

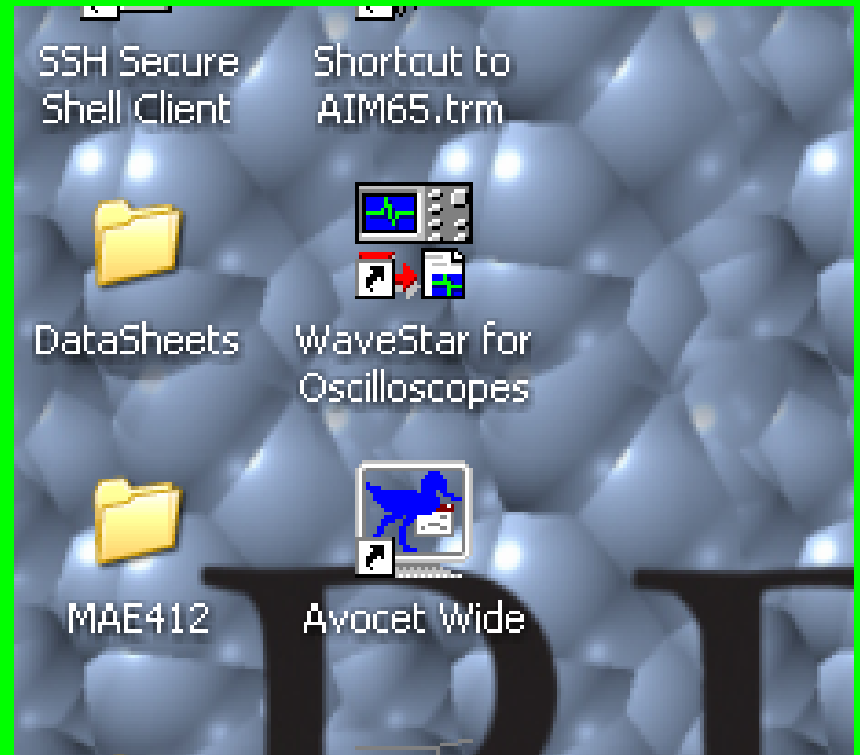


Creating HEX files for the 6502

Using the ADX-65 Cross
Assembler

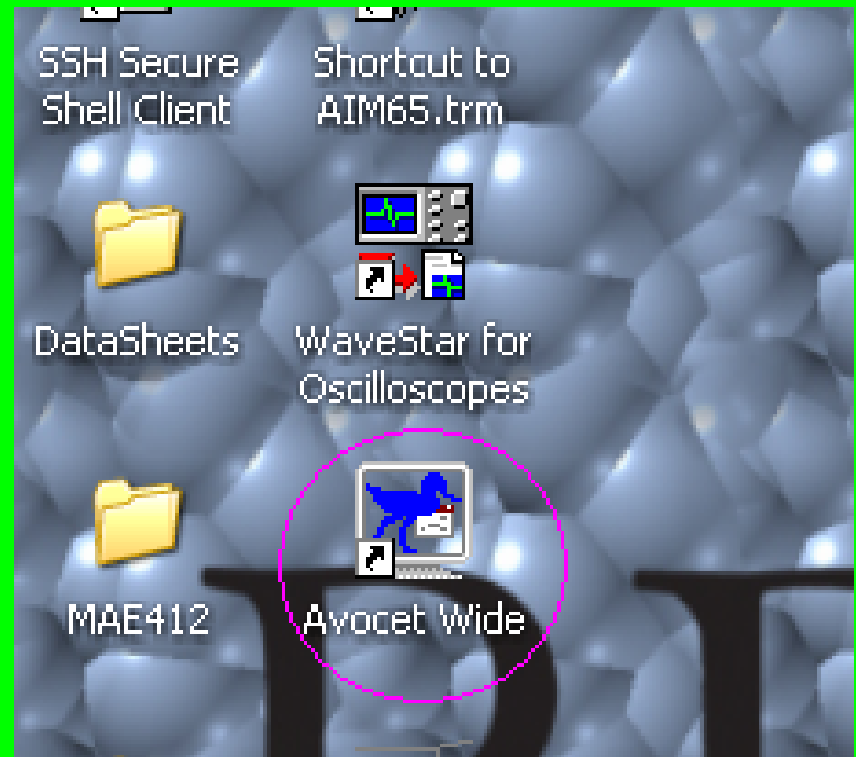


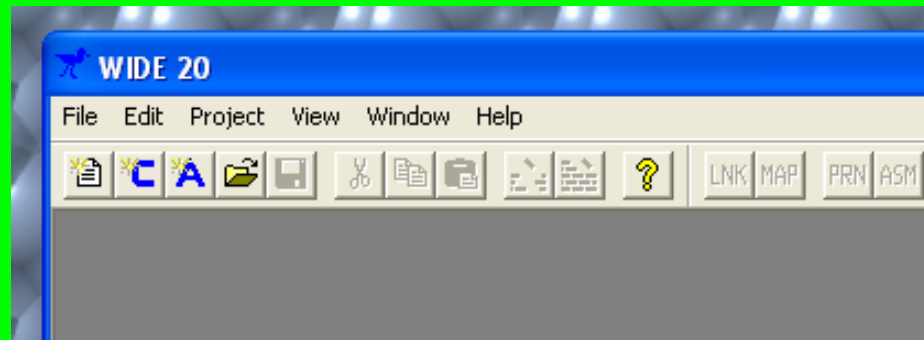
- Double click on the **Avocet Wide** icon on your desktop



