

Linux Device Driver Development Meet-and-Greet

Jonathan Velasco

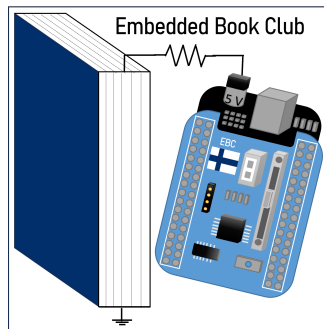
September 9th, 2023

Embedded Book Club Finland

We're knowledge sharing enthusiasts, focused on hosting in-person events, to bond over technical topics related to embedded systems.

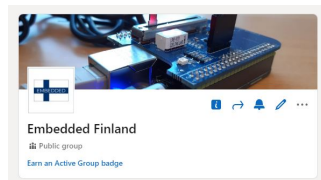
Our goal is to

- Create a community focused on Embedded Systems and related topics
- Share knowledge, and to learn about new topics, trends and practices
- Having fun learning and working on projects together



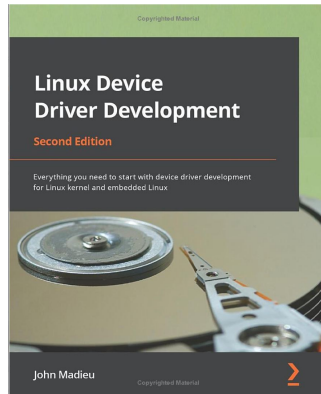
Introduction

- Who am I? Jonathan Velasco
- Who are you?
- Profession, company?
- Previous experience in Embedded, Linux, etc
- Interests



Points to Address

- Book:
Linux Device Driver Development
Author: John Madieu.
Second Edition.
Publishing Company: Packt
- Where to obtain the material and costs
- Sharing information
- Rotation system and Event Recurrence



NO PART OF THIS BOOK MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PUBLISHER. EXCEPT IN THE CASE OF BRIEF QUOTATIONS EMBEDDED IN CRITICAL ARTICLES OR REVIEWS.

Book - Preface: What does the book offer

- The book starts with two general chapters to set-up the environment and go over the basics of device drivers
- Thereafter, the book covers development based on Linux subsystems: industrial input/output (IIO), general-purpose input/output (GPIO), Interrupt request management (IRQ), and Inter-integrated Circuit (I2C) and Serial Peripheral Interface (SPI)
- Source code tested on x86 and UDOO QUAD (ARM) for Linux Kernel v5.10
- Some drivers are provided for testing purposes (e.g. MCP23016, 24LC512). GPIO controller and EEPROM.
- The examples are available on Github

Book - Preface: What do we need to get the most out of it

- Basic C and Linux cmd commands are needed.
- Since the code is tested on x86 and UDOO QUAD (ARM) we could do the exercises on host (I'm assuming) or on target
- Evidently a computer/VM with enough disk space and RAM to download and build the Linux Kernel is needed.
- Suggested hardware: Any cortex-A embedded board: UUDO quad, Jetson nano, Raspberry Pi or BeagleBone.

Where to obtain the material and costs - some suggestions

• Book

- Amazon Germany €41.99
- Adlibris €57.50
- Amazon USA USD 34.89 (Kindle)

• Board

-
- KIWI Electronics Beaglebone Black Rev C €71.68
- Digikey Beaglebone Black Rev C €47.39
- Any other hardware suggestions? If we go with the the BBB we might also need a serial cable TTL-234X-5V.
- Should we also consider MCP23016, 24LC512 GPIO controller and EEPROM or wait?

Sharing information

- Github Repository
 - Fork and create a new branch
 - MIT License
- Overleaf: LaTeX slides

```
├── LICENSE
├── linux_device_driver_development
│   ├── 00_meet_and_greet
│   │   ├── EBC_meet_and_greet_Linux_Device_Driver_Development.pdf
│   │   ├── minutes.txt
│   │   └── README.md
│   ├── README.md
│   └── Rotation_List.txt
└── README.md
```

Rotation system and Event Recurrence

- Jonathan Velasco - Chapter 1 and 2
- When should we have our first/next session?
- Should we wait until everyone's got the book?
- Who's going next?