

프로그래밍 연습

실습 오리엔테이션

강좌 소개

강좌소개

강좌명 : 4190.103A 001 프로그래밍 연습

강의자 : 전화숙 교수님

교과서 : A Book on C, Kelley and Pohl, 4th edition,
Addison Wesley.

수업시간 :

- 이론 : 월요일 PM 2:30~4:20, 302-208
- 실습 : 수요일 PM 2:30~4:20, 302-311-1

조교 소개

조교소개

하근엽 : gyha@mcc1.snu.ac.kr

황민식 : mshwang@mcc1.snu.ac.kr

연구실 방문 : 위 메일로 사전 연락 후 방문

지각/결석 : 최소 하루 이전(권장) 연락 후 조정

Office : 302-313-1

수업 계정 발급

계정발급

소프트웨어 실습실 컴퓨터(302-311-1)와
실습용 서버(martini.snucse.org)에
접속할 수 있는 계정

컴퓨터공학부 주/부/복수 전공생은 이미 계정 소유

기타 수강생에게 임시계정 발급

계정발급 주의사항

사용 기한

- 계정은 종강 이후에 회수

실습실 컴퓨터 파일의 저장 범위

- 실습실 컴퓨터끼리 저장된 파일이 공유되지 않음
- 2017년도 2학기 종강 이후 재설치와 함께 파일이 삭제됨
- > 중요파일 : USB/메일/클라우드서비스를 이용해 저장/백업

martini.snucse.org - home dir 보존 기한

- 임시계정의 홈 디렉토리는 종강 이후 삭제
- 종강을 전후하여 주요 파일은 백업 권장

수업 홈페이지

홈페이지

- 주소 : `mcc1.snu.ac.kr`
- 일정 / 공지 / 강의자료
- 강의자료 아이디/비밀번호 : `progprac / progprac`

실습환경

실습환경

`martini.snucse.org`

- 자신의 `martini` 계정/임시계정으로 실습컴퓨터 로그인
- `window`키>왼쪽 'terminal' 켜기
- `ssh {id}@martini.snucse.org`
`ex)ssh test@martini.snucse.org`

vim 편집기

vim 파일명.확장자

- 새로운 파일 만들기 / 기존 파일 열기
- 프로그램 언어에 따라 확장자 설정(e.g.test.c, test.cpp)

vim 편집기에서의 모드

- Normal mode
 - Vim의 초기 모드
- Insert mode
 - 편집모드
 - 'i'를 누르면 normal mode에서 insert mode로 전환
 - 'esc'를 누르면 insert mode에서 normal mode로 전환