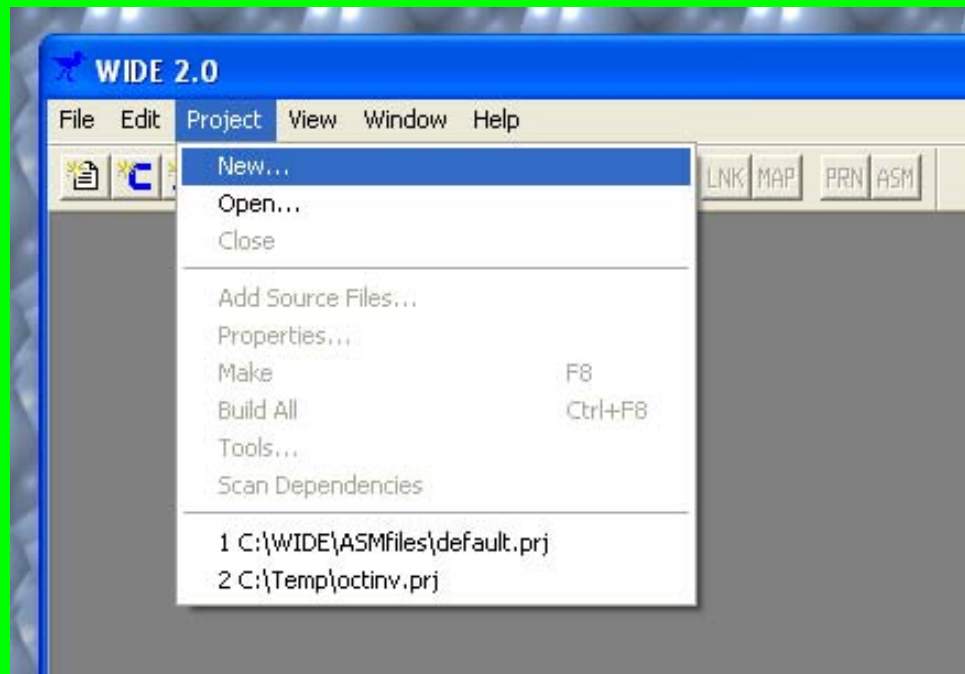


- Double click on the **Avocet Wide** icon on your desktop



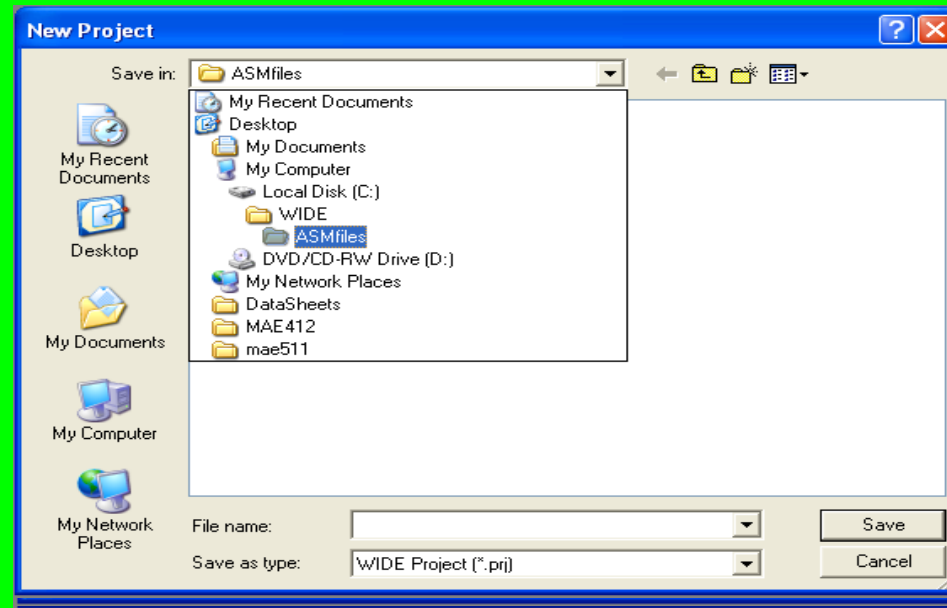


- Create a new project file

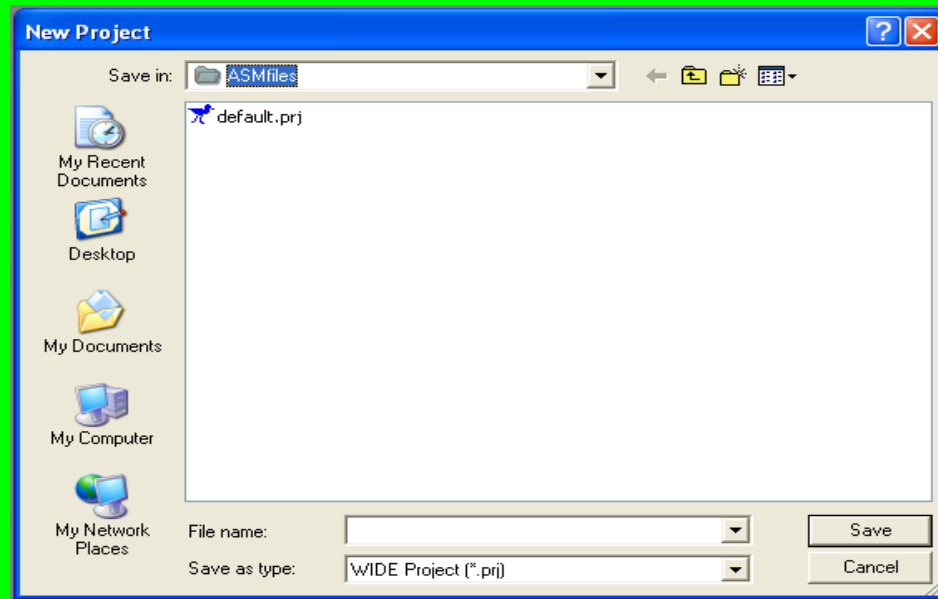


