國立陽明交通大學
NATIONAL YANG MING CHIAO TUNG UNIVERSITY

Institute of Artificial Intelligence Innovation
Department of Computer Science

Introduction to Operating System

Homework Environment Introduction

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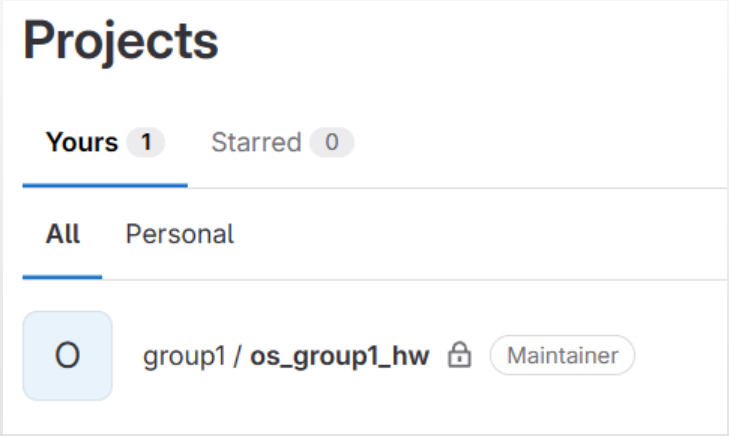
Wed. 10:10 - 12:00 EC115 +
Fri. 11:10 – 12:00 Online

Gitlab Nachos Repository

- Gitlab Link: https://css-nachos.hopto.org/gitlab/
  - Account : studentID
  - Password : TBD
  - You should modify your default password
- After finishing group registration
  - After logging into your Gitlab account, you should see your group project
  - Your Nachos file will already be inside the project



Jenkins Job

- Jenkins Link: https://css-nachos.hopto.org/jenkins/
  - Account : studentID
  - Password : TBD
  - You should modify your default password
- After finishing group registration
  - you should see your group jobs in Jenkins after you login

How to run Nachos? (Recommended method)

1. clone the project
2. modify nachos
3. commit & push to gitlab

4. push event will trigger Jenkins

5. trigger os_group_hw job first

os_group_hw job

1. clone the branch you pushed
2. compile your nachos
   1. go to code/build.linux
   2. make depend
   3. make clean
   4. make
3. run students custom shell
   1. go to code/test

os_students.sh 235 B

```
1  make clean
2  make
3  ../build.linux/nachos -e halt
```

// you can only customize your scripts inside this .sh file

6. after finished hw job, it will trigger os_group_ta job

os_group_ta job

1. clone the main branch
2. compile your nachos
3. run secret test case to evaluate your implementation

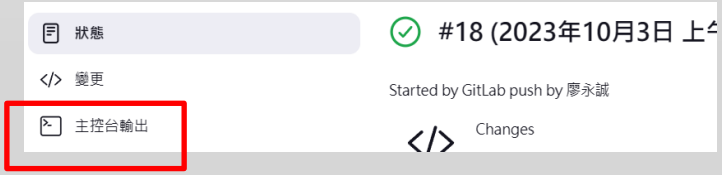
Jenkins Description

- You can view the output of your os_students.sh in the Jenkins os_group_hw console

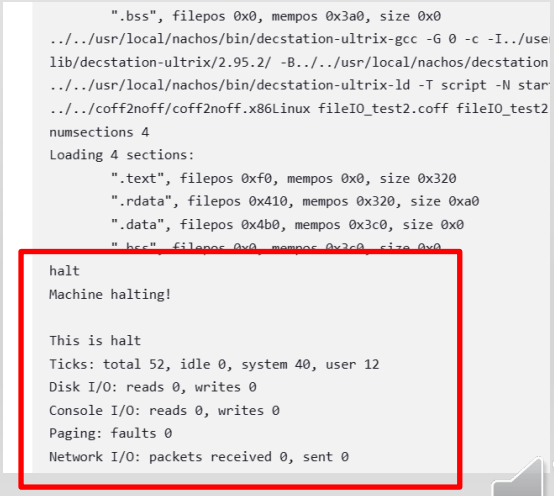
1. click your job

2. click specific build you want to see

3. click console output



4. scroll down to bottom you should see the output



// output from "../build.linux/nachos –e halt"

Run Locally

- If you want run nachos locally, please follow the steps below

1. install new virtual machine (Only well-tested on Ubuntu 22.04 LTS 64bits)
2. git clone your group project
3. install compile dependency
    1) sudo apt-get install build-essential
    2) sudo dpkg --add-architecture i386
    3) sudo apt-get install csh
    4) sudo apt-get update
    5) sudo apt-get dist-upgrade
    6) sudo apt-get install gcc-multilib g++-multilib
    7) sudo apt-get install lib32ncurses5-dev lib32z1
    8) sudo apt-get install zlib1g:i386 libstdc++6:i386
    9) sudo apt-get install libc6:i386 libncurses5:i386
    10) sudo apt-get install libgcc1:i386 libstdc++5:i386

Run Locally (cont'd)

- modify code/build.linux/Makefile
- compile nachos
  - cd code/build.linux/
  - make depend
  - make clean
  - make
- compile test case
  - cd code/test/
  - make clean
  - make
- test output
  - ../build.linux/nachos -e halt

Makefile

```
// the other line ...
CPP=/lib/cpp
CC = g++ -m32 -Wno-deprecated
LD = g++ -m32 -Wno-deprecated
AS = as --32
RM = /bin/rm
// the other line ...
```

Reminder

- The homework is considered passed **only if the TA job** passes
- Feel free to ask TA questions
  - The TA will only assist you with GitLab, Jenkins environment problems, or any issues related to homework requirements.
  - The TA will not help you debug your code.
  - Teams Message(Recommended): **簡子茸、徐翊安**
  - Email:
    - **tzerongjian.cs13@nycu.edu.tw**
    - **vm6u40.cs13@nycu.edu.tw**

S	W	名稱 ↓	上次成功	上次失敗	上次費時
✓	☁	os_group1_hw	3 小時 6 分 #18	11 小時 #15	5.8 秒
✓	⛅	os_group1_ta	3 小時 4 分 #38	11 小時 #34	5.9 秒

Q & A

Thank you for your attention