

Chapter 4 book

Software development

Requirements



Design (algorithms)



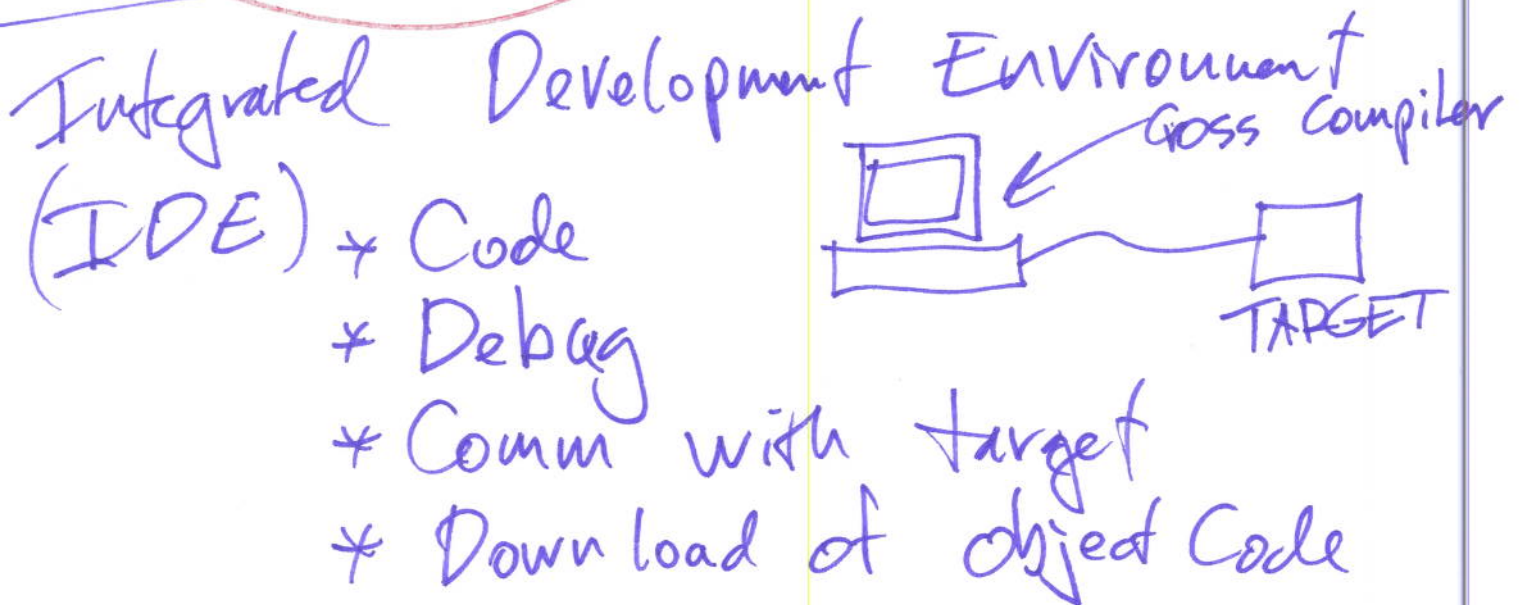
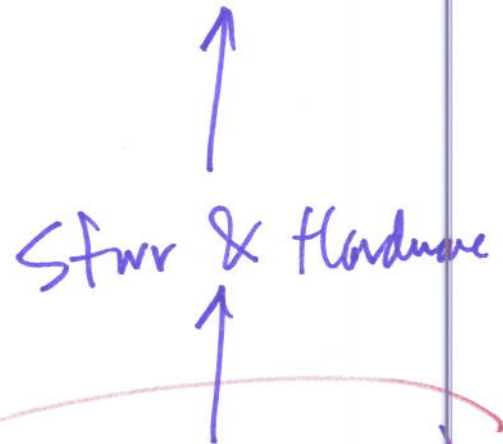
Code



Test (unit)



Test (integrate)



