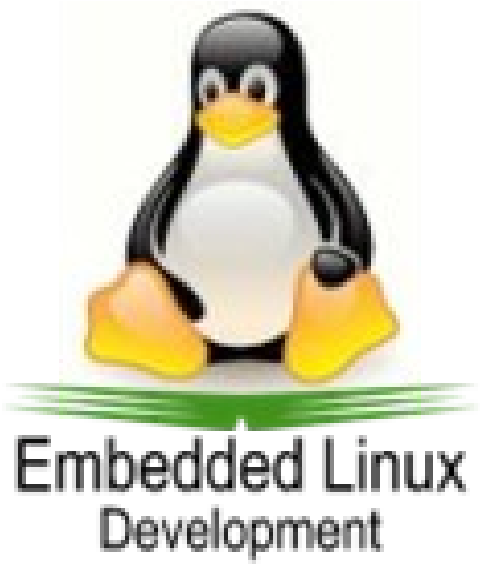
LINUX DEVICE DRIVER AND KERNEL PROGRAMMING

PREREQUISITE : Basic Linux and File Systems

LINUX KERNEL BOARD BRINGUP & POARTING ON BEAGLEBONE

CH1. Genesis of Linux project : : Introduction

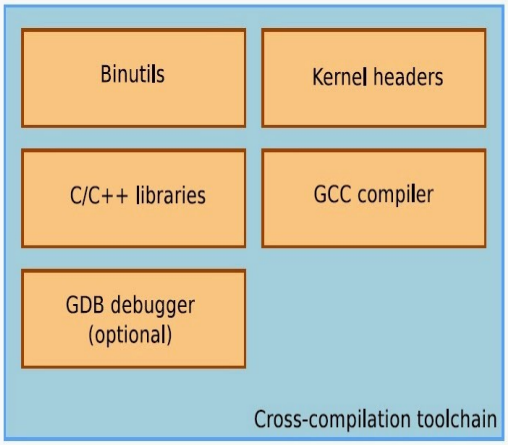


- Element 1:Tool chain (Air)
- Element 2:Boot loader (Earth)
- Element 3:Kernel (Fire)
- Element 4:User space (Water)

CH 2: Toolchain Setup : :Introduction to Toolchain

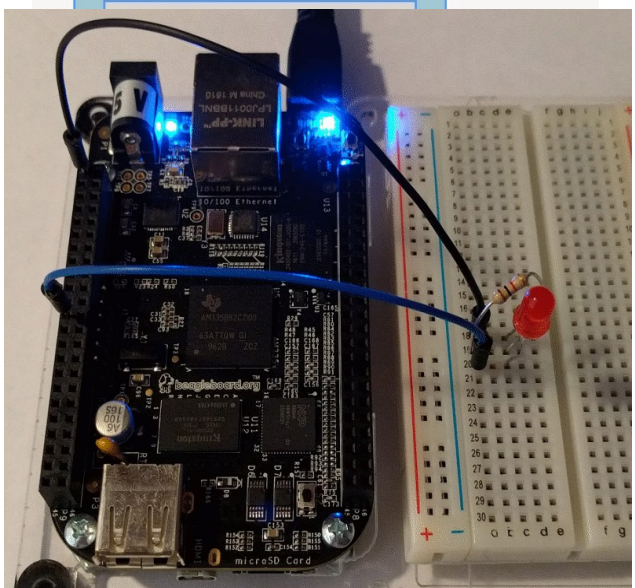
- What is Toolchain.
- Toolchain Components
- Building Toolchain
- Build Systems for Toolchain
- Toolchain Setup Environment
- Toolchain compilation and usage

CH 3: Bootloader Compilation : : Introduction to Bootloader



- What is Loader
- What is Bootloader
- 1st and 2nd Stage Bootloader
- U-Boot Bootloader Porting on New
- U-Boot Commands Lists
- Bootloader Cross-Compilation
- Downloading on Target board
- Bootloader commands and usage,
- Bootloader code customization, U-Boot.
- U-Boot Image for Target Board

CH 4: Kernel Configuration : : Linux kernel Cross Compilation



- Browsing Linux Kernel Source
- Visualizing Kernel Source Tree
- Cross-Compilation of Kernel Source
- Generating Kernel Image
- uImage,zImage,dtb
- uImage on Target Board
- Application development and Cross Compilation

CH 5: Porting Linux kernel,U-boot images on Target board

- Sd Card partitioning
- Wrtting uImage,U-boot.bin into Sd cards
- Building the Embedded Board Using SD-Card for rootfs

- Configuring NFS and using rootfs over NFS
- Building the Embedded Board Using NFS

CH 6: Programming for Target board BBB

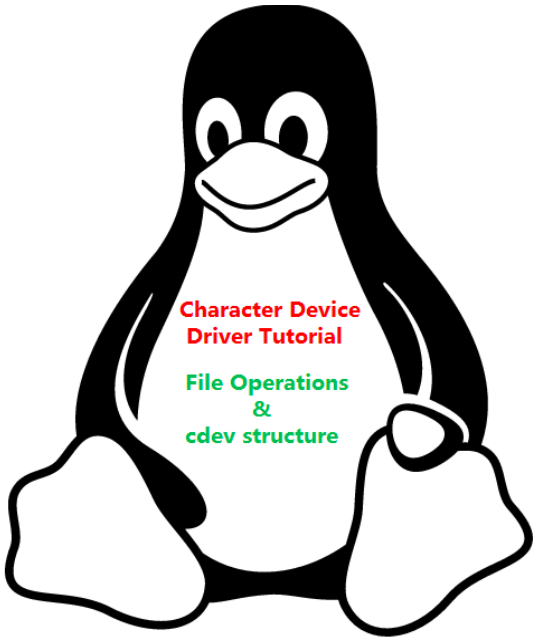
- Testing User Application program for BBB
- Setting IN And OUT direction for GPIO pins and Blinking LED by echoing zero or one.
- Wrtting Device Drivers Program for on board 4 user LED and controlling through User Application Program.
- Wrtting Device Drivers Program for external LED and Interfacing with BBB and controlling through User Application Program.
- Registering Interrupt handler on BBB

CH 7: AN INTRO. TO DEVICE DRIVERS

- Role of the Device Drivers
- Splitting the kernel
- Classes of devices and modules
- Kernel Architecture or Model

CH 8: BUILDING AND RUNNING MODULES

- Types of Modules in the kernel
- Writing Your first kernel module
- Module Related Commands
- Kernel Module vs Applications
- Compiling Modules
- Loading and Unloading Modules
- Module Parameters
- Modules and Exporting Symbols



Total fees = Rs. 5,100 + 18% GST = Rs. 6,000(appx.)
Total duration = 2 Days 9.30 AM to 5.30 PM (Sat. & Sun.)

Embisyslabs @Bangalore
info@embisyslabs.com
+91-88848 67053