martini.snucse.org

실습 코딩은 여기서 합니다

추가

`martini.snucse.org`

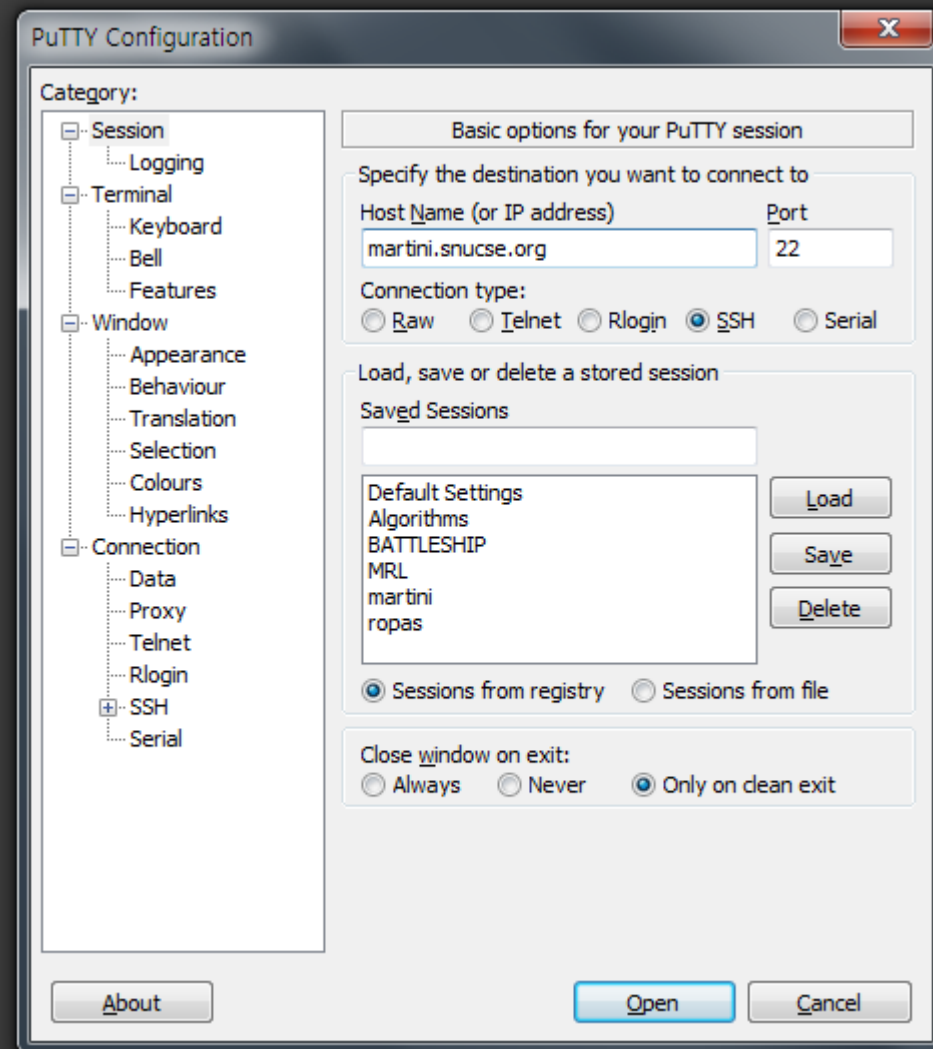
PUTTY

- 서버와 통신 가능한 프로그램

martini.snucse.org

PUTTY

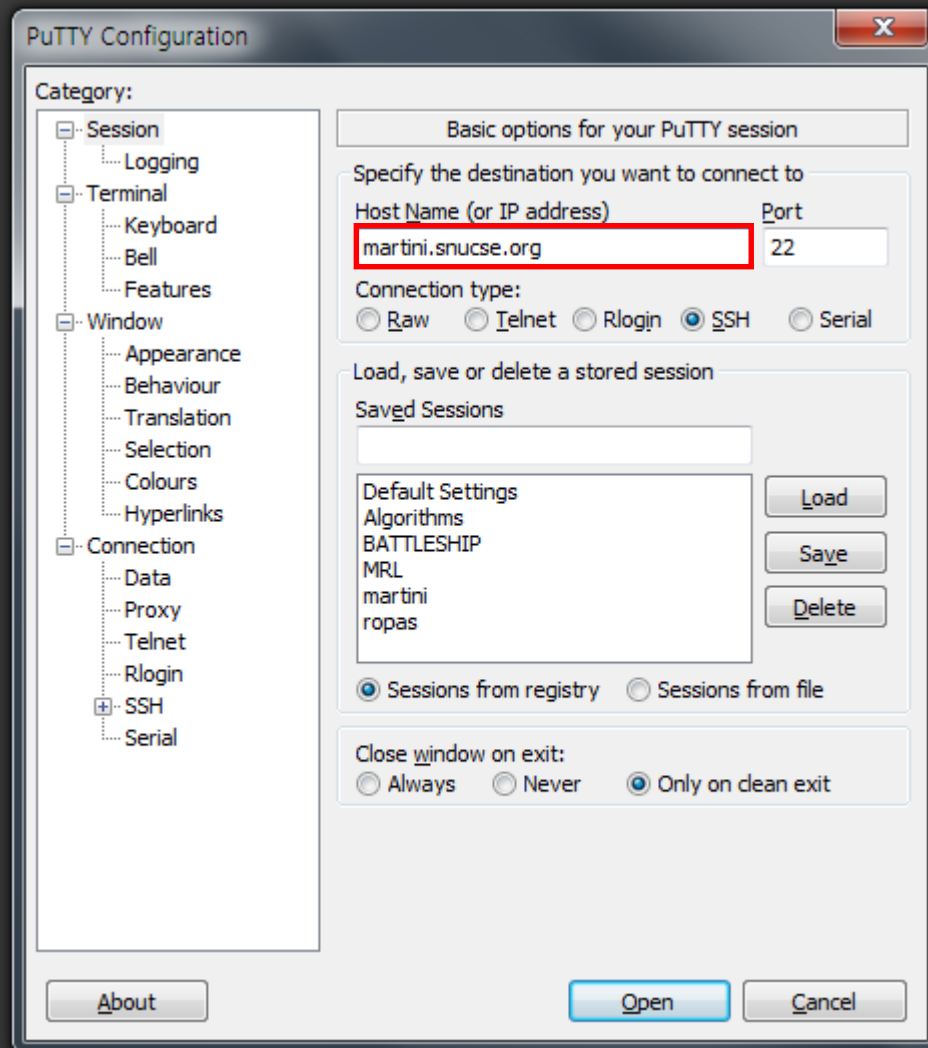
- 서버와 통신 가능한 프로그램



martini.snucse.org

PUTTY

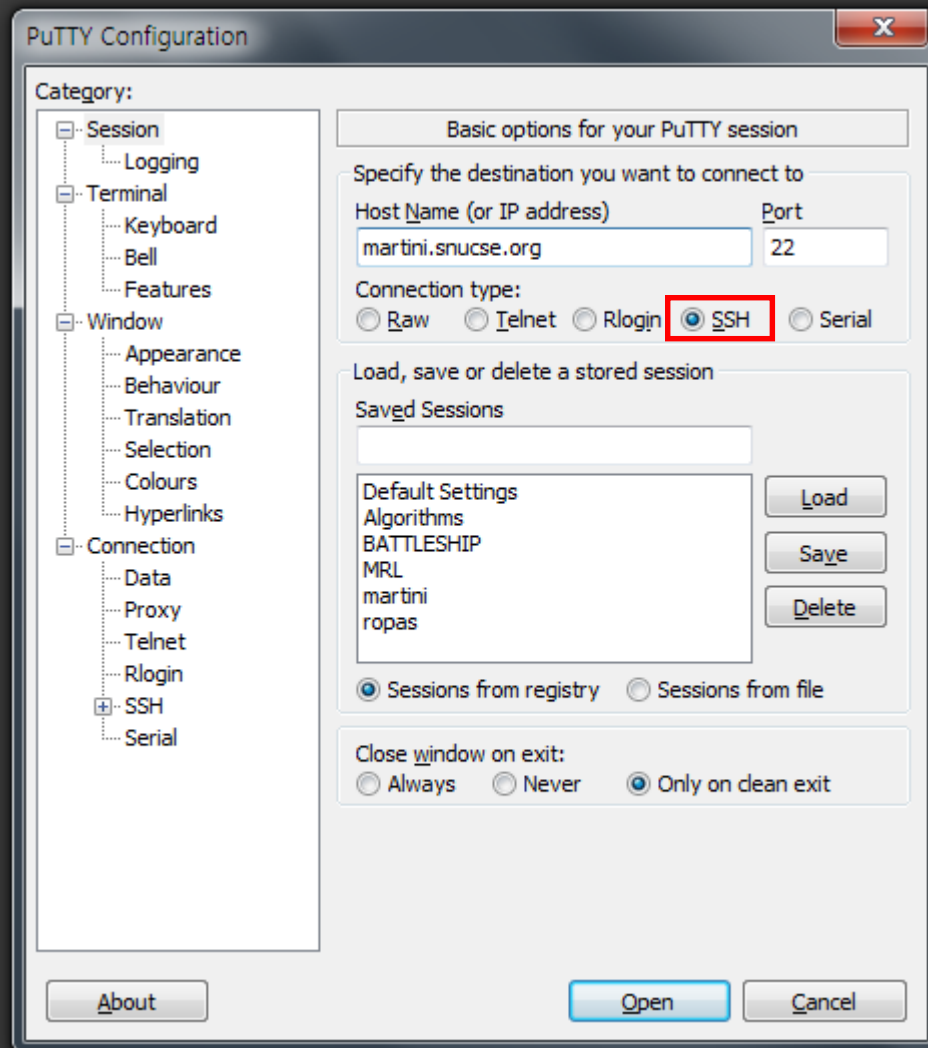
- 서버와 통신 가능한 프로그램
- Host : martini.snucse.org



martini.snucse.org

PUTTY

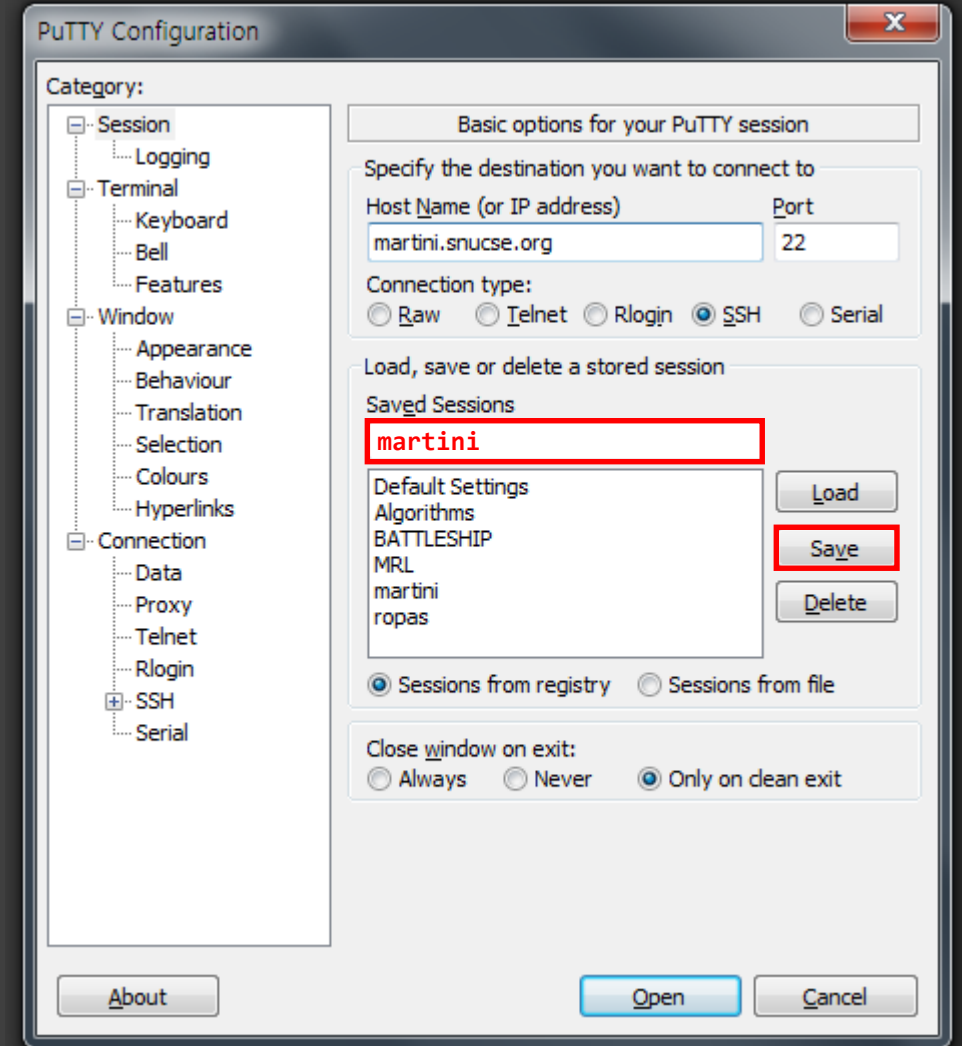
- 서버와 통신 가능한 프로그램
- Host : martini.snucse.org
- Connection Type : SSH



`martini.snucse.org`

PUTTY

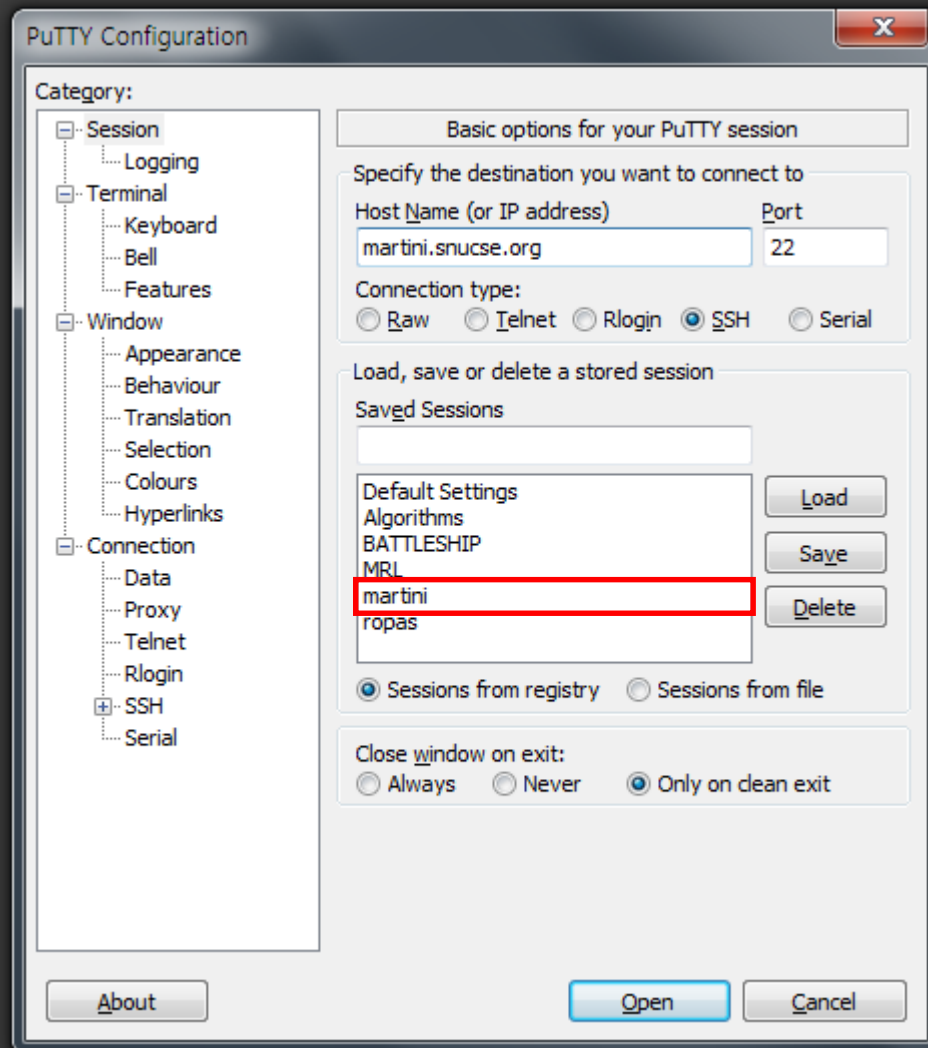
- 서버와 통신 가능한 프로그램
- Host : `martini.snucse.org`
- Connection Type : SSH
- Saved Sessions
- > Session명 입력 - Save