## Tools in a IDE

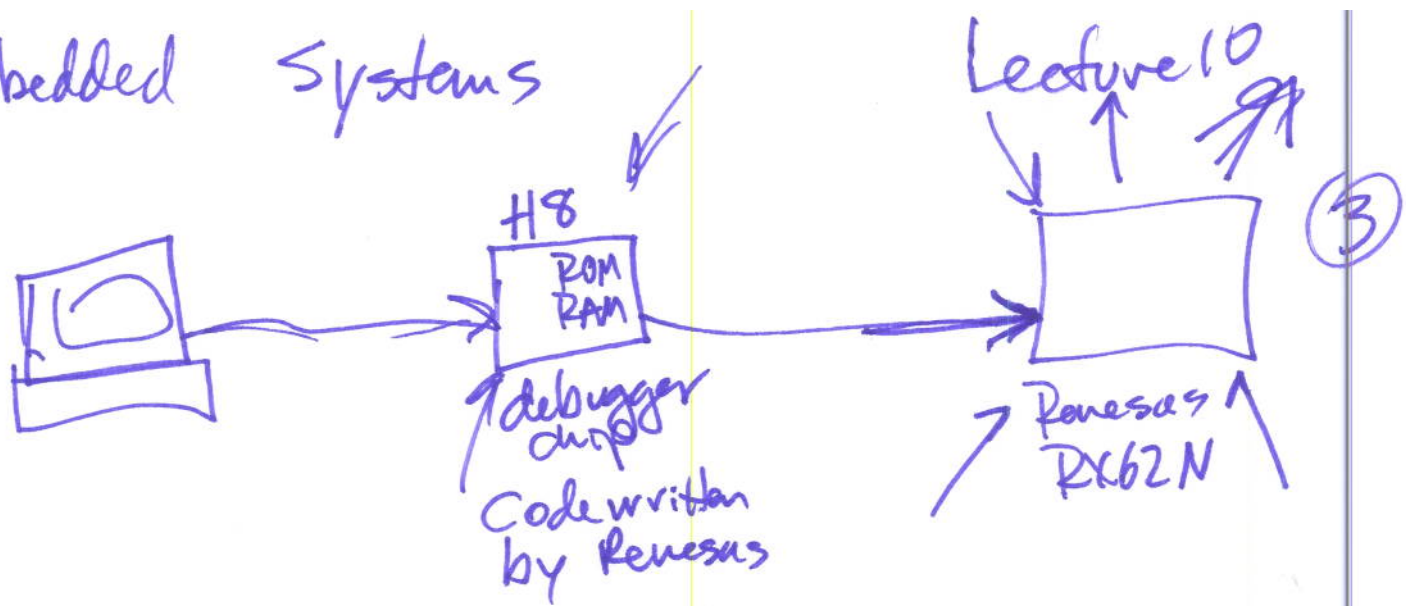
- \* Editor - full featured
- \* Project "creator"
- \* Workspace window
- \* Down loader
- \* Compiler
- \* Linker
- \* Debugger
- \* Simulator

What do you need to know about your embedded system? (Hardware)

- \* processor speed
- \* memory → RAM, ROM (Flash) EEPROM  
 size location external  
 x0000 0000
- \* Which chip (Variant of RX62N) →
- \* Definition / Mapping of I/O peripherals (external to the microcontroller)  
 include file .h
- \* Libraries / tools / existing code



