ITP 30002-02 Operating System

Course Introduction

Shin Hong

In this class

- greet each other
- check various class setting
- overview the course plan

ITP 30002-02 Class Members – Director & TAs

- Shin Hong
  - Class director: lead lecture, manage classes, design learning materials
  - OH 313
  - https://hongshin.github.io
  - hongshin@handong.edu

- Teaching assistants: http://arise.handong.edu

Jeewoong Kim   Suhyun Park   Sungbin Lim   Kieun Kim
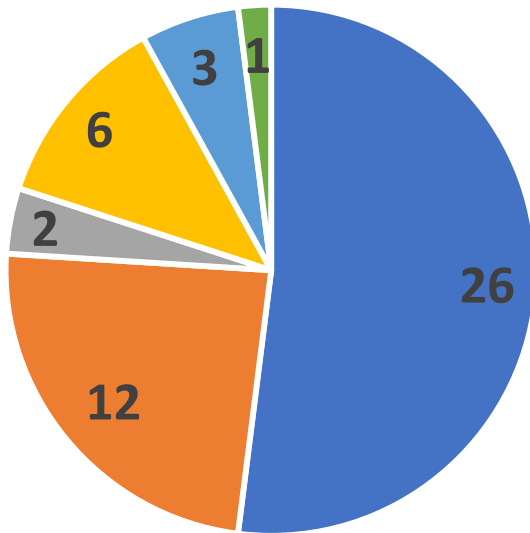
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ITP 30002-02 Class Members - Students
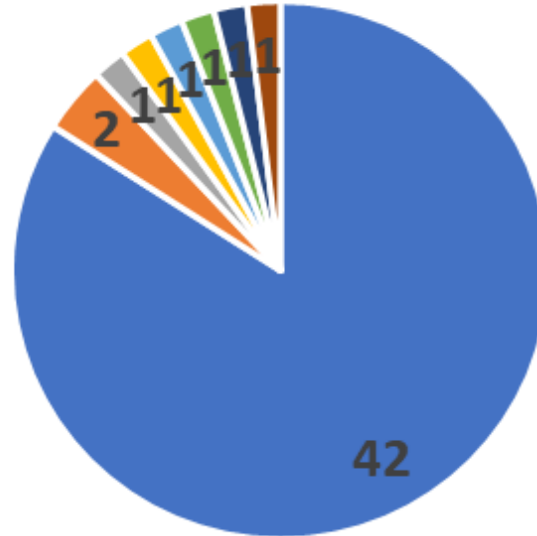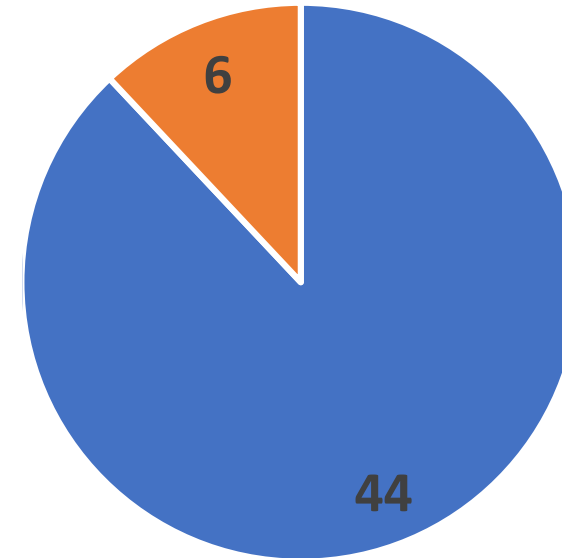
- total 50 students

Major
- CS as single major: 26
- CS as 1st major: 12
- IT as 1st major: 2
- CS as 2nd major: 6
- IT as 2nd major: 3
- Others: 1

Department
- CSEE: 42
- Biz-Eco: 2
- GE-ICT: 1
- GLS: 1
- Law: 1
- Bio Sci: 1
- Counsel-welfare: 1
- Creative Conv.: 1