martini.snucse.org

PUTTY

- 서버와 통신 가능한 프로그램
- Host : martini.snucse.org
- Connection Type : SSH
- Saved Sessions
 - > Session명 입력 - Save
 - > Session명 더블클릭으로 접속



martini.snucse.org

martini.snucse.org - PuTTY

```
login as: pjhjohn
pjhjohn@martini.snucse.org's password:
Welcome to Ubuntu 14.04.3 LTS (GNU/Linux 3.13.0-54-generic x86_64)

* Documentation:  https://help.ubuntu.com/

System information as of Wed Sep  2 02:01:13 KST 2015

System load:   0.03                Processes:            358
Usage of /home: 75.3% of 714.91GB   Users logged in:     7
Memory usage:   57%                IP address for em1: 147.46.240.44
Swap usage:     0%

Graph this data and manage this system at:
https://landscape.canonical.com/

*** 시스템을 다시 시작해야 합니다 ***
Last login: Wed Sep  2 02:01:14 2015 from 1.255.24.49
groups: cannot find name for group ID 100001
pjhjohn@martini:~$
```

martini.snucse.org

martini.snucse.org - PuTTY

```
login as: pjhjohn
pjhjohn@martini.snucse.org's password:
Welcome to Ubuntu 14.04.3 LTS (GNU/Linux 3.13.0-54-generic x86_64)

* Documentation:  https://help.ubuntu.com/

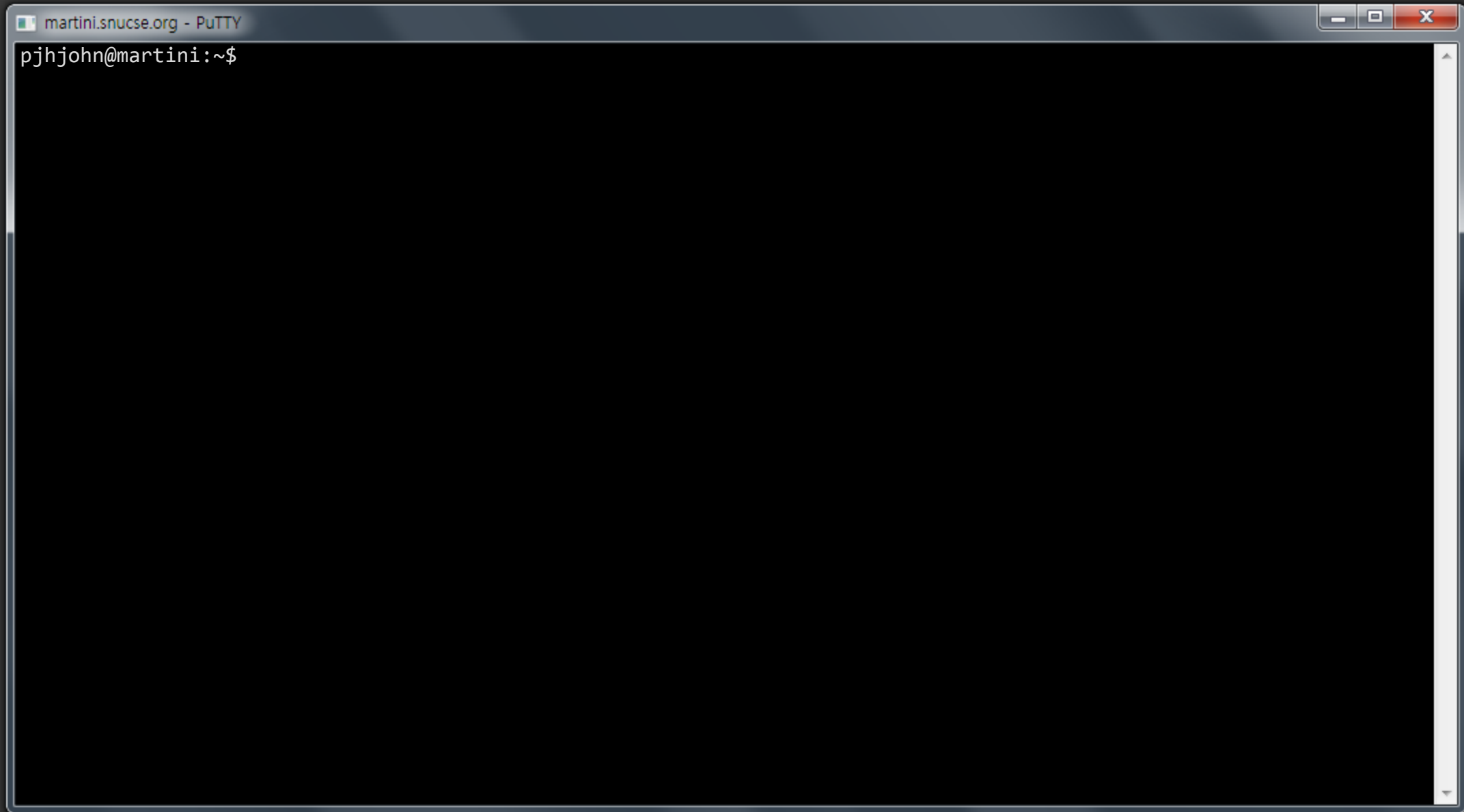
System information as of Wed Sep  2 02:01:13 KST 2015

System load:   0.03                Processes:            358
Usage of /home: 75.3% of 714.91GB   Users logged in:     7
Memory usage:   57%                IP address for em1: 147.46.240.44
Swap usage:     0%

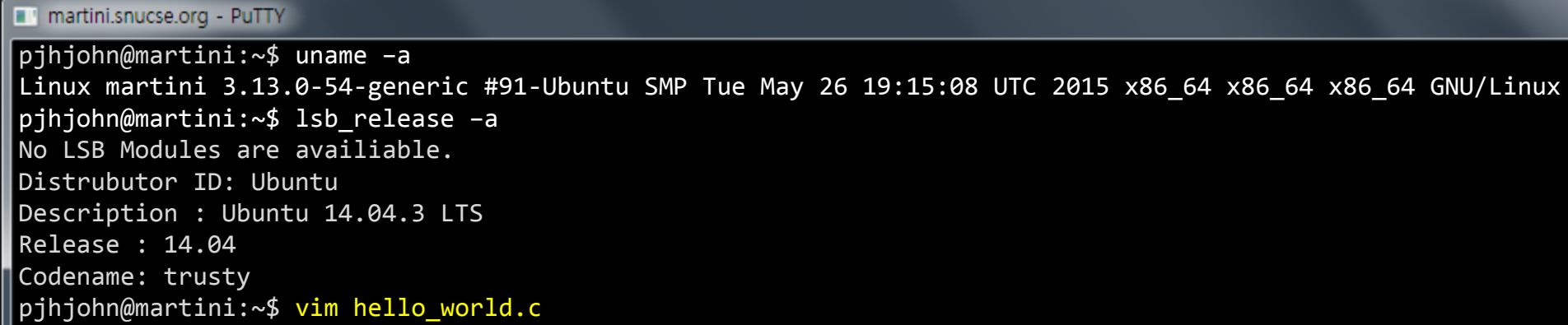
Graph this data and manage this system at:
https://landscape.canonical.com/

*** 시스템을 다시 시작해야 합니다 ***
Last login: Wed Sep  2 02:01:14 2015 from 1.255.24.49
groups: cannot find name for group ID 100001
pjhjohn@martini:~$ clear
```

martini.snucse.org



martini.snucse.org - Hello, World!