- Select Project>>New from the toolbar

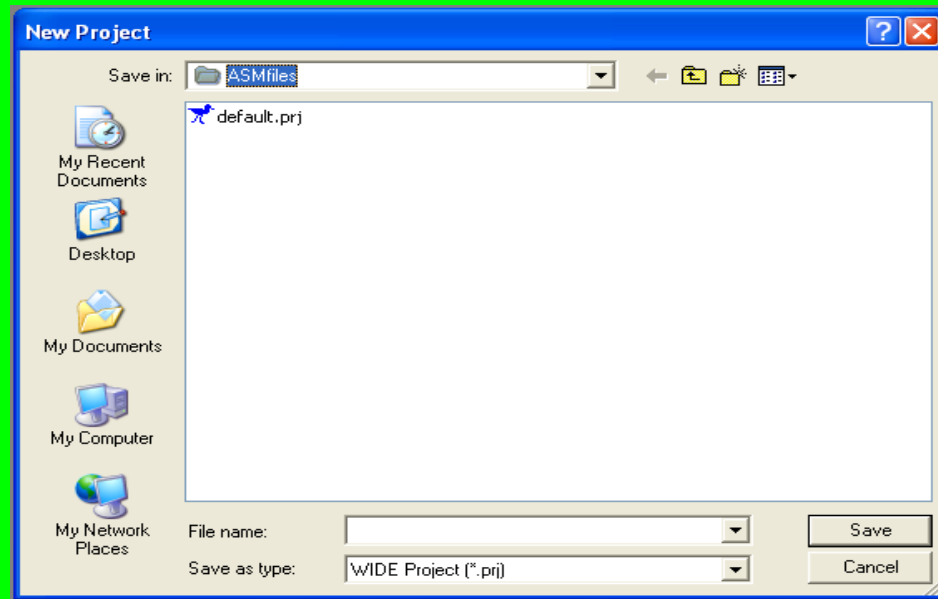
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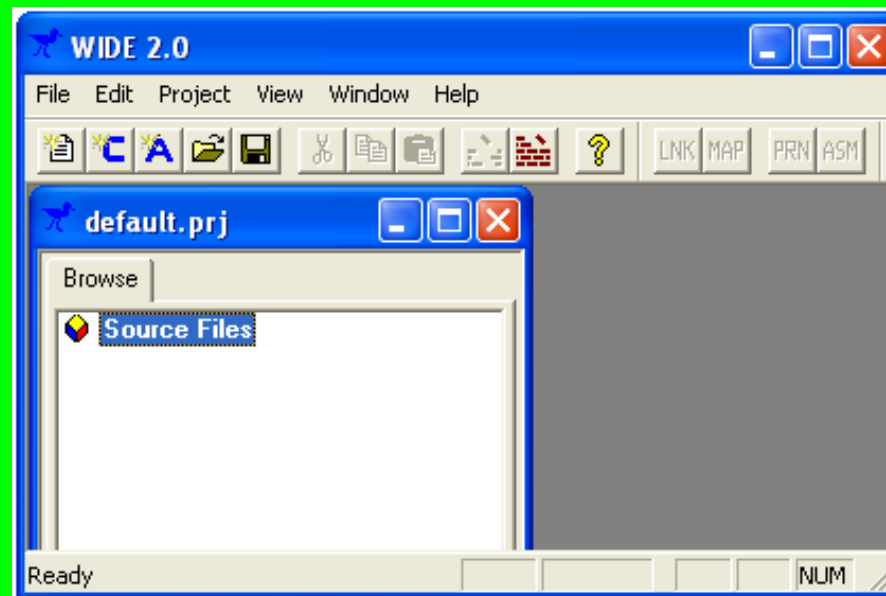
- Navigate to c:\WIDE\ASMfiles



