SSE3052: Embedded Systems Practice

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Introduction

• **Schedule**
  – 18:00 ~ 21:45 (Mon.)
  – Lecture room: #400212, Semiconductor Bldg.

• **Course homepage**
  – [http://csl.skku.edu/SSE3052F16/](http://csl.skku.edu/SSE3052F16/)
  – Lecture slides, announcements, exam scores, projects, etc.
  – Don’t waste your time in i-Campus

• **TA**
  – 한용섭, ysha812@gmail.com #400621 in Semiconductor Bldg.
  – 현병훈, gusqudgns@cs.skku.edu #400621 in this bldg.
Mobile Smart Device

• General-purposed system
  – Plenty of apps in market
  – Foreground/background apps

• Networked system
  – Internet connectivity via wireless network
  – Fetch data from the Internet
  – Sync user data with cloud

• Battery-backed system
  – Limited operating time
  – Energy efficiency

• Resource-constrained system
  – Limited resources (e.g., memory, CPU, storage)
  – Efficient use of them is important
Android

- The most popular mobile operating system
Course Plan

• Experiment
  – Linux kernel programming
    • Device driver programming
  – Android programming
    • Android app programming

• Term project
  – Android app development
## Course Schedule

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Prerequisites

• Courses
  – Operating Systems: SSE3044
  – Embedded System Design: ICE3028
  – System Software Experiment 2: SSE2033

• Required skills
  – Fluent C programming skills
  – Object-oriented programming skills
    • C++ mandatory, Java optional
  – Basic knowledge of Unix/Linux systems
  – Computer architecture
    • x86 mandatory, ARM optional
References

• Linux Kernel Development
  – 3rd edition
  – Rovert Love
  – Pearson Education, Inc.

• Linux Device Drivers
  – 3rd edition
  – J. Corbet, A. Rubini, and G. Hartman
  – O'Reilley
  – 2005
References

- 인사이드 안드로이드
  - 송형주, 김태연, 박지훈, 이백, 임기영
  - 위키북스
  - 2010

- 안드로이드의 모든것 분석과 포팅
  - 고현철, 유형목
  - 한빛미디어
  - 2011
References

• Linux
  – Linux Cross Reference: http://lxr.free-electrons.com

• Android
  – Development:
  – Android open-source project:
    https://source.android.com
  – Android Studio:

• Java
  – Java API: https://docs.oracle.com/javase/7/docs/api/
Class Policies

• Grading policy (subject to change)
  – Lab: 50%
  – Project: 50%
  – Subject to change

• Lab attendance policy
  – You have to complete your lab assignment in each day
  – Up to four absences will be tolerated
    • You still need to complete your lab on time
    • 10% delay penalty per day
Questions?