

# CSGE602055 Operating Systems

## CSF2600505 Sistem Operasi

### LeftOver

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<http://os.vlsm.org/>

Always check for the latest revision!

REV270 26-Feb-2021

# Agenda

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- XXXX

## • The Check List (Operating Systems)

- ☐ **Starting Point:** <http://os.vlsm.org/>
- ☐ **Text Book:** any recent/decent OS book but map it to **OSC10**.
- ☐ Create **public** project "os182" on your github.com account.
  - ☐ Create file "README.md" and add an extra line every week. For e.g.<sup>1</sup>:  
ZCZC Sistem Operasi 2018 Awal (1)  
ZCZC W01 Have tried demo for week 01.  
ZCZC W02 Week 02 is done.  
ZCZC W03 Week 03 is done.
- ☐ Encode your **QRC** with image size of approximately 250x250 pixels:  
**"OS181 CLASS ID GITHUB-ACCOUNT SSO-ACCOUNT SIAK-Full-Name"**  
Special for Week 00: Mail your **embedded** QRC to:  
operatingsystems@vlsm.org with Subject: [W00] CLASS ID  
SIAK-NAME.
- ☐ Write your Memo (with QRC) **every week**.
- ☐ Using your **SSO** account, login to badak.cs.ui.ac.id via  
kawung.cs.ui.ac.id.
  - ☐ Check folder badak:///extra/Week00/
  - ☐ Every week, copy the weekly demo files to your own home directory.  
Eg. for Week00:  
`cp -r /extra/Week00/W00-demos/ W00-demos/`

---

<sup>1</sup>Week 00 line is optional. The following "ZCZC WXX" weekly tags are mandatory.

- Text Book: any recent/decent OS book. Eg. (**OSC10**) Abraham Silberschatz, Peter B. Galvin, Greg Gagne: Operating System Concepts, 10<sup>th</sup> Edition, 2018.
- (GITHUB)  
`https://github.com/UI-FASILKOM-OS/SistemOperasi/`
  - (DEMO) — `demos/`
  - (SLIDE) — `pdf/`
- (UJIAN) — `http://rms46.vlsm.org/2/195.pdf` - `205.pdf`
- (BADAK) — `BADAK:///extra/`

# Bahan Presentasi:

<http://rms46.vlsm.org/2/207.html>

UI-FASILKOM-OS / os181

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Branch: master os181 / pdf

Create new file Upload files Find file History

rms46 rmsbase pdf Latest commit 6ea3f4e 19 hours ago

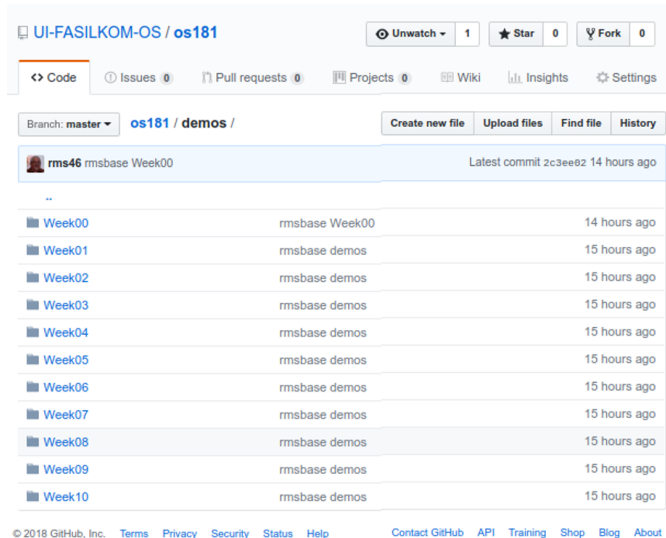
..		
os00-181.pdf	rmsbase pdf	19 hours ago
os01-181.pdf	rmsbase pdf	19 hours ago
os02-181.pdf	rmsbase pdf	19 hours ago
os03-181.pdf	rmsbase pdf	19 hours ago
os04-181.pdf	rmsbase pdf	19 hours ago
os05-181.pdf	rmsbase pdf	19 hours ago
os06-181.pdf	rmsbase pdf	19 hours ago
os07-181.pdf	rmsbase pdf	19 hours ago
os08-181.pdf	rmsbase pdf	19 hours ago
os09-181.pdf	rmsbase pdf	19 hours ago
os10-181.pdf	rmsbase pdf	19 hours ago
osXX-181.pdf	rmsbase pdf	19 hours ago