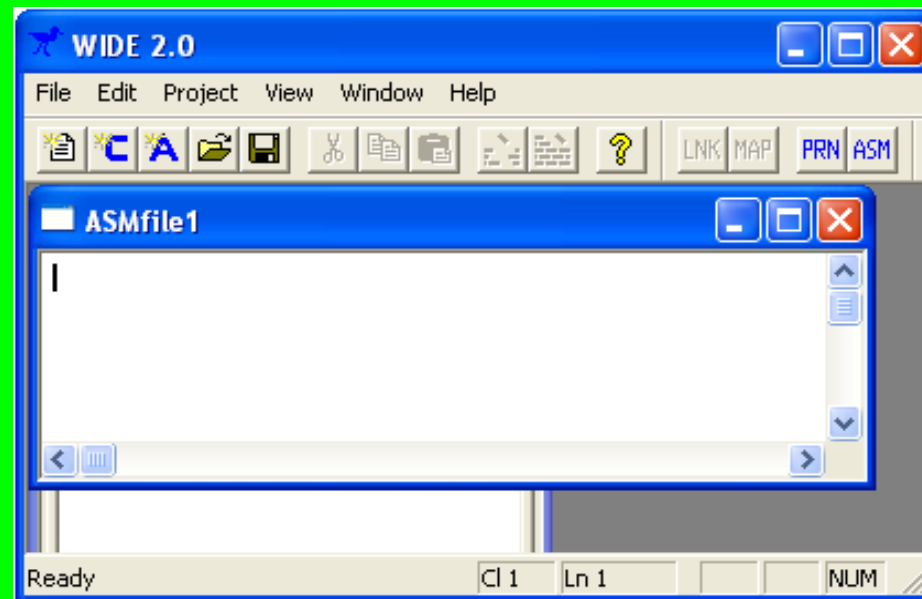
- Select default.prj



- Select default.prj
- Save if the program ask you to



- Click on Create a new asm file



- Now go to the program of your choice, on our website

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```
http://www.princeton.edu/~mac412/CODE/standalone_oct_inv.txt - Windows Internet Explorer
http://www.princeton.edu/~mac412/CODE/standalone_oct_inv.txt
File Edit View Favorites Tools Help
Google
Go
Bookmarks 14 bloode...
AutoLink
AutoP...
Send to...
Settings
http://www.princeton.edu/~mac412/CODE/standalone...
DEFSEG XASMSeg, ABSOLUTE
SEG XASMSeg

org $F000
init
    sei
    cld
    ldx #0ZF
    txx
    lda #0ZF
    sta $a002
    lda #000
    sta $a003
loop
    lda $a001
    eor #0ZF
    sta $a000
    jmp loop
```

•NOTE: The following steps must be done exactly in the fashion shown here

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- To copy text, right click on mouse and choose **Select All**

A screenshot of a web browser window displaying assembly code. The browser's address bar shows the URL 'http://www.princeton.edu/~mae412/CODE/standalone_oct_inv.txt'. The code is displayed in a monospaced font with blue highlighting on several lines. The code includes segment definitions, an initial setup sequence, and a loop.

```
DEFSEG XASMSEG, ABSOLUTE
SEG XASMSEG

org $f000
init sei
    cld
    ldx #$ff
    txe
    lda #$ff
    sta $a002
    lda #$00
    sta $a003
loop lda $a001
    eor #$ff
    sta $a000
    jmp loop
```

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- To copy text, right click on mouse and choose **Select All**
- If you just sweep the text with your mouse to highlight the text, the copying might not work right

A screenshot of a web browser window displaying assembly code. The browser's address bar shows the URL 'http://www.princeton.edu/~mae412/CODE/standalone_oct_inv.txt'. The code is displayed in a monospaced font with several lines highlighted in blue. The code includes segment definitions, an 'org' instruction, an 'init' block with 'sei', 'cld', 'ldx # \$ff', 'txs', 'lda # \$ff', 'sta \$a002', 'lda # \$00', 'sta \$a003', a 'loop' block with 'lda \$a001', 'eor # \$ff', 'sta \$a000', and 'jmp loop'.

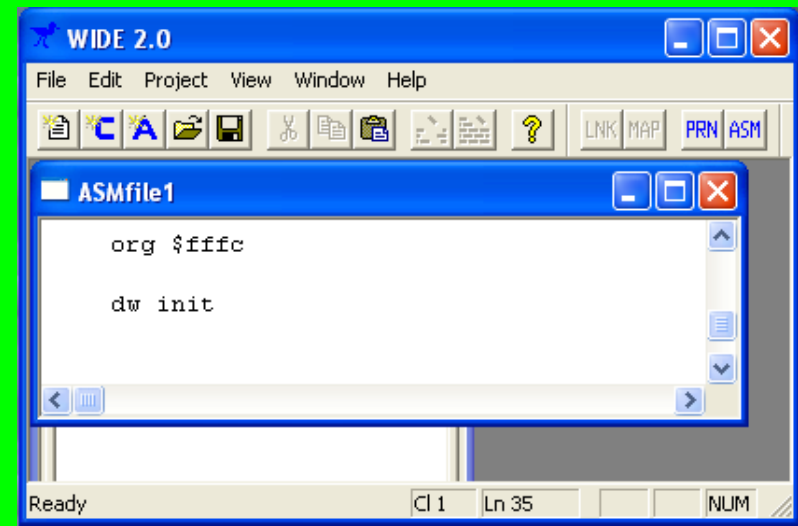
```
DEFSEG XASMSEG, ABSOLUTE
SEG XASMSEG