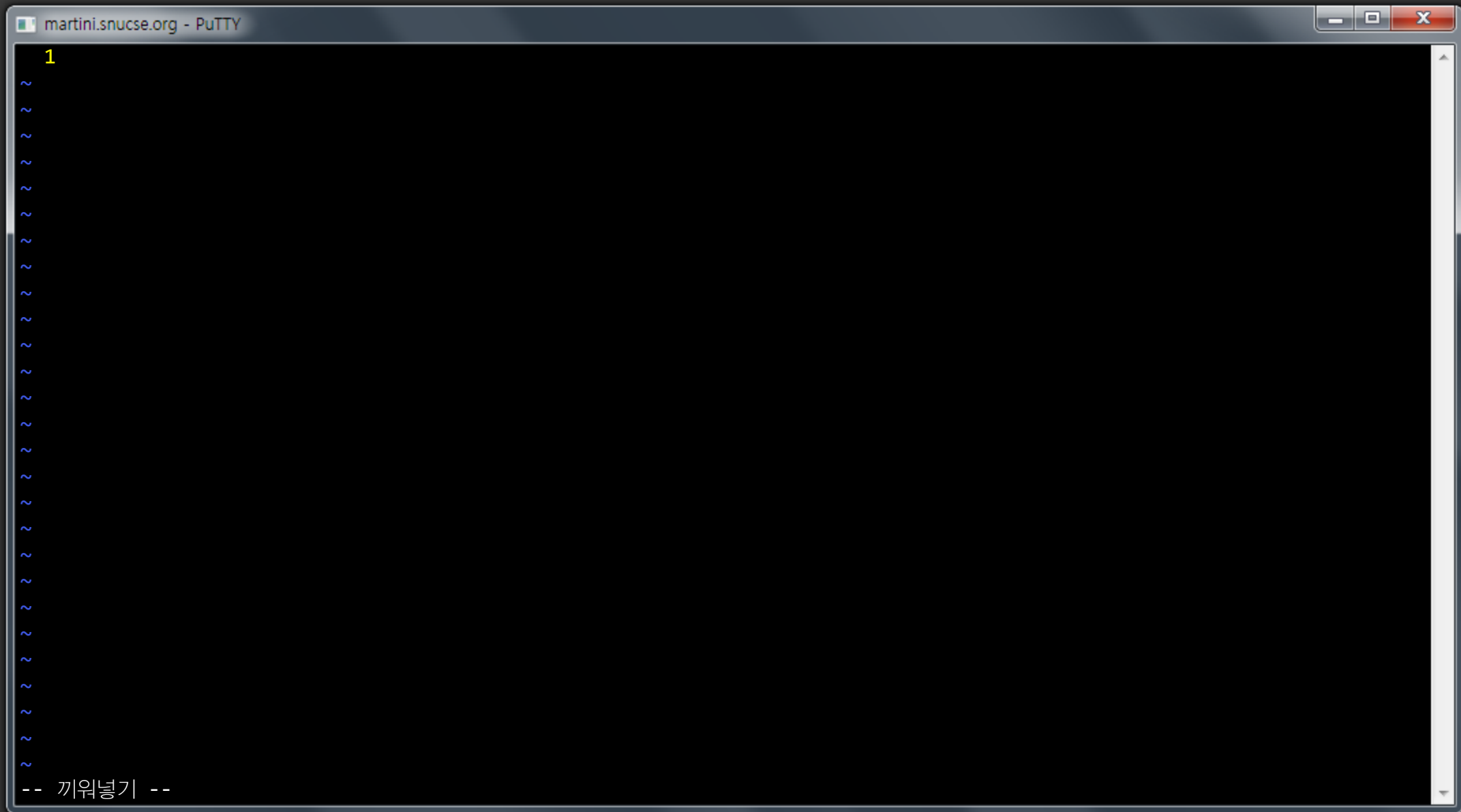
A terminal window titled "martini.snucse.org - PuTTY" with standard window controls. The terminal shows the output of two commands: `uname -a` and `lsb_release -a`. The output of `lsb_release -a` lists system details including the distributor ID (Ubuntu), description (Ubuntu 14.04.3 LTS), release (14.04), and codename (trusty). The prompt then shows the command `vim hello_world.c` being entered.

```
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
```

martini.snucse.org - Hello, World!

[illegible]

martini.snucse.org - Hello, World!



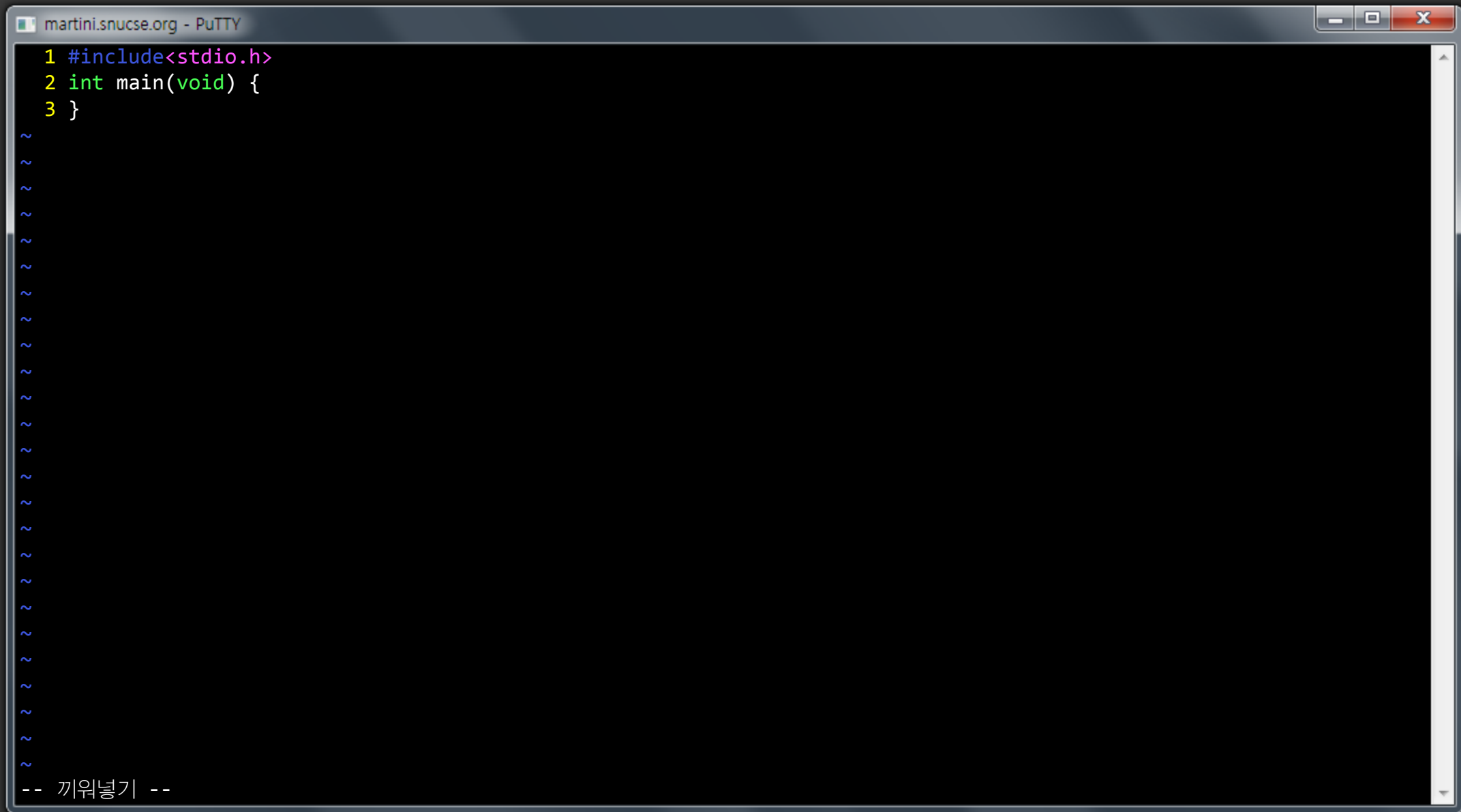
martini.snucse.org - Hello, World!

```
martini.snucse.org - PuTTY
```

```
1 #include<stdio.h>
```

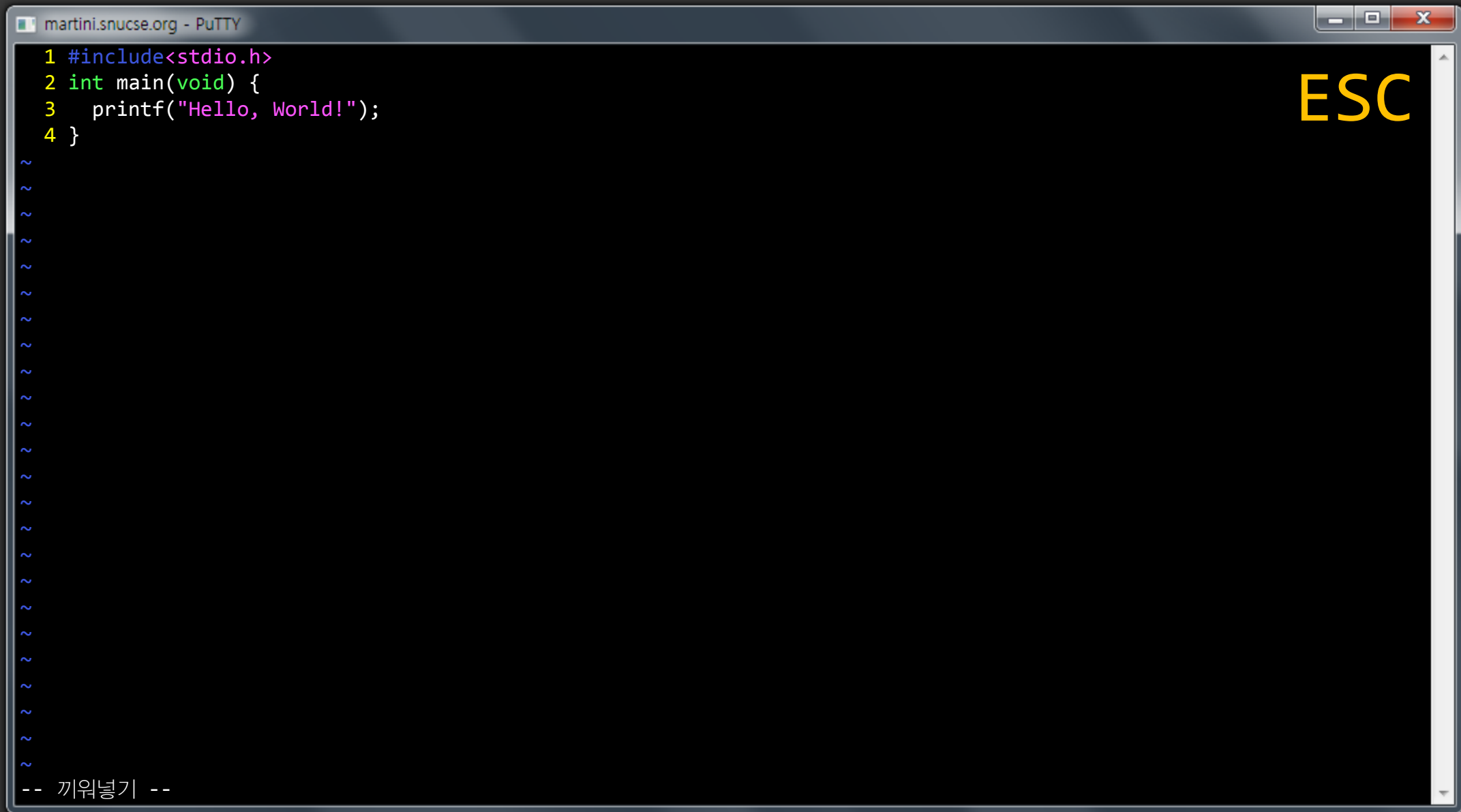
```
-- 끼워넣기 --
```

martini.snucse.org - Hello, World!



```
martini.snucse.org - PuTTY
1 #include<stdio.h>
2 int main(void) {
3 }
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- 끼워넣기 --
```

martini.snucse.org - Hello, World!