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Figure: <https://github.com/UI-FASILKOM-OS/os182/tree/master/pdf>

# Bahan Demo



UI-FASILKOM-OS / **os181**

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Branch: master os181 / demos /

Create new file Upload files Find file History

rms46 rmsbase Week00 Latest commit 2c3ee02 14 hours ago

..

Week00	rmsbase Week00	14 hours ago
Week01	rmsbase demos	15 hours ago
Week02	rmsbase demos	15 hours ago
Week03	rmsbase demos	15 hours ago
Week04	rmsbase demos	15 hours ago
Week05	rmsbase demos	15 hours ago
Week06	rmsbase demos	15 hours ago
Week07	rmsbase demos	15 hours ago
Week08	rmsbase demos	15 hours ago
Week09	rmsbase demos	15 hours ago
Week10	rmsbase demos	15 hours ago

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Figure: <https://github.com/UI-FASILKOM-OS/os182/tree/master/demos>

SCELE

Academic Links ▾

Panduan Mahasiswa ▾

Dukungan Kuliah ▾

My courses > LAIN-LAIN > Arsip RMS > General > ARSIP

 **Clock**  

 Server: Tue 9:56:21

 **Calendar**  

◀ August 2017 ▶

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

EVENTS KEY

 Hide global events

 Hide course events

## ARSIP





- ▶  010\_OS162
- ▶  013\_DEMOS
- ▶  015\_Video
- ▶  017\_BAHAN-AJAR-LAMA
- ▶  030\_Arsip-Ujian
- ▶  040\_EXTRA-RMS
- ▶  041\_Suplemen
- ▶  050\_OSC-Silberschatz
- ▶  060\_UJIAN-INTERNASIONAL
- ▶  070\_KULIAH-INTERNASIONAL
- ▶  075\_ETC-Video
- ▶  080\_eDOCs
- ▶  090\_KUNYUKS
- ▶  100\_Infrastruktur\_IT\_Modern\_2012
- ▶  110\_ITIM-REF
- ▶  120\_ITIM-Video
- ▶  200\_Pemrograman\_Sistem

Figure: Lihat juga [BADAK.cs.ui.ac.id:///extra/](http://BADAK.cs.ui.ac.id:///extra/)



# Github (New) Account 1

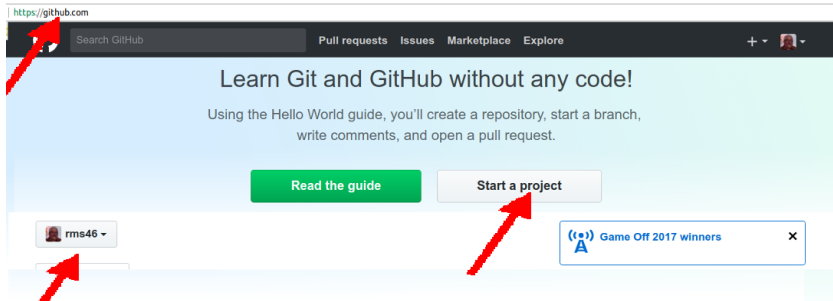


Figure: Start a new project by "rms46".

# Github (New) Account 2

## Create a new repository

A repository contains all the files for your project, including the revision history.

Owner



Repository name

 rms46 / os181 

Great repository names are short and memorable. Need inspiration? How about **verbose-garbanzo**.

Description (optional)

ZCZC Sistem Operasi 2018 Awal (1)

- ☒  **Public**  
Anyone can see this repository. You choose who can commit.
- ☐  **Private**  
You choose who can see and commit to this repository.