org $f000
init sei
cld
ldx # $ff
txs
lda # $ff
sta $a002
lda # $00
sta $a003
loop lda $a001
eor # $ff
sta $a000
jmp loop
```

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- To copy text, right click on mouse and choose **Select All**
- If you just sweep the text with your mouse to highlight the text, the copying will not work right
- In the blank asm file window, paste your text





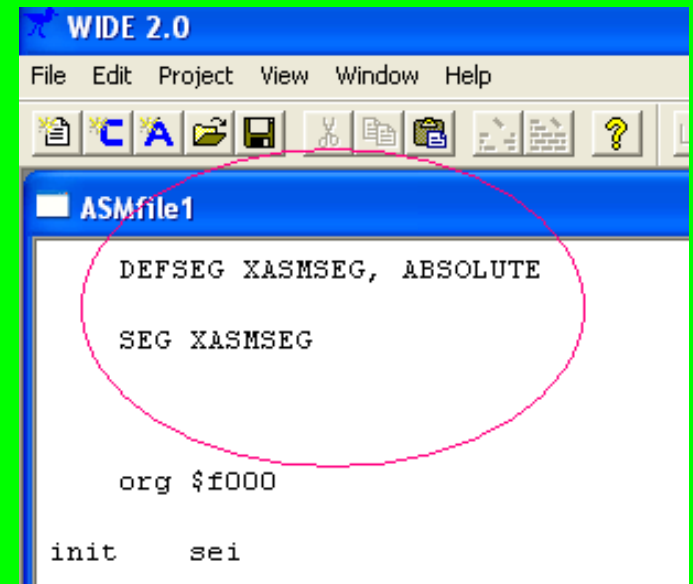
- If the lines:

```
DEFSEG XASMSEG, ABSOLUTE  
SEG XASMSEG
```

- Appear above the line:

```
org $f000
```

- In the beginning of the program, then delete it





- If the lines:

```
DEFSEG XASMSEG, ABSOLUTE  
SEG XASMSEG
```

- Appear above the line:

```
org $f000
```

- In the beginning of the program, then delete it

```
WIDE 2.0  
File Edit Project View Window Help  
ASMfile1  
|  
    org $f000  
init    sei  
  
    cld
```




- If the lines:

```
DEFSEG XASMSEG, ABSOLUTE  
SEG XASMSEG
```

- Appear above the line:

```
org $f000
```

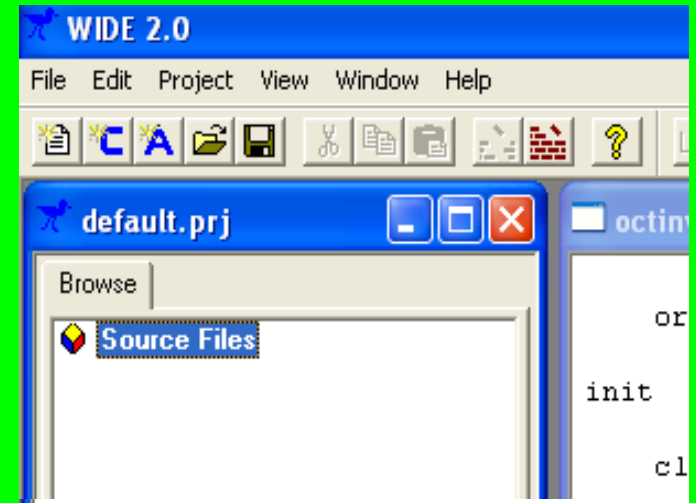
- In the beginning of the program, then delete it
- Save your asm file with a better name

A screenshot of the WIDE 2.0 assembly editor. The window title is "WIDE 2.0". The menu bar includes "File", "Edit", "Project", "View", "Window", and "Help". The toolbar contains icons for file operations (new, open, save, print, copy, paste, undo, redo) and a help icon. The main editing area shows a file named "ASMfile1" with the following assembly code:

