

HOND-i INTEGRATED TECHNOLOGIES PVT LTD

A .Basics of embedded:

1. what is embedded?
2. what is real time?
3. why embedded?
4. what is computer language?
5. What is debug?
- 6.what is assembler?
- 7.what is cross compiler?
- 8.what is compiler?
9. what is hex code?
- 10.What is hardware?
- 11.Defferent types of controller?
- 12.How to calculate speed of processors?
- 13.Defferent types of electric and electronic components.
- 14.What is embedded C?
- 15.What is IDE?
- 16.What is GNU gcc compiler?

B. OS concept:

- 1.Basics of operating system.
- 2.scheduling algorithm
- 3.interprocessing communication.
Defferent kinds of semaphores.
Other methods of interprocessing.
4. networking communication.
- 5.application level programming
- 6.kernel level programming.
- 7.driver
- 8.memory management

C.Embedded processor architectures and software development for processors:

- 1.2 Overview
 - 1.2.1 Characteristics of Embedding Computing Applications
 - 1.2.2 Concept of Real time Systems (Free RTOS)
 - 1.2.3 Challenges in Embedded System Design.....
2. Embedded System Architecture
 - 2.1 Instruction Set Architecture
 - 2.1.1 CISC and RISC instruction set architecture
 - 2.2 Basic Embedded Processor/Micro controller Architecture
 - 2.2.1 CISC Examples
 - 2.2.1.1 8051
 - 2.2.2 RISC Example
 - 2.2.2.1 ARM
 - 2.2.3 DSP Processors
 - 2.2.4 Harvard Architecture
 - 2.2.4.1 PIC
 - 2.3 Memory System Architecture
 - 2.3.1 Caches
 - 2.3.2 Virtual Memory
 - 2.3.3 Memory Management Unit and Address Translation

- 2.4 I/O Sub-system.
- 2.4.1 Busy-wait I/O
- 2.4.2 DMA
- 2.4.3 Interrupt driven I/O
- 2.5 Co-processors and Hardware Accelerators
- 2.6 Processor Performance Enhancement
- 2.6.1 Pipelining
- 2.6.2 Super-scalar Execution

3. Designing Embedded Computing Platform

- 3.1 Using CPU Bus.
- 3.1.1 Bus Organization
- 3.2 Memory Devices and their Characteristics
- 3.2.1 RAM
- 3.2.2 ROM, UVRAM, EEPROM, Flash Memory
- 3.2.3 DRAM
- 3.3 I/O Devices
- 3.3.1 Timers and Counters
- 3.3.1.1 Watchdog Timers
- 3.3.2 Interrupt Controllers.
- 3.3.3 A/D and D/A Converters
- 3.3.4 Displays
- 3.3.5 Keyboards
- 3.4 Component Interfacing
- 3.4.1 Memory Interfacing
- 3.4.2 I/O Device Interfacing
- 3.5 Designing with Processors
- 3.5.1 System Architecture
- 3.5.2 Hardware Design
- 3.5.2.1 FPGA Based Design

4. ARM

- 4.1.1 Registers
- 4.1.2 Modes
- 4.1.3 Exception handling
- 4.1.4 Instruction sets
- 4.1.5 Coprocessors
- 4.1.6 Thumb
- 4.1.7 Jazelle
- 4.2 ARM PROCESSOR CORE
- 4.2.1 ARM7TDMI and ARM9TDMI pipelines
- 4.2.2 Datapaths and instruction decoding
- 4.2.3 Overview of ARM9E-S, ARM10, StrongARM and Xscale
- 4.3 ARM DEVELOPER SUITE (ADS) OVERVIEW
- 4.3.1 Compilers, assembler, linker
- 4.3.2 Codewarrior
- 4.3.3 debuggers
- 4.4 ARM AND THUMB INSTRUCTION SETS
- 4.4.1 Overview of the ARM and Thumb Instruction Sets
- 4.4.2 ARM / Thumb interworking : mixing ARM and Thumb code in the same application
- 4.4.3 Memory interface
- 4.4.4 Clocking and interrupts on the ARM7TDMI

- 4.4.5. Dealing with interrupts and other exceptions
- 4.4.6. one micro controller based project
- 4.4.7. Linux operating system details.
- 4.4.8. Linux driver development basics
- 4.4.9. one linux driver development project.
- 4.5.0. eclipse IDE using cygwin for arm processors.
- 4.5.1. using of make file concept.