Fresher vs. Retaker
- Fresher: 44
- Retaker: 6

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Class Objectives

- Understand key concepts and principles in designing operating systems

- Have an overview of the designs and implementations of contemporary operating systems

- Have essential experiences of Linux system programming

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Learning Materials

- *Operating Systems: Three Easy Pieces*
  - R. H. Arpaci-Dusseau and A. C. Arpaci-Dusseau
  - http://pages.cs.wisc.edu/~remzi/OSTEP/
  - lecture notes will be shared via the class github
   https://github.com/hongshin/OperatingSystem

- Secondary materials
  - *xv6: a simple, Unix-like teaching operating system*, revision 8
    https://pdos.csail.mit.edu/6.828/2014/xv6/book-rev8.pdf
  - *How Linux Works*, 3rd edition by Brian Ward
    - Handong students can access full-text online via O'Reilly Higher Education

- Other resources
  - *The Linux Programming Interface* by Michael Kerrisk
    - Handong students can access full-text online via O'Reilly Higher Education
  - lecture notes of the previous ITP 30002 classes
    https://github.com/hongshin/OperatingSystem/tree/2020spring/notes

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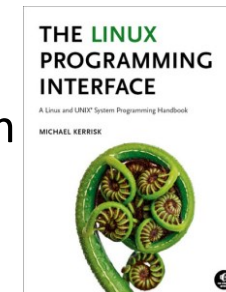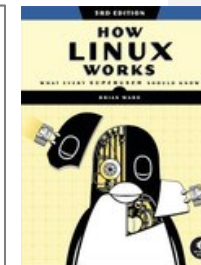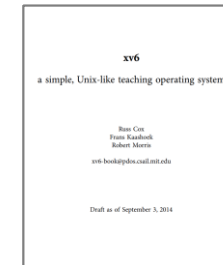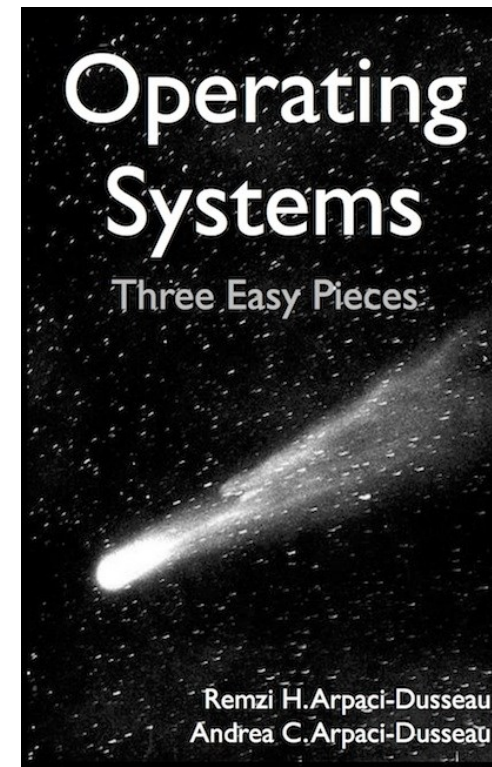
Schedule

Week	Textbook coverage
1	Overview: Chapters 1 and 2 (18 pages)
2	Process: Chapters 3, 4 and 5 (23 pages)
3	Process: Chapters 6, 7 and 8 (38 pages)
4	Process: Chapters 9 and 11 (11 pages)
5	Memory: Chapters 13--16 (34 pages)
6	Memory: Chapters 17--19 (42 pages)
7	Memory: Chapters 20 and 21 (20 pages)
8	** midterm **

Week	Textbook coverage
9	Memory: Chapters 22 and 23 (31 pages)
10	Concurrency: Chapters 26 and 27 (20 pages)
11	Concurrency: Chapters 28--30 (45 pages)
12	Concurrency: Chapters 31 and 32 (27 pages)
13	File system: Chapters 35, 36 and 37 (28 pages)
14	File system: Chapters 38 and 39 (38 pages)
15	File system: Chapters 40 and 41 (27 pages)
16	** final exam **