```
|  
    org $f000  
  
init    sei  
  
    cld
```

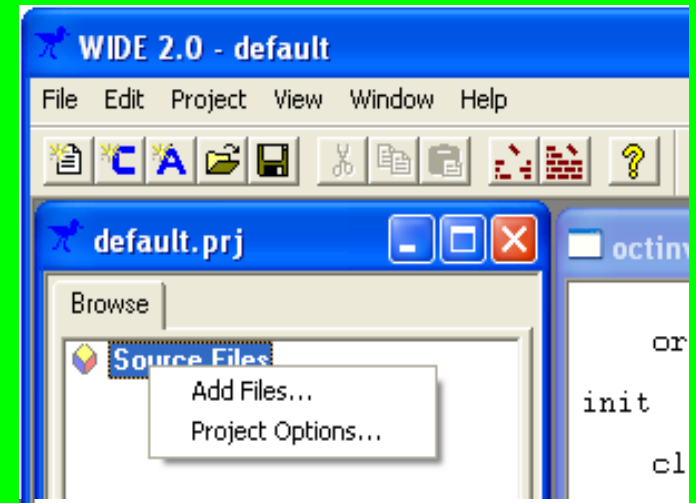


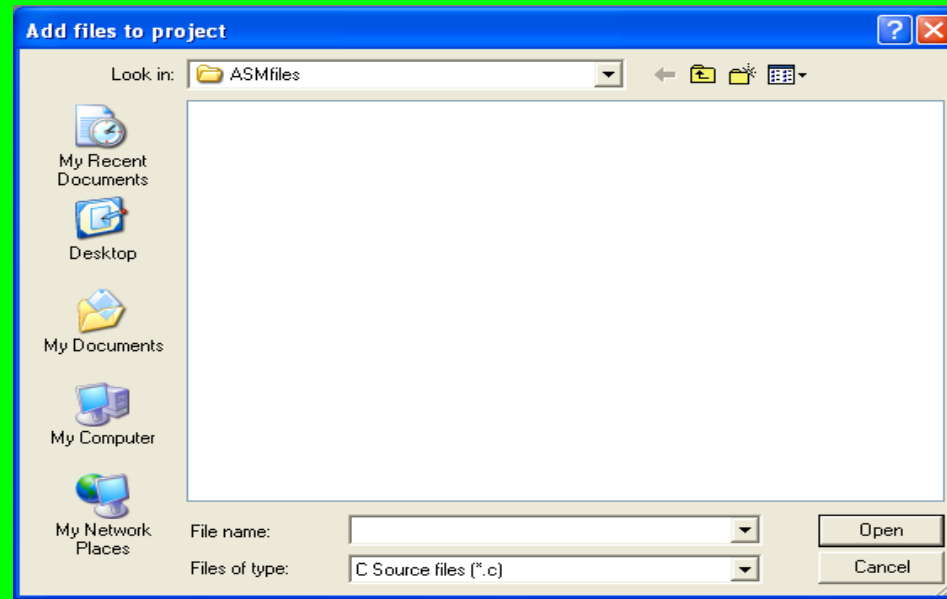
- Now we need to add files to our project
- Right click on **Source Files** within the project window



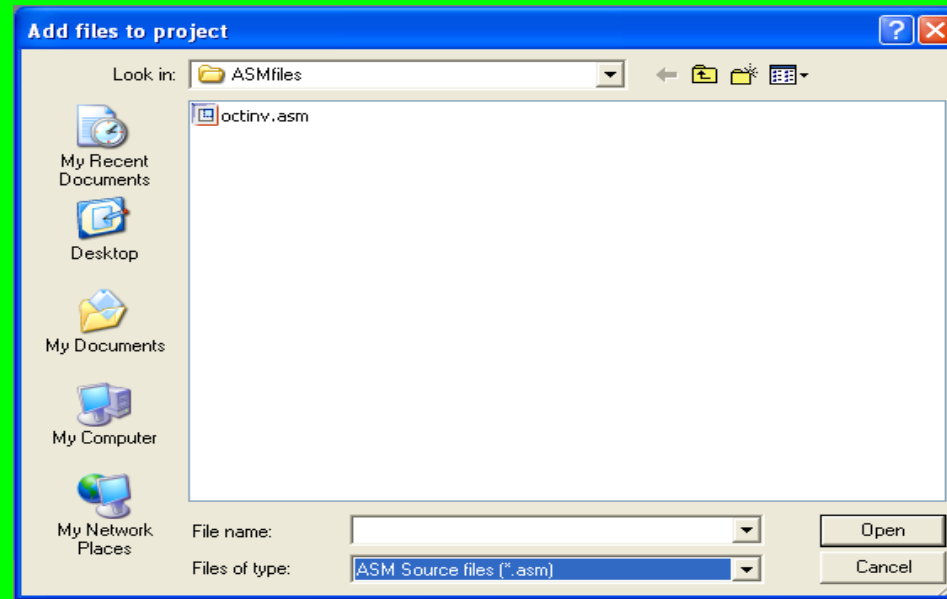


- Now we need to add files to our project
- Right click on **Source Files** within the project window and select **Add Files..**

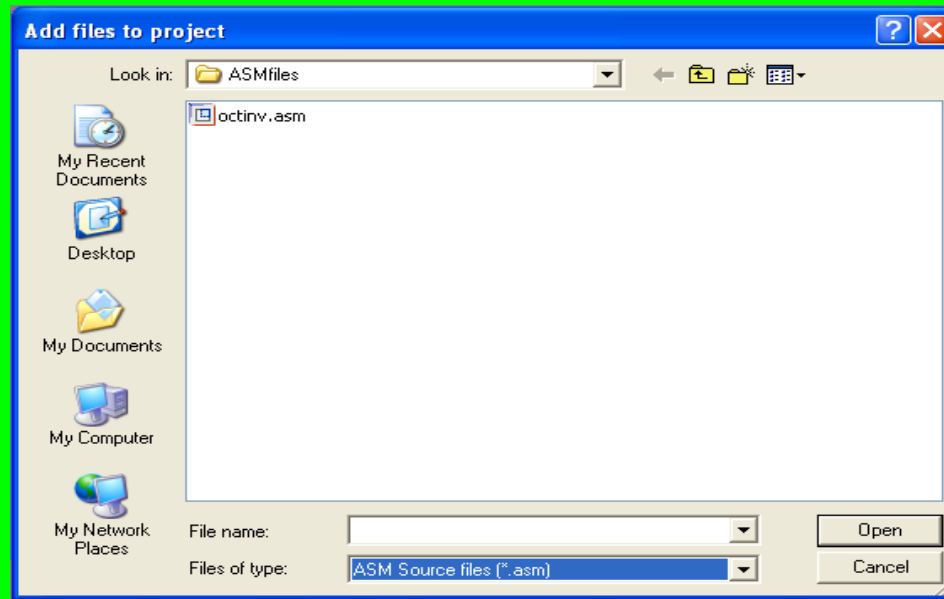




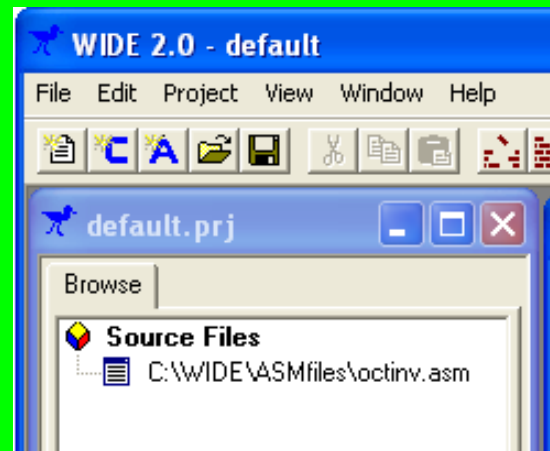
