KB

7 items

```
;;    Author: Marco Martinez
;;    Program: DataDefinitions.asm
;;    Date: 10/7/2018
;;    Purpose: Write a program that contains a definition of each data type listed
in Table 3-2 in Section 3.4.
;;           Initialize each variable to a value that is consistent with its data
type.
;;
;;    Software Change Record
;;    Name         Date     What
;;    Marco      10/7  Baseline for DataDefinitions.asm
;;

.386
.model flat,stdcall
.stack 4096
ExitProcess proto,dwExitCode:dword

.data
valByte BYTE 255      ; 8bit unsigned integer
valSByte SBYTE -128         ; 8bit signed integer
valWord WORD 65535          ; 16bit unsigned integer
valSWord SWORD -32768       ; 16bit signed integer
valDWord DWORD 4294967295   ; 32bit unsigned integer
valSDWord SDwORD -2147483648     ; 32bit signed integer
valFWord FWORD 1      ; 48bit integer (Far pointer in protected mode)
valQWord QWORD 1      ; 64bit integer
valTByte TBYTE 1      ; 80bit integer
valReal4 REAL4 4.5E4        ; 32bit real, IEEE short real
valReal8 REAL8 5.3E8        ; 64bit real, IEEE long real
valReal10 REAL10 6.7E10          ; 80bit real, IEEE extended real

.stack

.code
main proc

     invoke ExitProcess,0
main endp
end main
```



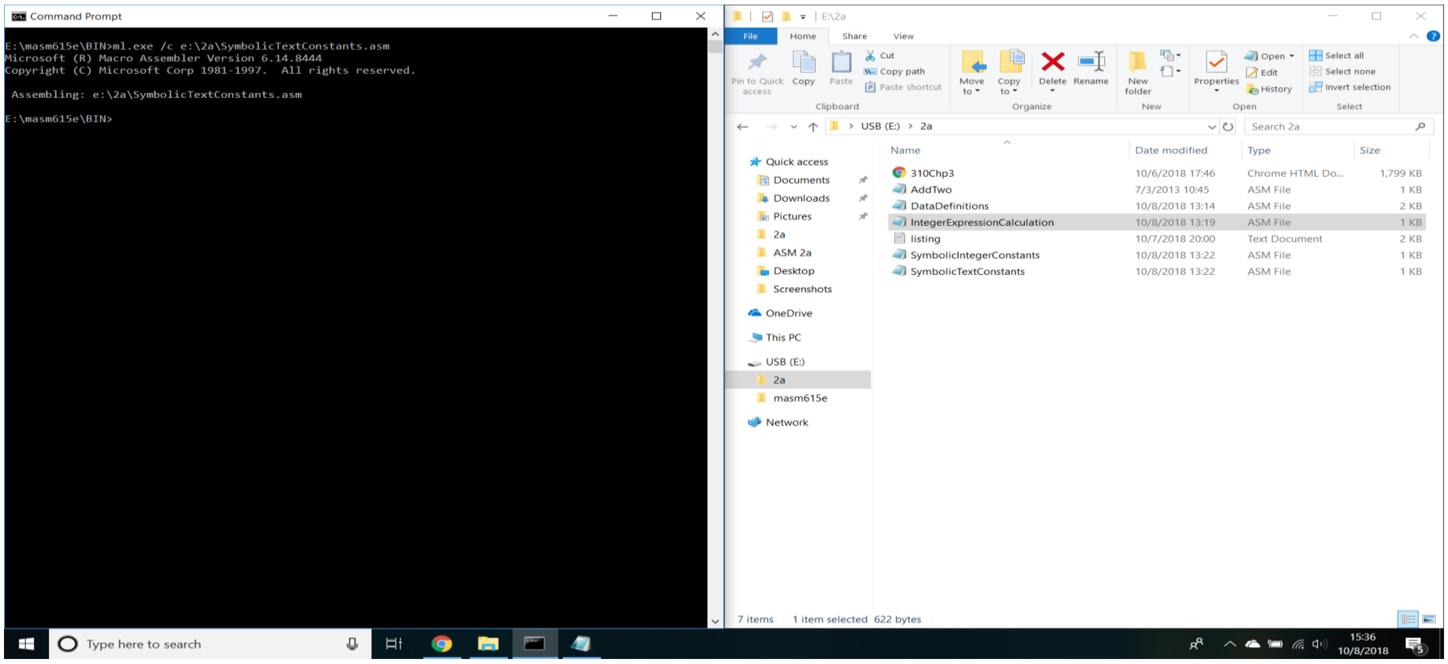
```
E:\masm615e\BIN>ml.exe /c e:\2a\DataDefinitions.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

 Assembling: e:\2a\DataDefinitions.asm

E:\masm615e\BIN>
```