The image shows a PuTTY terminal window titled "martini.snucse.org - PuTTY". The window contains a C program for printing "Hello, World!". The code is as follows:

```
1 #include<stdio.h>
2 int main(void) {
3     printf("Hello, World!");
4 }
```

Below the code, there are several lines of tilde characters (~) representing a scrollback buffer. At the bottom left, the text "-- 끼워넣기 --" is visible. On the right side of the terminal, a large yellow "ESC" key graphic is overlaid.

martini.snucse.org - Hello, World!

```
martini.snucse.org - PuTTY
1 #include<stdio.h>
2 int main(void) {
3     printf("Hello, World!");
4 }
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
```

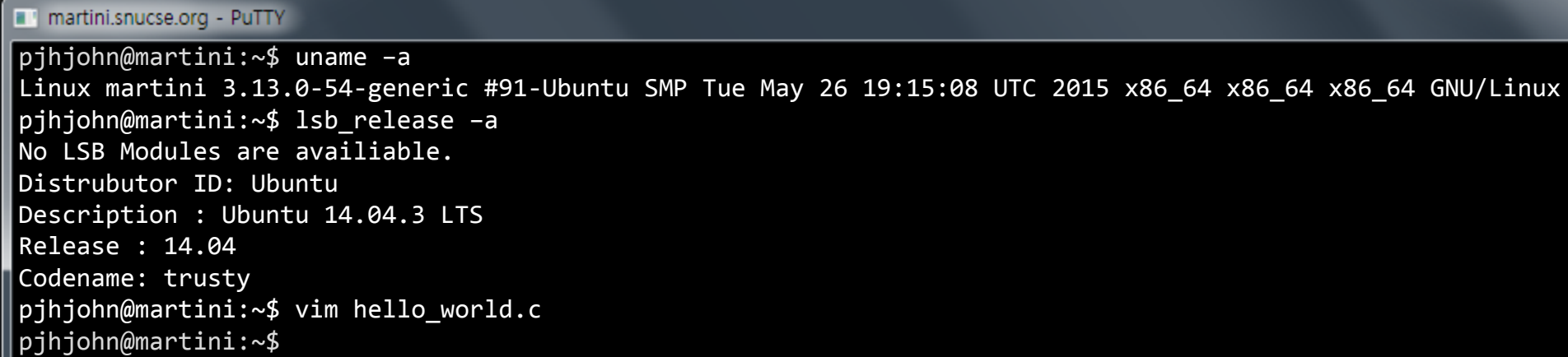
martini.snucse.org - Hello, World!

The screenshot shows a PuTTY terminal window titled "martini.snucse.org - PuTTY". The terminal has a black background with colored syntax highlighting for C code:

```
1 #include<stdio.h>  
2 int main(void) {  
3     printf("Hello, World!");  
4 }
```


Below the code, there are approximately 20 tilde (~) characters arranged vertically.
At the bottom left of the terminal, the text ":wq" is visible.

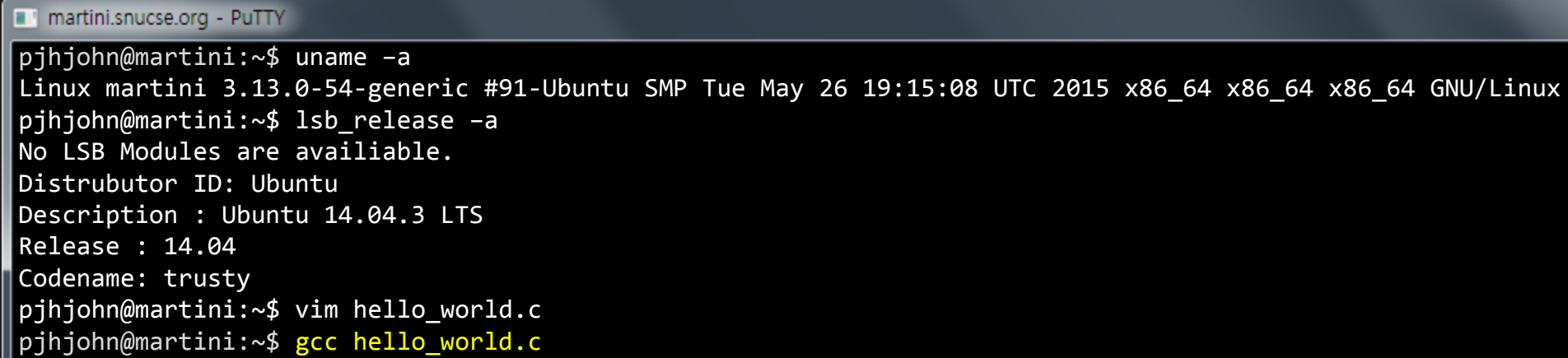
martini.snucse.org - Hello, World!



A terminal window titled "martini.snucse.org - PuTTY" with standard window controls. The terminal shows the following commands and output:

```
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
pjhjohn@martini:~$
```

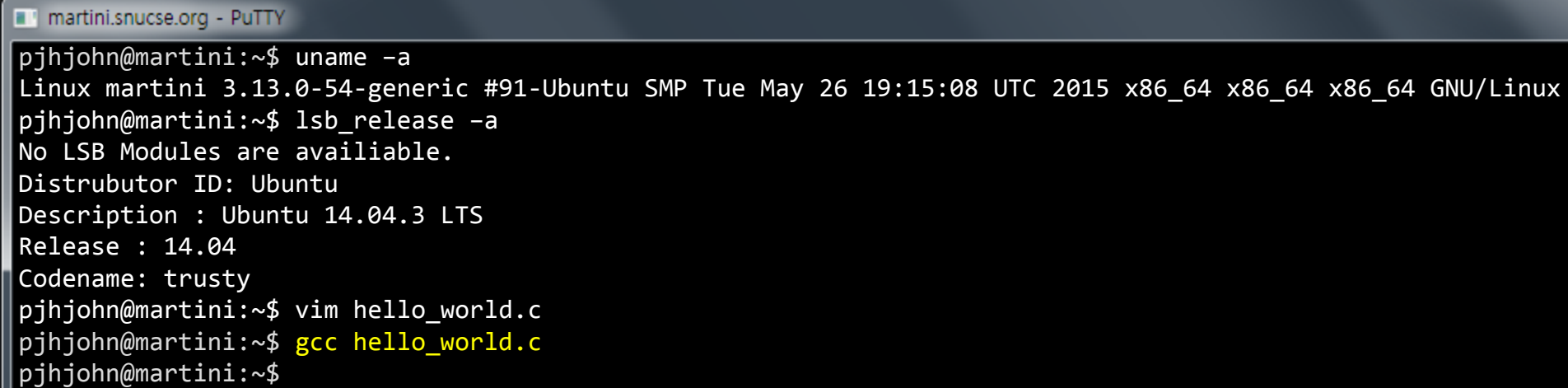
martini.snucse.org - Hello, World!



A terminal window titled "martini.snucse.org - PuTTY" with standard window controls. The terminal shows a series of commands and their outputs: `uname -a` returns system details; `lsb_release -a` returns distribution information; `vim hello_world.c` and `gcc hello_world.c` are entered at the prompt.

```
martini.snucse.org - PuTTY
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
pjhjohn@martini:~$ gcc hello_world.c
```

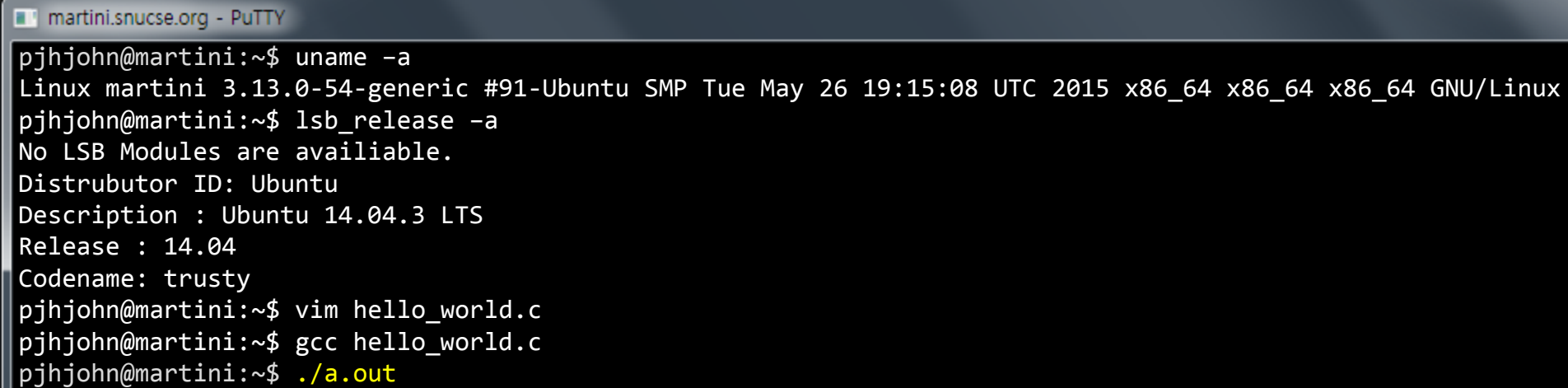
martini.snucse.org - Hello, World!