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Class Meetings

- in-person meeting by default
  - starts at 11:30 AM, every Mon and Thur
  - placed at OH 305

- check attendance at the beginning of each class
  - be prepared to answer back when your name is called
  - to avoid confusion, please do not check-in with NFC

- online class will be offered exceptional cases
  - in real time via Zoom, or as a video record
  - if the lecture is off campus for attending conferences or meetings
  - if social distancing is enforced by the government

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Communication

- Slack – join via https://join.slack.com/t/hongshinclassroom/shared_invite/zt-1pudyaskn-S75ZjeXhjkQXJssflrZJ7Q

  - for announcement (primary), timely notice, in-class interaction, administrative request, direct messaging

  - channels
    - `#os-itp30002-02, #adminrequest, #random, #peace`

- Github http://github.com/hongshin/OperatingSystem

  - study materials (lecture note, homework assignment, etc.)

- Hisnet LMS
  - homework submission & attendance record
  - repeat Slack message for backup

Homework

- 4 to 6 assignments throughout the semester
  - system programming
    - given as two-persons teamwork
  - exercise problem solving
  - essay writing

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Reading Group

- consists of 4 or 5 random students

- must have a meeting and submit a report on a weekly basis
  - reading assignment will be announced every Monday class
    - textbook chapters, or programming exercise
  - a meeting should be at least 30 min
  - a report summarizes the discussions and the questions in the meeting
    - meeting reports will be opened and shared in all class members
    - a reading group will be evaluated based on their submitted meeting reports
  - a meeting report must be submitted by 10 AM on the next Monday

- will be re-arranged twice in the semester (i.e., three teams)
  - peer evaluation will follow immediately after rearrangement

