Exercise 8

已開始： 9月27日 16:38

測驗說明

問題 1 **50 分數**

- If you are using a new platform this time (e.g., Raspberry Pi that you didn't use before for modules), then do the following:
  - sudo apt update && sudo apt -y upgrade
  - sudo apt-get install raspberrypi-kernel-headers
- Modify **this (https://canvas.rice.edu/courses/59111/files/4929006/download?download_frd=1)** (https://canvas.rice.edu/courses/59111/files/4929006/download?download_frd=1&download_frd=1) module file (named hello_open.c in Files on Canvas) according to the instructions inside the file
  - This will help you make a module that implements the open system call for a "fake" character device
- We need a user application to call **open** for a fake character device we will play with
  - Make a C file called testmeschar.c
  - Include the header files stdio.h, stdlib.h, unistd.h, and fcntl.h
  - Inside the main function, print (using printf) a message to the console saying that we are running the program
  - Make a call to the C function open()
    - open(), which is part of the standard C library, takes two input arguments
    - The first input is a string that specifies the file path to our fake device we are making, which is at /dev/**** [where **** is the device name you chose]
    - The second argument is O_RDWR
      - Capital O, not zero; Used to read/write files
    - The output will be an integer; No need to do anything with it
  - return 0
- Download **this (https://canvas.rice.edu/courses/59111/files/4929027/download?download_frd=1)** (https://canvas.rice.edu/courses/59111/files/4929027/download?download_frd=1&download_frd=1) Makefile (Files/Makefile for char test/Makefile on Canvas) and replace the all capitals text appropriately
- Now test it with the following commands, replacing mes with the class name you chose and meschar with the device name you chose:
  - **make**
  - **sudo insmod hello.ko**
  - **ls /dev**
  - **ls /dev/88*** (replacing 88 with the first few letters of your device name; * is a wildcard, different from a **Yellowcard (https://en.wikipedia.org/wiki/Ocean_Avenue_(song))**)
  - **ls /sys/class/mes/meschar**
  - **cat /sys/module/hello/parameters/multiplier**
    - (other terminal window) **tail -f /var/log/kern.log**
      - Or: **dmesg**
    - **sudo ./test** (run many times) [MAKE SURE TO RUN WITH sudo!]
  - **sudo rmmod hello.ko**

Submit a screenshot of dmesg that contains text output corresponding to insmod, multiple runs of ./test, and rmmod. Also copy and paste your c test file code and module code into the next two questions.

上傳 選擇檔案

問題 2 **25 分數**

Copy and paste c test code here.

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問題 3 **25 分數**

Copy and paste c module code here.

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沒有要保存的新數據。上次檢查於 16:39 提交測驗