- Change Files of type: **C Source Files (*.c)** to



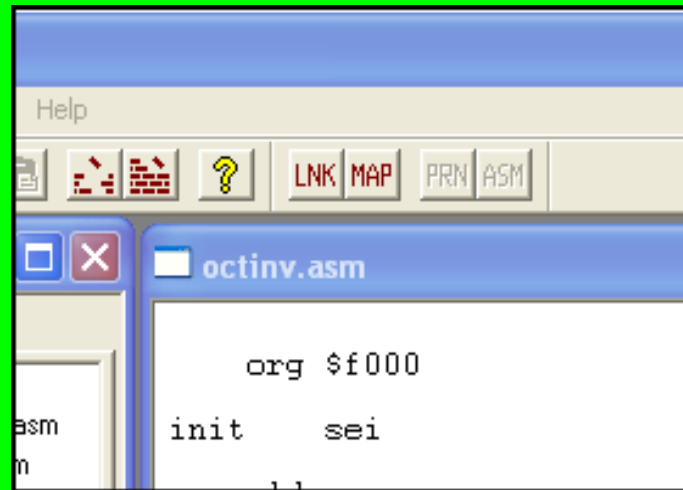
- Change Files of type: **C Source Files (*.c)** to **ASM Source files (*.asm)**



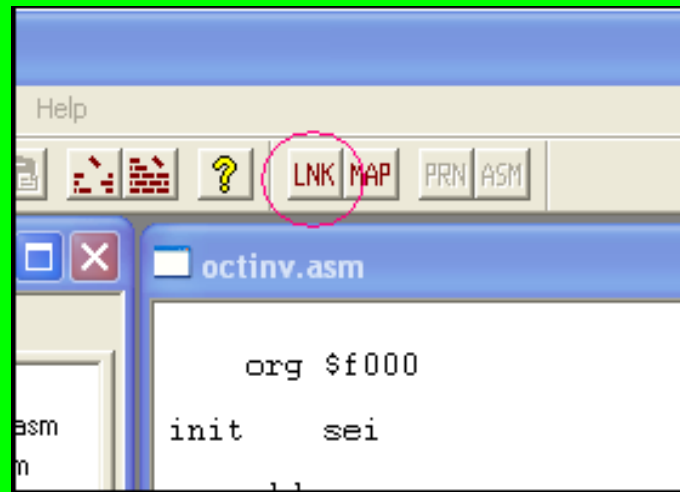
- Change Files of type: **C Source Files (*.c)** to **ASM Source files (*.asm)**
- Select your asm file (save all *.asm files under c:\WIDE\ASMfiles\...)



- Repeat the last couple of steps to add the file `c:\WIDE\X6502\t6502.asm`



- Click on the LNK button on the tool bar



- Click on the LNK button on the tool bar



