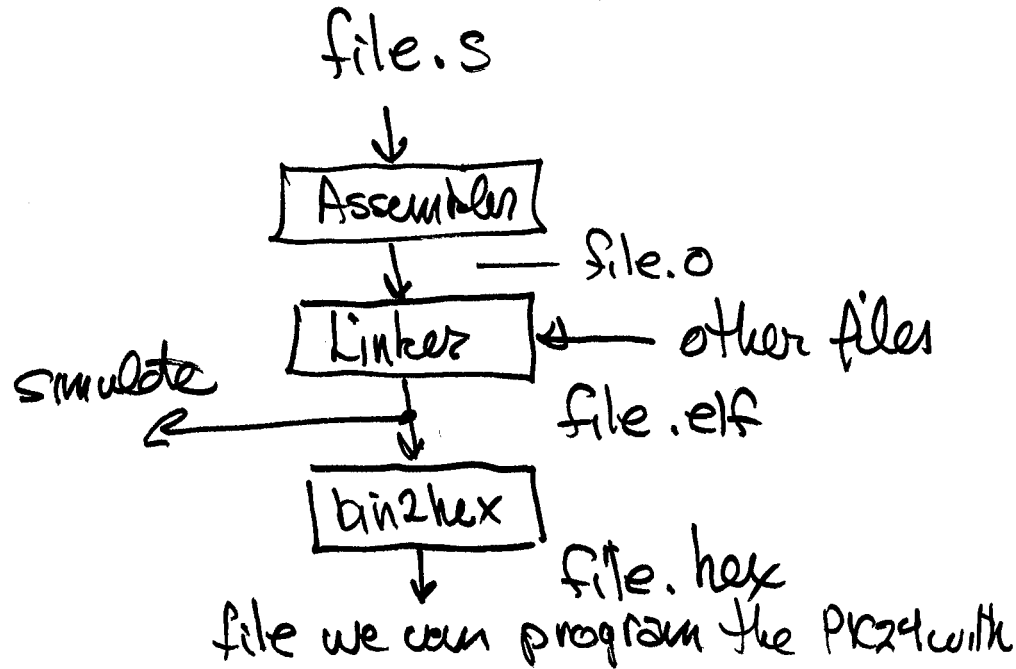


EE2361 - lecture 11

9/30/16

Homework 2  
is due next Wed, 10/5

# Assembly and the assembler



The microchip Assembler  
(and other tools such as C compiler)

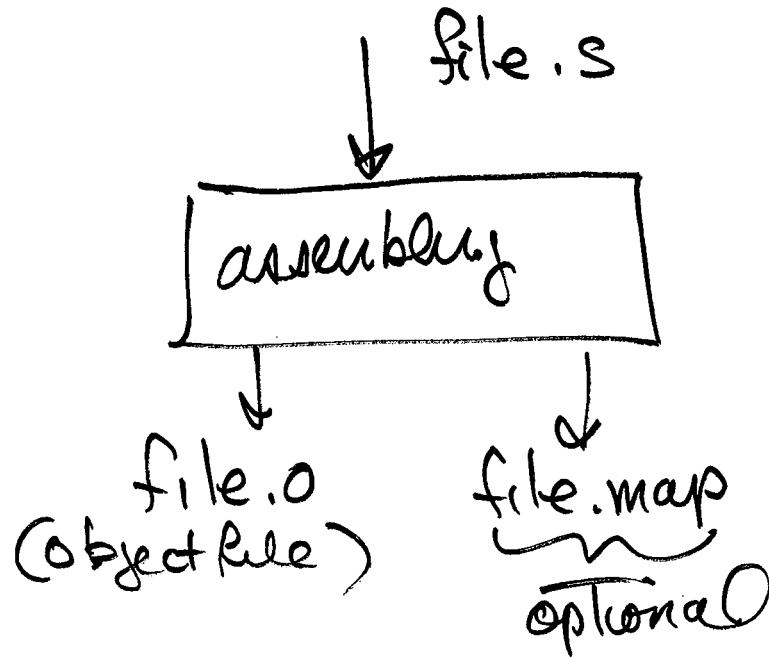
These are a part of the GNU Assembler  
(and C compiler + utilities) from  
the FSF

⇒ this is the basis of the  
microchip XC8, XC16, and XC32  
compilers

# Create Assembly Code

- From a C compiler  
(or other language compiler)
- Or do this manually

# The XC16 assembler



Assembler Code format (line of "code")

[label]:    [mnemonic] [operands]    [;comment]  
optional    required    0-8    optional  
                                 of these    /\* \*/

These are for instructions

In assembly code

## Directives

These tell the assembler what to do, these all begin with •

• equ , • bss , • end

## Operators

Typically arithmetic operations  
and other special operators

From last time we had  
the swap routine

⇒ look at swap.s

pointed out directives



### 3 standard defined sections

- `text` - a section with executable code
- `bss` - for uninitialized data
- `data` - for initialized data

look at assembly from  
discussion 3

directives

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include file for PIC24FJ64GA002  
linker file for       "