☒ **Initialize this repository with a README**

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **C** Add license: **None** ⓘ

**Create repository**

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Figure: Create public repository "os182" with a README.md file

# Github (New) Account 3

The screenshot shows the GitHub interface for a repository named 'os181' by user 'rms46'. At the top, the repository name is displayed with navigation links for Code, Issues (0), Pull requests (0), Projects (0), Wiki, Insights, and Settings. On the right, there are buttons for Unwatch (1), Star (0), and Fork (0). Below the navigation bar, the repository title 'ZCZC Sistem Operasi 2018 Awal (1)' is shown with an 'Edit' button. A section below the title displays repository statistics: 1 commit, 1 branch, 0 releases, and 1 contributor. Below this is a toolbar with a branch selector set to 'master', a 'New pull request' button, and buttons for 'Create new file', 'Upload files', 'Find file', and 'Clone or download'. The commit history table shows two entries: 'Initial commit' for both '.gitignore' and 'README.md' files, both committed by 'rms46' 'just now'. The 'Latest commit 8fa42bd just now' is also noted. At the bottom, the 'README.md' content is visible, showing the repository name 'os181' and the title 'ZCZC Sistem Operasi 2018 Awal (1)'.

rms46 / os181

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

ZCZC Sistem Operasi 2018 Awal (1) Edit

Add topics

1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

rms46 Initial commit		Latest commit 8fa42bd just now
.gitignore	Initial commit	just now
README.md	Initial commit	just now

README.md

## os181

ZCZC Sistem Operasi 2018 Awal (1)

Figure: Public project "os182" by "rms46" at <https://github.com/rms46/os182>

# WSL: Windows Subsystem for Linux



Figure: WSL: Windows Subsystem for Linux



The screenshot shows a Cygwin terminal window with the following commands and output:

```
~/demos/week00-introduction
rms46@rmsbase ~/demos/week00-introduction
$ export PS1='\w \$ '
~/demos/week00-introduction $ ls -al
total 14
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 04:41 .
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 03:42 ..
-rw-r--r-- 1 rms46 rms46 250 Aug 16 03:42 c-program-example.c
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 03:42 directory
-rw-r--r-- 1 rms46 rms46 240 Aug 16 03:42 Makefile
~/demos/week00-introduction $ make
gcc -o c-program-example c-program-example.c
~/demos/week00-introduction $ ls -al
total 78
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 04:42 .
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 03:42 ..
-rw-r--r-- 1 rms46 rms46  250 Aug 16 03:42 c-program-example.c
-rwxr-xr-x+ 1 rms46 rms46 62483 Aug 16 04:42 c-program-example.exe
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 03:42 directory
-rw-r--r-- 1 rms46 rms46  240 Aug 16 03:42 Makefile
~/demos/week00-introduction $ ./c-program-example.exe
This is program #1
~/demos/week00-introduction $ ls -al directory/
total 13
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 03:42 .
drwxr-xr-x+ 1 rms46 rms46  0 Aug 16 04:42 ..
-rw-r--r-- 1 rms46 rms46  58 Aug 16 03:42 file1
-rw-r--r-- 1 rms46 rms46  58 Aug 16 03:42 file2
-rw-r--r-- 1 rms46 rms46  58 Aug 16 03:42 file3
-rw-r--r-- 1 rms46 rms46  58 Aug 16 03:42 file4
-rw-r--r-- 1 rms46 rms46  58 Aug 16 03:42 file5
~/demos/week00-introduction $
```

Figure: Cygwin

# Week 00: Problems

- Tugas Minggu 00 (Week 00) ada dua:
  - membuat QRC dan mengirimkannya via email.
  - membuat Memo Minggu 00 yang ada QRC, serta ditunjukkan pada saat istirahat kuliah hari ke dua.
- "TANDA PETIK" BUKAN merupakan bagian dari QRC!
- Jangan mencantumkan ".git" dan ".sso", jika bukan bagian dari nama akun anda!
- Tanpa header [W00] pada Subject; email anda mungkin akan nyasar entah kemana... Ingat: [W00] (We-Nol-Nol) tidak sama dengan [WOO] (We-O-O)!
- Ukuran QRC cukup sekitar 256 x 256 pixel: jangan terlalu besar atau terlalu kecil.
- QRC ditanam (embedded) dalam email; jangan menggunakan attachment!
- Jangan mengirim MEMO dalam format PDF!