USB (E:) > 2a

Name	Date modified	Type	Size
310Chp3	10/6/2018 17:46	Chrome HTML Do...	1,799 KB
AddTwo	7/3/2013 10:45	ASM File	1 KB
DataDefinitions	10/8/2018 13:14	ASM File	2 KB
IntegerExpressionCalculation	10/8/2018 13:19	ASM File	1 KB
listing	10/7/2018 20:00	Text Document	2 KB
SymbolicIntegerConstants	10/8/2018 13:22	ASM File	1 KB
SymbolicTextConstants	10/8/2018 13:22	ASM File	1 KB

7 items   1 item selected 622 bytes

```
;;    Author: Marco Martinez
;;    Program: SymbolicTextConstants.asm
;;    Date: 10/7/2018
;;    Purpose: Write a program that defines sumbolic names for several string
literals (characters between quotes).
;;          Use each symbolic name in a variable defintion.
;;
;;    Software Change Record
;;    Name          Date      What
;;    Marco      10/7  Baseline for SymbolicTextConstants.asm
;;

.386
.model flat,stdcall
.stack 4096
ExitProcess proto,dwExitCode:dword

MONDAY EQU <'Monday',0>
TUESDAY EQU <'Tuesday',0>
WEDNESDAY EQU <'Wednesday',0>
THURSDAY EQU <'Thursday',0>
FRIDAY EQU <'Friday',0>
SATURDAY EQU <'Saturday',0>
SUNDAY     EQU <'Sunday',0>

.data
array BYTE MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY

.stack

.code
main proc

     invoke ExitProcess,0
main endp
end main
```



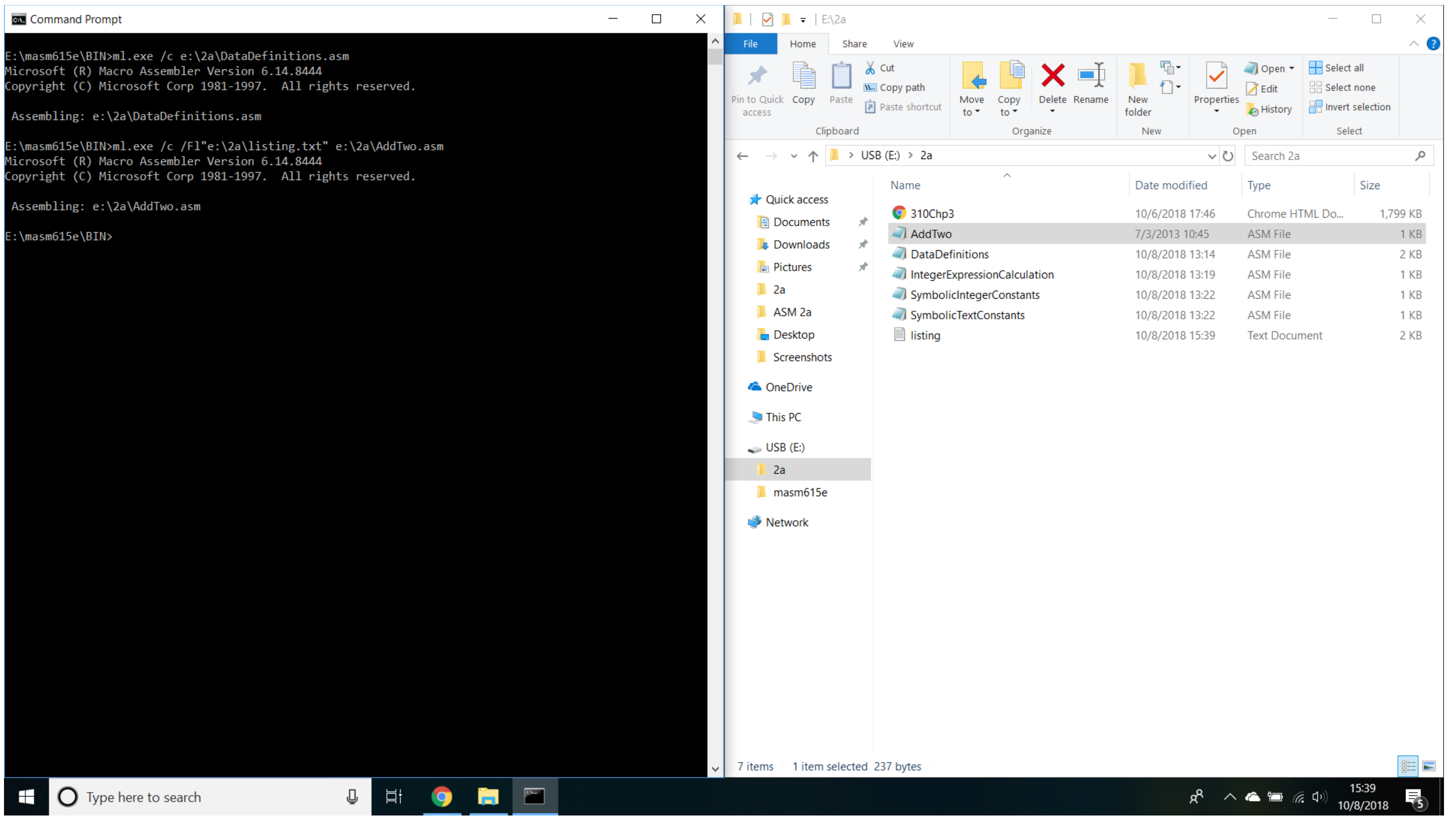
```
E:\masm615e\BIN>ml.exe /c e:\2a\SymbolicTextConstants.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

 Assembling: e:\2a\SymbolicTextConstants.asm

E:\masm615e\BIN>
```