A terminal window titled "martini.snucse.org - PuTTY" with standard window controls. The terminal shows the following commands and output:

```
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
pjhjohn@martini:~$ gcc hello_world.c
pjhjohn@martini:~$
```

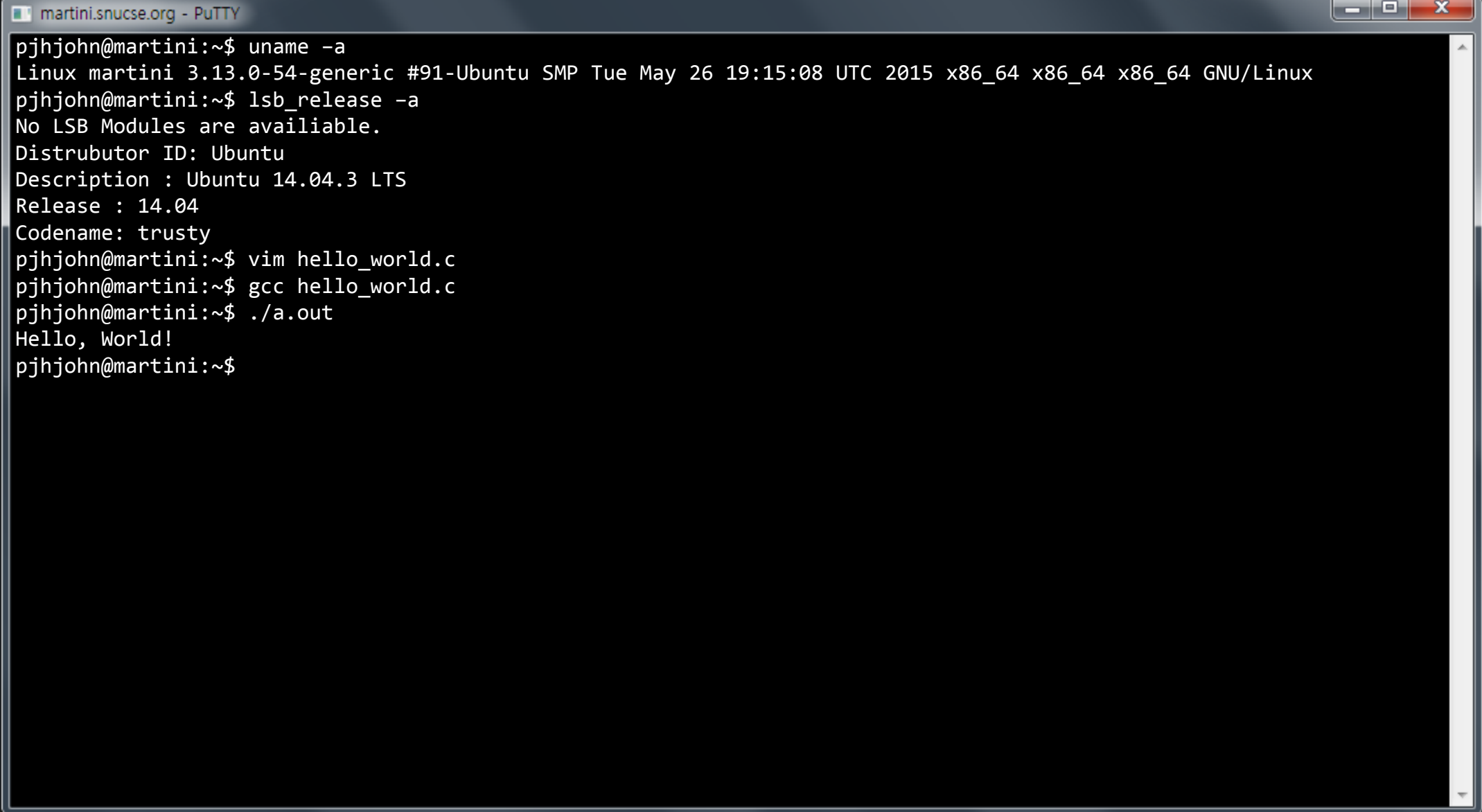
martini.snucse.org - Hello, World!



A terminal window titled "martini.snucse.org - PuTTY" with standard window controls. The terminal shows the following commands and output:

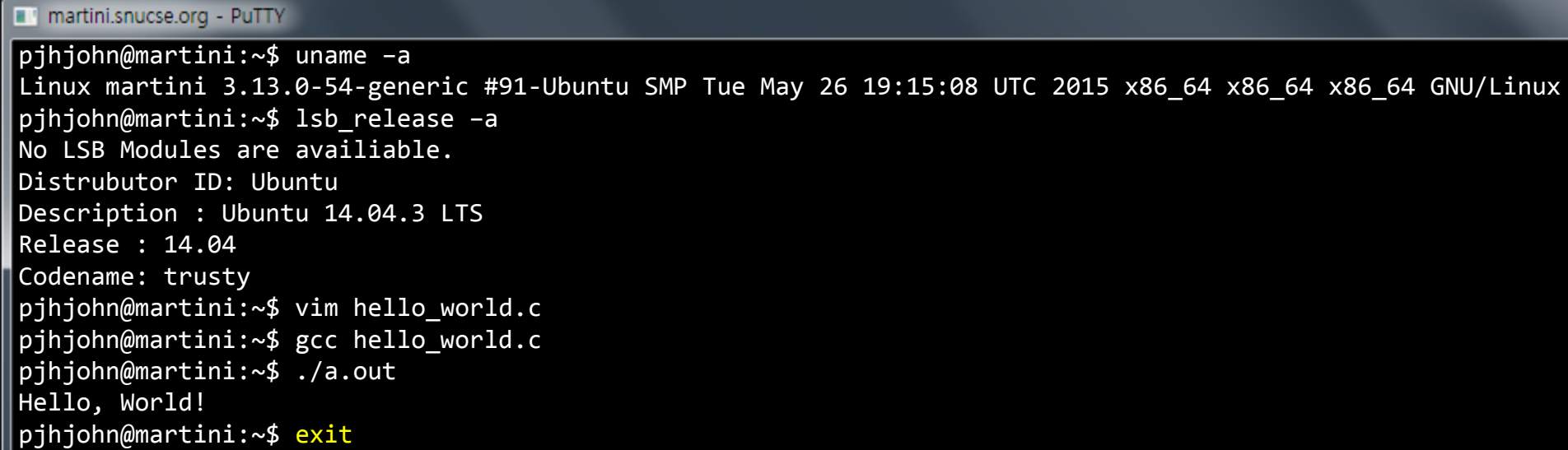
```
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
pjhjohn@martini:~$ gcc hello_world.c
pjhjohn@martini:~$ ./a.out
```

martini.snucse.org - Hello, World!



```
martini.snucse.org - PuTTY
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
pjhjohn@martini:~$ gcc hello_world.c
pjhjohn@martini:~$ ./a.out
Hello, World!
pjhjohn@martini:~$
```

martini.snucse.org – Hello, World!