# Week 00: Check List

- ☐ Starting **Week 01**: TABULA RASA is not accepted anymore!
- ☐ Find/copy this document from <http://os.vlsm.org/>
- ☐ Find/read a recent/decent OS Book and map it to **OSC10**.
- ☐ Using your **SSO** account, login to `badak.cs.ui.ac.id` via `kawung.cs.ui.ac.id`.
- ☐ Check folder `badak:///extra/Week00/`
  - ☐ Try to copy and compile `c-program-example.c`.
- ☐ QR Code: (Eg) "0S182 X 1253755125 demo Demo Suremo"
- ☐ Mailto: `operatingsystems@vlsm.org`  
(Eg.) Subject: 0S182 X 1253755125 demo Demo Suremo
- ☐ Write "Memo Week00" + your QRC.
- ☐ **How to improve this document?**

# The End

- ☐ This is the end of the presentation.
- ☒ This is the end of the presentation.
  - This is the end of the presentation.



# Week 00: Self Service Assignments

- Create project (**PUBLIC**) "os182" on your new (or existing) github.com account.
- (Week 00) QRCode<sup>1</sup>: "OS182  
CLASS ID GITHUB-ACCOUNT SSO-ACCOUNT SIAK-Full-Name"
- (Weekly) Memo.
- Informasi Kuliah, Arsip Ujian, dan Demo
  - badak.cs.ui.ac.id:/extra/
  - <https://github.com/UI-FASILKOM-OS/os182>
  - <https://rms46.vlsm.org/2/195.pdf> — [195.pdf - 205.pdf].
- Which BASH Account?
  - Virtual Ubuntu: badak.cs.ui.ac.id (SSO)
  - Ubuntu (BYOD)
  - WSL: Windows 10 Subsystem for Linux
  - Cygwin (Windows)

---

<sup>1</sup>"QR Code" is a registered trademark and wordmark of Denso Wave Inc.

# Week 01: Problems

- Tugas Minggu 01 (Week 01) ada dua:
  - Memo Week01: to be checked at break of the first lecture of WEEK 01.
  - Try Demo Week01 and write in "README.md" (os181), something like: "ZCZC W01 Telah mencoba demo Week01".

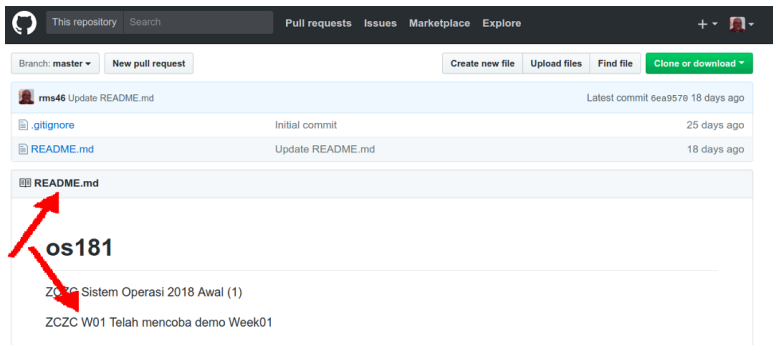


Figure: README.md: ZCZC W01 ...

# Week 02: Problems

- Tugas Minggu 02 (Week 02) ada dua:
  - Memo Week02: to be checked at break of the first lecture of WEEK 01.
  - Try Demo Week02 and write in "README.md" (os181), something like: "ZCZC W02 Demo: done!".



Figure: README.md: ZCZC W02 Demo: done!

# 07-fork

```
>>>> $ cat 07-fork.c
/*
 * (c) 2005-2017 Rahmat M. Samik-Ibrahim
 * https://rahmatm.samik-ibrahim.vlsm.org/
 * This is free software.
 * REV05 Mon Oct 30 10:57:02 WIB 2017
 * REV02 Mon Oct 24 10:43:00 WIB 2016
 * REV01 Sun Feb 27 08:31:46 WIB 2011
 * START 2005
 */

#include <sys/types.h>
#include <sys/wait.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#define DISPLAY1 "START * PARENT *** ** PID (%4d) ** *****\n"
#define DISPLAY2 "RANDOM: val1(%4d) -- val2(%4d) -- val3(%4d)\n"
/***** main ** */
void main(void) {
    pid_t val1, val2, val3;
    printf(DISPLAY1, getpid());
    val1 = fork();
    val2 = fork();
    val3 = fork();
    printf(DISPLAY2, val1, val2, val3);
    wait(NULL);
    wait(NULL);
    wait(NULL);
/* ***** START BLOCK ***
   ***** END * BLOCK *** */
}
```