Proportion of Evaluation

- Exam: 40%
  - 2 or 3 times

- Homework: 40%

- Reading group: 10%

- Class contribution: 10%
  - attendance
  - in-class discussion

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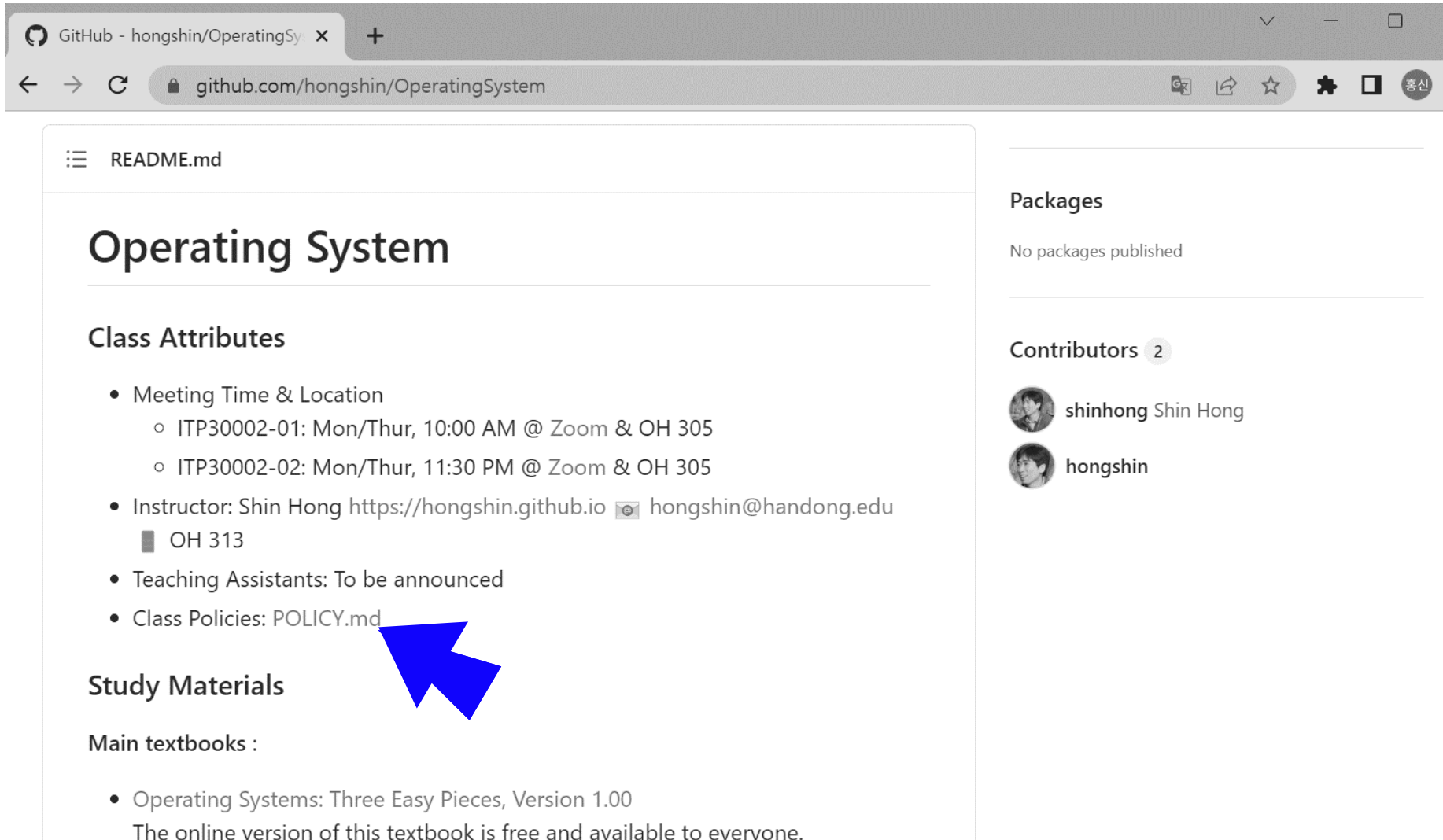ITP 30002
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Discussion Contribution

- Your question, answers or in a class time is considered as discussion contribution

- Declare your discussion contribution point by leaving a comment on the corresponding cell at the google spreadsheet
  - https://join.slack.com/t/hongshinclassroom/shared_invite/zt-1pudyaskn-S75ZjeXhjkQXJssflrZJ7Q

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Class Policies

- https://github.com/hongshin/OperatingSystem/blob/master/POLICY.md

Ground Rules

- Students learn course subjects by reading textbooks, solving exercise problems and doing homework primary
    - not by receiving things at class meeting
    - the major purpose of a class meeting is interactive discussion

- Students are expected to spend at least 6 hours per week to follow up what's covered in the classes (3 hours) of the week
    - beside the time for homework and meetings

- In doing homework, finding and understanding requirements is a crucial task that each student needs to accomplish by oneself

Study Guidelines

- Read, read, read textbook
  - buy the textbook and keep it near you
  - read regularly
  - use a dictionary if you find an unfamiliar word
  - use your hands to repeat examples
  - memorize definitions
  - peruse stories in boxes
  - never expect that all materials will be covered at class time

- Solve exercise problems by yourself
  - read the problem sentence carefully
  - write down an answer completely, and never stop at a middle
  - do have a group study

- Try best to think together (i.e., discuss) at a meeting time
  - participate or loss the time

Course overview

2023-02-27

Homework 1

- Submit the course entrance survey
  - tasks
    - join in Slack workspace https://join.slack.com/t/hongshinclassroom/shared_invite/zt-1pudyaskn-S75ZjeXhjkQXJssfIrZJ7Q
    - create Peace account https://sites.google.com/handong.ac.kr/peace
    - submit entrance survey https://forms.gle/Snikxuy63KNSiidT7

  - deadline: 9 PM, Mar 1st (Wed) (strict)
  - evaluation: taking 15% of the homework score

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