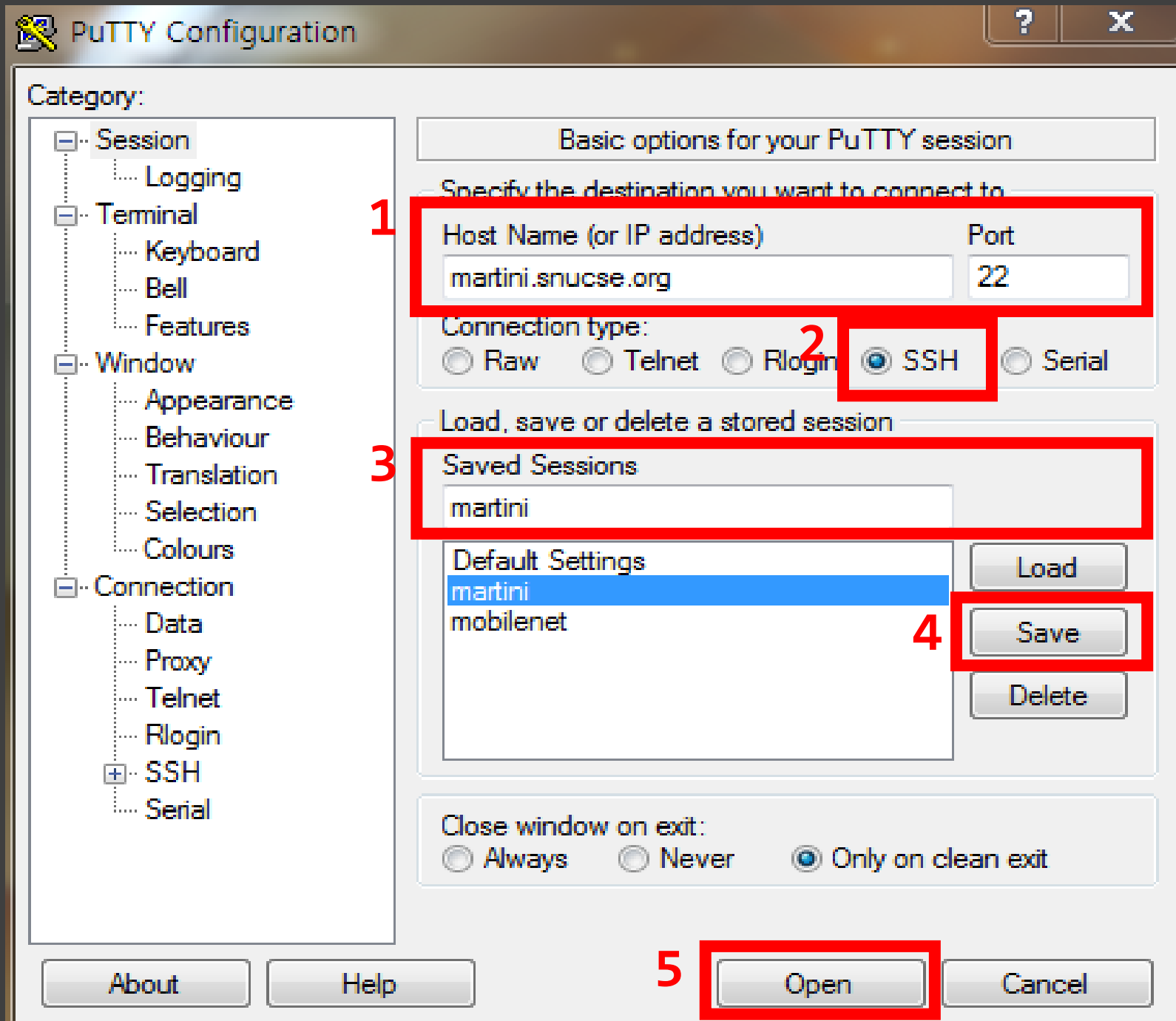
```
martini.snucse.org - PuTTY
pjhjohn@martini:~$ uname -a
Linux martini 3.13.0-54-generic #91-Ubuntu SMP Tue May 26 19:15:08 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
pjhjohn@martini:~$ lsb_release -a
No LSB Modules are available.
Distributor ID: Ubuntu
Description : Ubuntu 14.04.3 LTS
Release : 14.04
Codename: trusty
pjhjohn@martini:~$ vim hello_world.c
pjhjohn@martini:~$ gcc hello_world.c
pjhjohn@martini:~$ ./a.out
Hello, World!
pjhjohn@martini:~$ exit
```

통합계정 비밀번호 변경

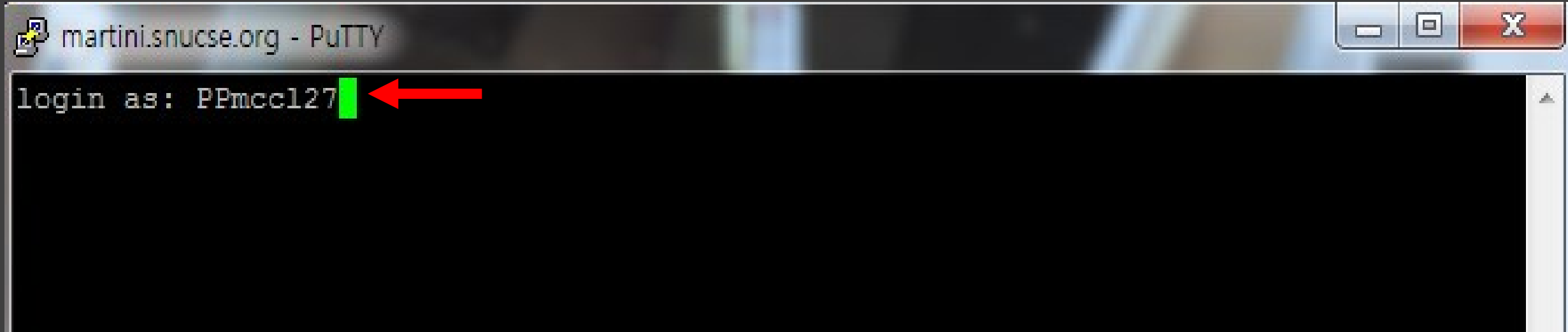
Window에서 변경하는 방법

PUTTY

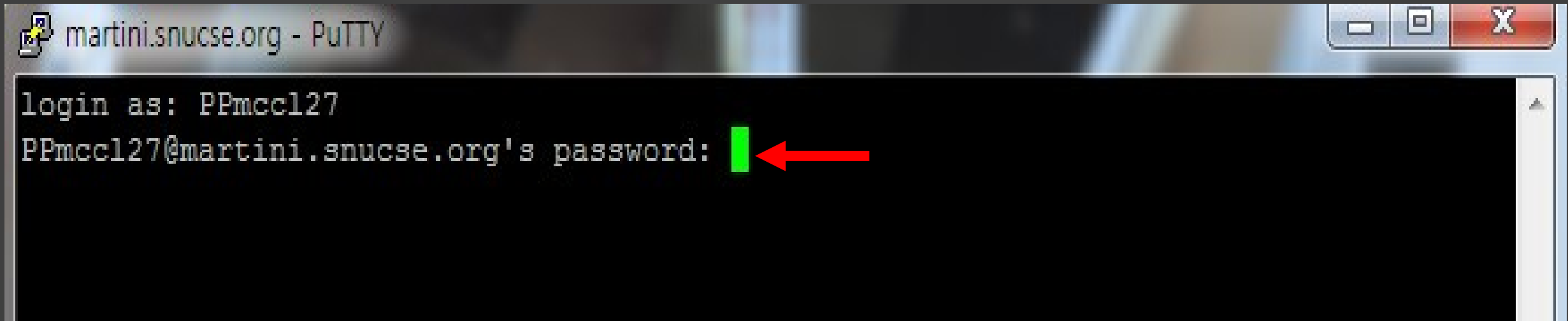
1. 구글에 putty검색
2. 다운로드
3. 실행
4. 오른쪽과 같이 번호 순서에 따라 입력 후 실행



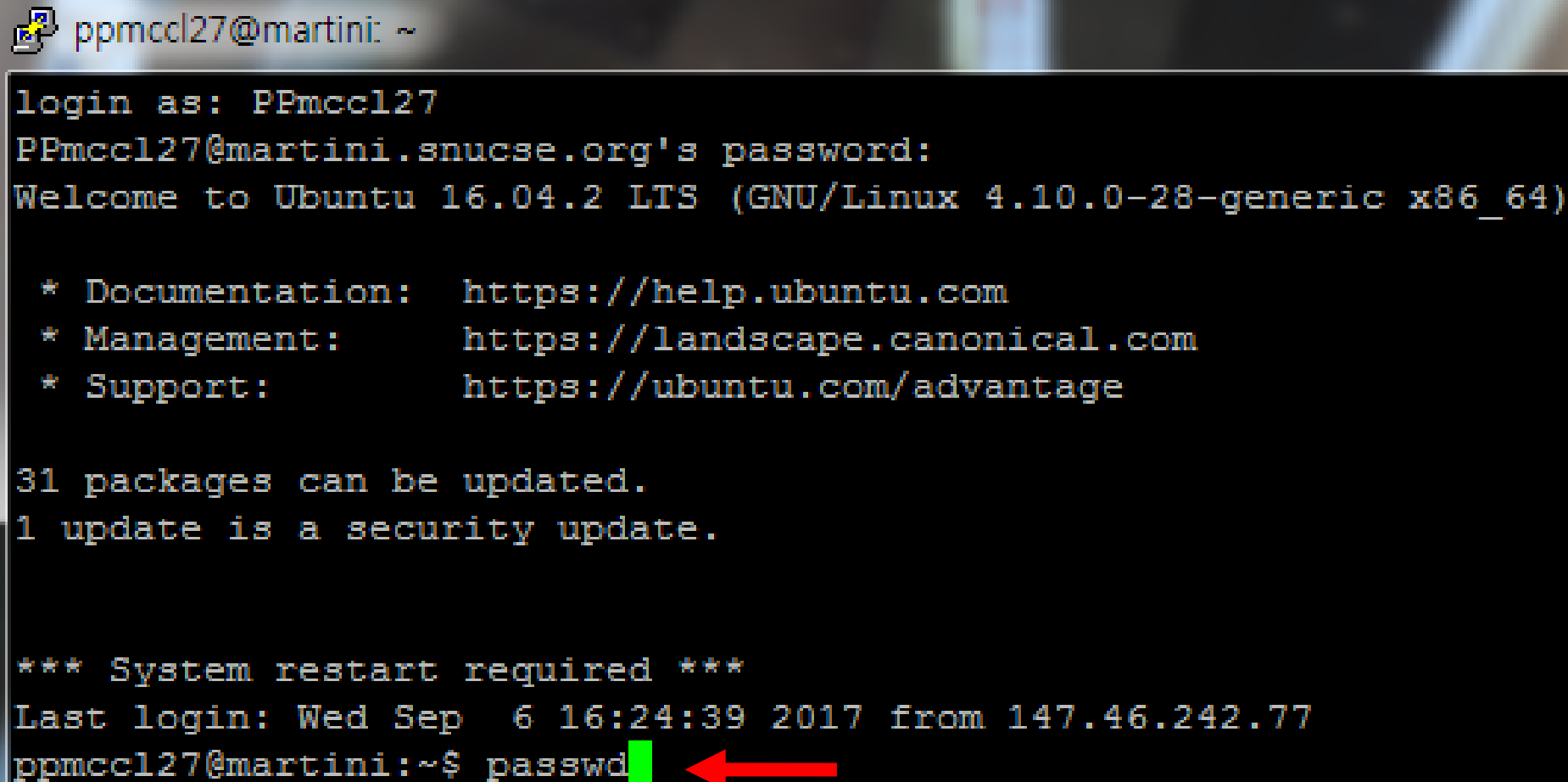
1. 수업시간에 받은 임시통합계정 아이디 입력



2. 비밀번호 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)



3. 명령어 **passwd** 입력



The image shows a terminal window titled 'ppmccl27@martini: ~'. The terminal output includes the login process for user 'PPmccl27', a welcome message for Ubuntu 16.04.2 LTS, and a list of update links. It also displays a notification that 31 packages can be updated, including a security update, and a message that a system restart is required. The last login information is shown as 'Wed Sep 6 16:24:39 2017 from 147.46.242.77'. The prompt 'ppmccl27@martini:~\$' is followed by the command 'passwd', which is highlighted with a green square and a red arrow pointing to it.