## 07-fork (2)

```
>>>>> $ 07-fork
START * PARENT *** ** PID (6160) ** *****
RANDOM: val1(6161) -- val2(6162) -- val3(6163)
RANDOM: val1(6161) -- val2(6162) -- val3( 0)
RANDOM: val1(6161) -- val2( 0) -- val3(6165)
RANDOM: val1(6161) -- val2( 0) -- val3( 0)
RANDOM: val1( 0) -- val2(6164) -- val3(6166)
RANDOM: val1( 0) -- val2(6164) -- val3( 0)
RANDOM: val1( 0) -- val2( 0) -- val3(6167)
RANDOM: val1( 0) -- val2( 0) -- val3( 0)
>>>>> $ 07-fork
START * PARENT *** ** PID (6168) ** *****
RANDOM: val1(6169) -- val2(6170) -- val3(6172)
RANDOM: val1(6169) -- val2( 0) -- val3(6173)
RANDOM: val1(6169) -- val2(6170) -- val3( 0)
RANDOM: val1( 0) -- val2(6171) -- val3(6174)
RANDOM: val1(6169) -- val2( 0) -- val3( 0)
RANDOM: val1( 0) -- val2( 0) -- val3(6175)
RANDOM: val1( 0) -- val2( 0) -- val3( 0)
RANDOM: val1( 0) -- val2(6171) -- val3( 0)
>>>>> $ 07-fork
START * PARENT *** ** PID (6176) ** *****
RANDOM: val1(6177) -- val2(6178) -- val3(6181)
RANDOM: val1( 0) -- val2(6179) -- val3(6180)
RANDOM: val1( 0) -- val2(6179) -- val3( 0)
RANDOM: val1( 0) -- val2( 0) -- val3(6182)
RANDOM: val1(6177) -- val2( 0) -- val3(6183)
RANDOM: val1(6177) -- val2( 0) -- val3( 0)
RANDOM: val1(6177) -- val2(6178) -- val3( 0)
RANDOM: val1( 0) -- val2( 0) -- val3( 0)
>>>>> $
>>>>> $ 07-fork
```

- **4 SKS** (Units) means 12 hours per week!
  - Ah Beng said: Work hard!
- **No Lab — No Task — No Pop Quiz – No Teaching Assistant<sup>1</sup>.**
  - No secret hand-shake!
  - But, it may vary from class to class.
- **Active Preparation / Participation / Q&A Only.**
  - Pre-Midterm (UTS): 6 weeks @ 3 points (=18%).
  - Post-Midterm: 5 weeks @ 3 points (=15%).
  - Points for answering questions, trying demos, and writings memos.
  - Deductions for **NOT** answering questions: individually or collectively.

# Assessment part 2

- **How to get points?**

- Answer questions, especially not in the middle of a lecture!
- Try Demos.
- Class attendance.

- **MidTerm:** 6 set problems @ 6 points ( = 36%).

- **Final:** 30 points ( = 30%)<sup>1</sup>.

- **Extra Rounding:** 1 point<sup>2</sup>

- **C-2C:** upto 5 points <sup>3</sup>.

- Only if your grade is between 50.00 and 55.00 and you have a "good" track record.

- Check your points regularly at <https://academic.ui.ac.id/> and **DO NOT COMPLAIN** weeks after! See also, <https://os.vlsm.org/>.

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<sup>1</sup>THIS TERM ONLY. See SCELE for more details!

<sup>2</sup>NOT AVAILABLE THIS TERM!

<sup>3</sup>Terms and Conditions apply. Void where prohibited by law.

# The End

- ☐ This is the end of the presentation.
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  - This is the end of the presentation.