Name	Date modified	Type	Size
310Chp3	10/6/2018 17:46	Chrome HTML Do...	1,799 KB
AddTwo	7/3/2013 10:45	ASM File	1 KB
DataDefinitions	10/8/2018 13:14	ASM File	2 KB
IntegerExpressionCalculation	10/8/2018 13:19	ASM File	1 KB
listing	10/7/2018 20:00	Text Document	2 KB
SymbolicIntegerConstants	10/8/2018 13:22	ASM File	1 KB
SymbolicTextConstants	10/8/2018 13:22	ASM File	1 KB

7 items 1 item selected 622 bytes

```
Microsoft (R) Macro Assembler Version 6.14.8444          10/07/18 20:00:31
e:\2a\AddTwo.asm                                 Page 1 - 1


                        ; AddTwo.asm - adds two 32-bit integers.
                        ; Chapter 3 example

                        .386
                        .model flat,stdcall
                        .stack 4096
                        ExitProcess proto,dwExitCode:dword

 00000000               .code
```
(Starting address for program.)
```
 00000000               main proc
```
(Starting address for program.)
```
 00000000  B8 00000005                  mov   eax,5
```
(The action MOV starts at 00000000 and B8 is the machine code instruction while 00000005 is the constant 32-bit value.)
```
 00000005  83 C0 06                add   eax,6
```
(The action ADD starts at the offset "00000005", 83 is the value of ADD, C0 is the value for the EAX register, and 06 is the value of 6.)
```
                              invoke ExitProcess,0
 0000000F               main endp
```
(This address indicates the end of the program as initiated by "invoke ExitProcess.")
```
                        end main
Microsoft (R) Macro Assembler Version 6.14.8444          10/07/18 20:00:31
e:\2a\AddTwo.asm                                 Symbols 2 - 1




Segments and Groups:

                N a m e                 Size     Length   Align   Combine Class

FLAT . . . . . . . . . . . . . . . GROUP
STACK  . . . . . . . . . . . . . . 32 Bit      00001000 DWord   Stack      'STACK'
_DATA  . . . . . . . . . . . . . . 32 Bit      00000000 DWord   Public  'DATA'
_TEXT  . . . . . . . . . . . . . . 32 Bit      0000000F DWord   Public  'CODE'


Procedures,  parameters and locals:

                N a m e                 Type     Value    Attr

ExitProcess  . . . . . . . . . . . P Near      00000000 FLAT  Length= 00000000
External STDCALL
main . . . . . . . . . . . . . . . P Near      00000000 _TEXT  Length= 0000000F
Public STDCALL


Symbols:

                N a m e                 Type     Value    Attr
```

```
@CodeSize  . . . . . . . . . . . Number      00000000h
@DataSize  . . . . . . . . . . . Number      00000000h
@Interface . . . . . . . . . . . Number      00000003h
@Model . . . . . . . . . . . . . Number      00000007h
@code  . . . . . . . . . . . . . Text        _TEXT
@data  . . . . . . . . . . . . . Text        FLAT
@fardata?  . . . . . . . . . . . Text        FLAT
@fardata . . . . . . . . . . . . Text        FLAT
@stack . . . . . . . . . . . . . Text        FLAT

        0 Warnings
        0 Errors
```



```
E:\masm615e\BIN>ml.exe /c e:\2a\DataDefinitions.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

 Assembling: e:\2a\DataDefinitions.asm

E:\masm615e\BIN>ml.exe /c /Fl"e:\2a\listing.txt" e:\2a\AddTwo.asm
Microsoft (R) Macro Assembler Version 6.14.8444
Copyright (C) Microsoft Corp 1981-1997.  All rights reserved.

 Assembling: e:\2a\AddTwo.asm

E:\masm615e\BIN>
```

Name	Date modified	Type	Size
310Chp3	10/6/2018 17:46	Chrome HTML Do...	1,799 KB
AddTwo	7/3/2013 10:45	ASM File	1 KB
DataDefinitions	10/8/2018 13:14	ASM File	2 KB
IntegerExpressionCalculation	10/8/2018 13:19	ASM File	1 KB
SymbolicIntegerConstants	10/8/2018 13:22	ASM File	1 KB
SymbolicTextConstants	10/8/2018 13:22	ASM File	1 KB
listing	10/8/2018 15:39	Text Document	2 KB

7 items   1 item selected 237 bytes