```
default
* X6502 Xtutor Link File
version 12/5/96                * user defined version #
options : map, high level, Intel hex * load map, high level output, hex out
input   : t6502                * Input File
output  : xtutor               * Output File
locate  : CODE at 0000h        * CODE Link Address
locate  : PAGE0 at 0000h      * PAGE0 Link Address
```

- This is the linking file



```
default
* X6502 Xtutor Link File
version 12/5/96
options : map, high level, Intel hex
input   : t6502
output  : xtutor
locate  : CODE at 0000h
locate  : PAGE0 at 0000h
* user defined version #
* load map, high level output, hex out
* Input File
* Output File
* CODE Link Address
* PAGE0 Link Address
```

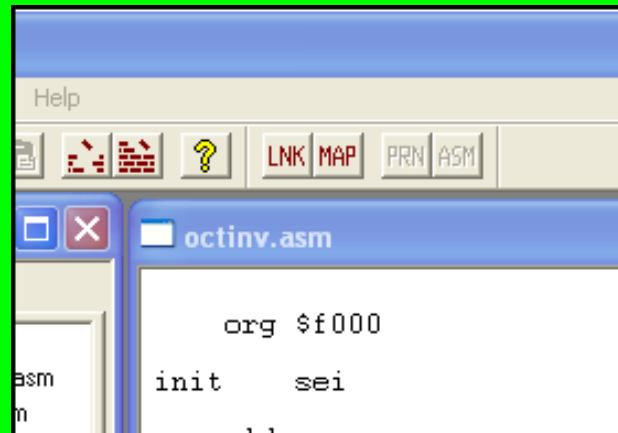
- You need to have the input & output files match your *.asm file name



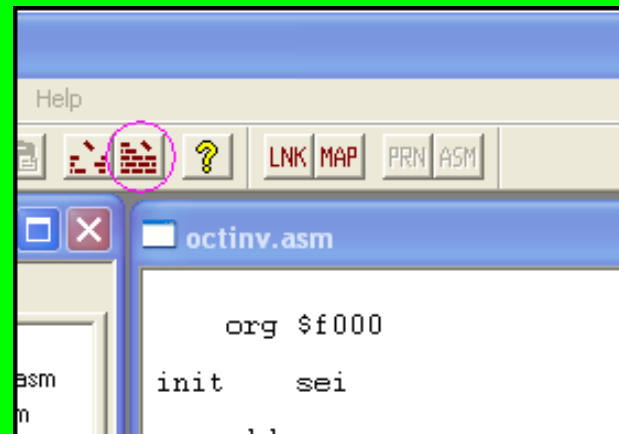
```
default
* X6502 Xtutor Link File
version 12/5/96                * user defined version #
options : map, high level, Intel hex  * load map, high level output, hex out
input   : octinv                * Input File
output  : octinv                * Output File
locate  : CODE at 0000h         * CODE Link Address
locate  : PAGE0 at 0000h       * PAGE0 Link Address
```

- You need to have the input & output files match your *.asm file name

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- Click on the build icon



- Click on the build icon

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```
Output
-----
ADMAKE                               2500AD Make Utility
Copyright (C) 2000 Avocet Systems, Inc.  Version 4.27b
-----
C:\WIDE\bin\x6502.exe -q -d C:\WIDE\ASMfiles\octinv.asm C:\WIDE\ASMfiles\octinv.OBJ

C:\WIDE\bin\link.exe C:\WIDE\ASMfiles\default.LNK

2500 A.D. Linker Copyright (C) 2004 by Avocet Systems, Inc.
#26910, Version 5.08

Input  Filename : octinv
Input  Filename :
Output Filename : octinv
Library Filename :
Options (D,G,P A,R,S[U] C,I,M,N,SM,Z E,H,T,X,1,2,3 <CR> = Default) : DCH

No 'SYMBOLS' Directive in File : octinv.obj

Linker Output Filename : octinv.hex
Disk Listing  Filename : octinv.map
Debug Control Filename : octinv.dcf
Symbol Table  Filename : octinv.sym
Format       : 2500 A.D. High Level

Link Errors : 0          Output Format : Intel Hex
```

- Check your Output window for file names & errors

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```
Output
-----
ADMAKE                               2500AD Make Utility
Copyright (C) 2000 Avocet Systems, Inc.   Version 4.27b
-----
C:\WIDE\bin\x6502.exe -q -d C:\WIDE\ASMfiles\octinv.asm C:\WIDE\ASMfiles\octinv.OBJ

C:\WIDE\bin\link.exe C:\WIDE\ASMfiles\default.LNK

2500 A.D. Linker Copyright (C) 2004 by Avocet Systems, Inc.
#26910, Version 5.08

Input  Filename : octinv
Input  Filename :
Output Filename : octinv
Library Filename :
Options (D,G,P A,R,S[U] C,I,M,N,SM,Z E,H,T,X,1,2,3 <CR> = Default) : DCH

No 'SYMBOLS' Directive in File : octinv.obj

Linker Output Filename : octinv.hex
Disk Listing  Filename : octinv.map
Debug Control  Filename : octinv.dcf
Symbol Table  Filename : octinv.sym
Format        : 2500 A.D. High Level

Link Errors : 0                               Output Format : Intel Hex
```

- Check your Output window for file names & errors



- Follow instruction for the EMP-21
- Your *.hex file is in c:\WIDE\ASMfiles\



**THE
END**