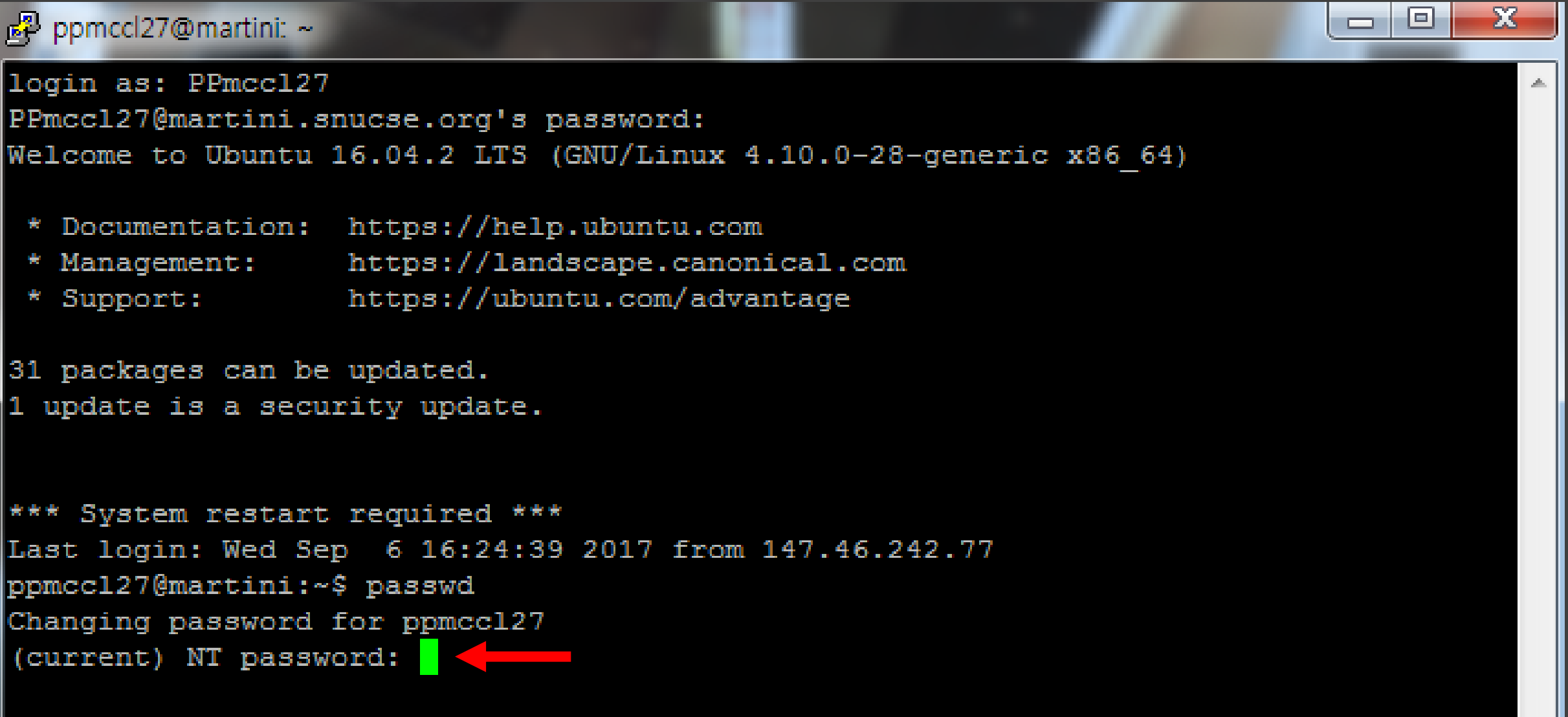
```
login as: PPMCcl27
PPMccl27@martini.snucse.org's password:
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

31 packages can be updated.
1 update is a security update.

*** System restart required ***
Last login: Wed Sep  6 16:24:39 2017 from 147.46.242.77
ppmccl27@martini:~$ passwd
```

4. 현재 비밀번호 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

A terminal window titled 'ppmcc127@martini: ~' with standard Ubuntu window controls. The terminal output shows a successful login for 'PPmcc127' on 'martini.snucse.org'. It displays system information (Ubuntu 16.04.2 LTS) and links for documentation, management, and support. A notification states that 31 packages can be updated, including 1 security update. A message indicates that a system restart is required. The user's last login is recorded as Wednesday, September 6, 2017, at 16:24:39 from IP 147.46.242.77. The user then enters the 'passwd' command to change their password. The prompt '(current) NT password:' is followed by a green square, which is pointed to by a red arrow, indicating that the password is being entered but is not visible on the screen.

```
login as: PPmcc127
PPmcc127@martini.snucse.org's password:
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

31 packages can be updated.
1 update is a security update.

*** System restart required ***
Last login: Wed Sep  6 16:24:39 2017 from 147.46.242.77
ppmcc127@martini:~$ passwd
Changing password for ppmcc127
(current) NT password: ■ ←
```

5. 변경할 비밀번호 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

```
ppmcc127@martini: ~  
login as: Ppmcc127  
Ppmcc127@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
31 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Wed Sep  6 16:24:39 2017 from 147.46.242.77  
ppmcc127@martini:~$ passwd  
Changing password for ppmcc127  
(current) NT password:  
Enter new NT password: █
```

6. 변경할 비밀번호 다시 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

```
ppmcc127@martini: ~  
login as: Ppmcc127  
Ppmcc127@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
31 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Wed Sep  6 16:24:39 2017 from 147.46.242.77  
ppmcc127@martini:~$ passwd  
Changing password for ppmcc127  
(current) NT password:  
Enter new NT password:  
Retype new NT password: █ ←
```

7. 비밀번호 변경 완료

```
ppmccl27@martini: ~  
login as: Ppmccl27  
Ppmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
31 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Wed Sep  6 16:24:39 2017 from 147.46.242.77  
ppmccl27@martini:~$ passwd  
Changing password for ppmccl27  
(current) NT password:  
Enter new NT password:  
Retype new NT password:  
passwd: password updated successfully  
ppmccl27@martini:~$
```

Linux에서 변경하는 방법

1. Terminal창에서 ssh 명령어를 통해 서버 접속


```
geunyeop@ubuntu: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org ←
```

2. 비밀번호 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

```
geunyeop@ubuntu: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
Ppmccl27@martini.snucse.org's password: █ ←
```

3. 서버 접속 완료 화면

```
ppmccl27@martini: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
Ppmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
35 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Thu Sep  7 08:42:34 2017 from 147.46.242.77  
ppmccl27@martini:~$
```




4. 명령어 **passwd** 입력


```
ppmccl27@martini: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
Ppmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
35 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Thu Sep  7 08:42:34 2017 from 147.46.242.77  
ppmccl27@martini:~$ passwd
```

5. 현재 비밀번호 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

```
ppmccl27@martini: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
Ppmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
35 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Thu Sep  7 08:42:34 2017 from 147.46.242.77  
ppmccl27@martini:~$ passwd  
Changing password for ppmccl27  
(current) NT password: █
```



6. 변경할 비밀번호 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

```
ppmccl27@martini: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
Ppmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
35 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Thu Sep  7 08:42:34 2017 from 147.46.242.77  
ppmccl27@martini:~$ passwd  
Changing password for ppmccl27  
(current) NT password:  
Enter new NT password: 
```

7. 변경할 비밀번호 다시 입력 (비밀번호를 쳐도 비밀번호는 보이지 않음)

```
ppmccl27@martini: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
PPmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
35 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Thu Sep  7 08:42:34 2017 from 147.46.242.77  
ppmccl27@martini:~$ passwd  
Changing password for ppmccl27  
(current) NT password:  
Enter new NT password:  
Retype new NT password: ←
```

8. 비밀번호 변경 완료

```
ppmccl27@martini: ~  
geunyeop@ubuntu:~$ ssh Ppmccl27@martini.snucse.org  
Ppmccl27@martini.snucse.org's password:  
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.10.0-28-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
35 packages can be updated.  
1 update is a security update.  
  
*** System restart required ***  
Last login: Thu Sep  7 08:42:34 2017 from 147.46.242.77  
ppmccl27@martini:~$ passwd  
Changing password for ppmccl27  
(current) NT password:  
Enter new NT password:  
Retype new NT password:  
passwd: password updated successfully  
ppmccl27@martini:~$
```

**앞으로 변경된 비밀번호로 실습실 컴퓨터 로그인,
martini.snucse.org 서버 접속하시면 됩니다.**