# Embedded Systems



## Running the debugger

## How the Compiler/Linker works On a test

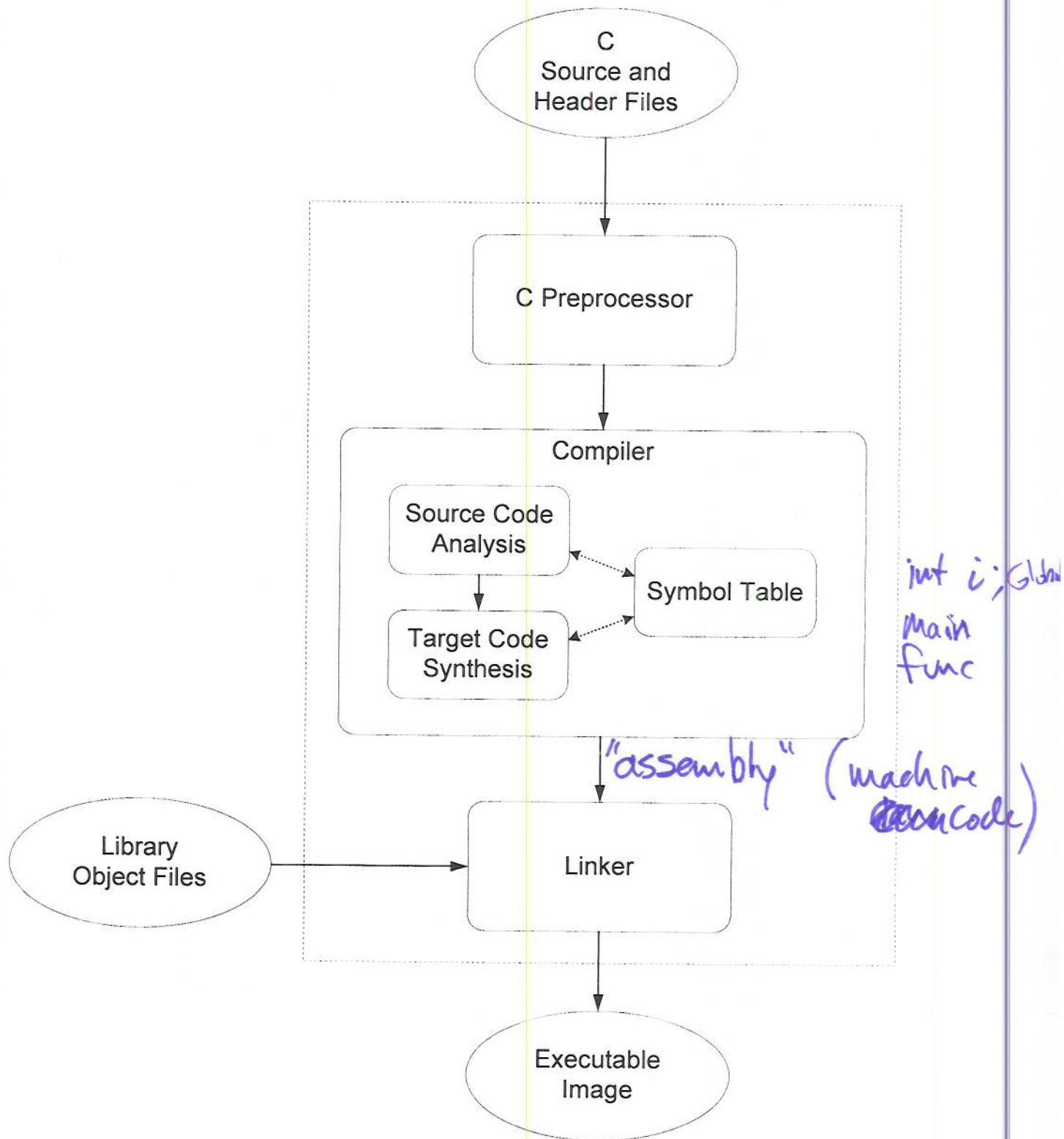
Preprocessor

#define

Syntax

PORT0

0x8C000

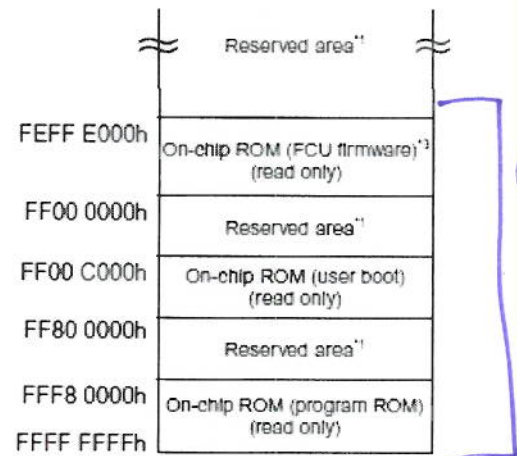
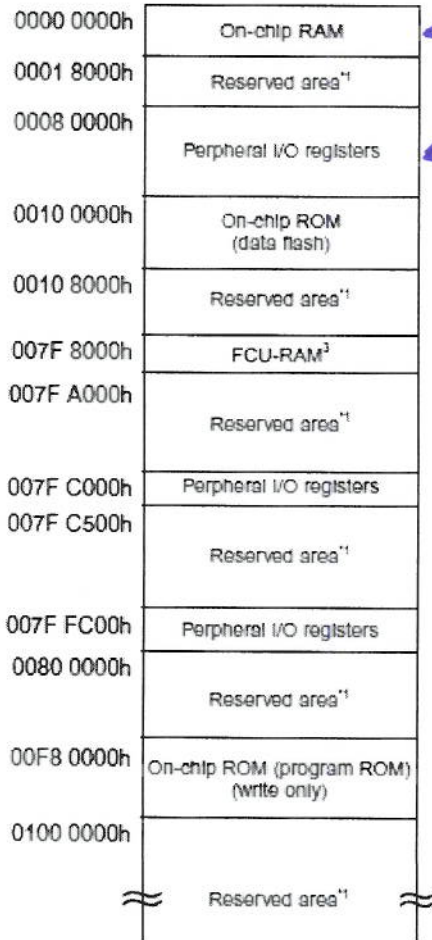


# Embedded Systems

Global Variable  
Timers  
Ports  
UARTS

## Lecture 10

(5)



```
//ioedfine.h
#define PORT0 (*(volatile struct st_port0 __evenaccess *) 0x8C000)
#define PORT1 (*(volatile struct st_port1 __evenaccess *) 0x8C001)
#define PORT2 (*(volatile struct st_port2 __evenaccess *) 0x8C002)
#define PORT3 (*(volatile struct st_port3 __evenaccess *) 0x8C003)
#define PORT4 (*(volatile struct st_port4 __evenaccess *) 0x8C004)
#define PORT5 (*(volatile struct st_port5 __evenaccess *) 0x8C005)
#define PORT6 (*(volatile struct st_port6 __evenaccess *) 0x8C006)
#define PORT7 (*(volatile struct st_port7 __evenaccess *) 0x8C007)
#define PORT8 (*(volatile struct st_port8 __evenaccess *) 0x8C008)
#define PORT9 (*(volatile struct st_port9 __evenaccess *) 0x8C009)
#define PORTA (*(volatile struct st_porta __evenaccess *) 0x8C00A)
#define PORTB (*(volatile struct st_portb __evenaccess *) 0x8C00B)
#define PORTC (*(volatile struct st_portc __evenaccess *) 0x8C00C)
#define PORTD (*(volatile struct st_portd __evenaccess *) 0x8C00D)
#define PORTE (*(volatile struct st_porte __evenaccess *) 0x8C00E)
#define PORTF (*(volatile struct st_portf __evenaccess *) 0x8C00F)
#define PORTG (*(volatile struct st_portg __evenaccess *) 0x8C010)
```