

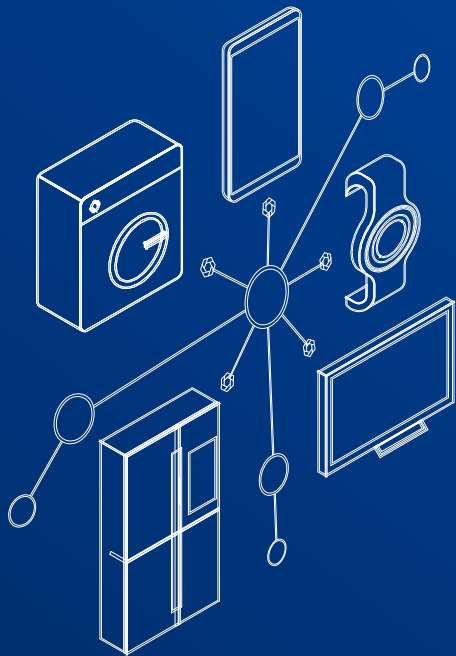


# Tizen Open-source Contribution

2018. 10

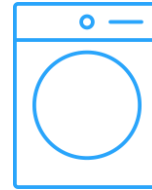
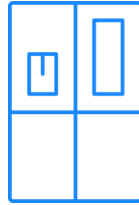
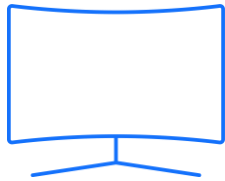
# Contents

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- I Tizen open-source
- Ⅱ Tizen Platform Contribution
- Ⅲ TizenRT Contribution
- Ⅳ 참고 사항

# I . Tizen open-source



## Tizen

## Tizen RT

[Gerrit system] review.tizen.org (git.tizen.org)	<b>Repository</b>	[Github system] github.com/samsung/tizenrt
① www.tizen.org ② source.tizen.org ③ developer.tizen.org ④ wiki.tizen.org	<b>Development Information</b>	① github.com/samsung/tizenrt ② source.tizen.org/ documentation/tizen-rt ③ wiki.tizen.org/tizen_rt
bugs.tizen.org	<b>Issue tracking</b>	github.com/Samsung/tizenrt/issues
① developer.tizen.org/forums ② lists.tizen.org	<b>Communication</b>	-
craftroom.tizen.org	<b>etc.</b>	-
Apache 2.0	<b>License</b>	Apache 2.0

# I . How to Tizen open-source contribution

## Tizen

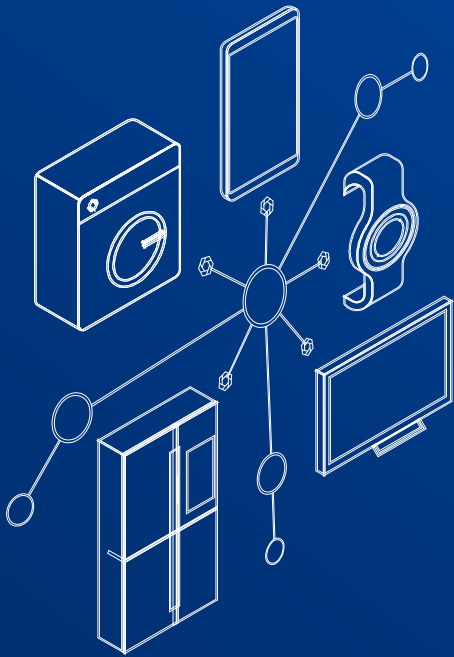
1. ID 만들기 : [www.tizen.org](http://www.tizen.org) 가입
  - developer, source, review, bugs, wiki craftroom 사이트에서 로그인 가능
2. SSH Public Key 생성 : 본인 컴퓨터
3. SSH Public Key 등록 : [review.tizen.org](http://review.tizen.org)
4. 관심 프로젝트 찾기 → Code 다운로드
5. Code 보기 → Code 수정
6. git add / commit / push  
<https://source.tizen.org/documentation/developer-guide/getting-started-guide/contributing-code-tizen>
7. commit 확인 : [review.tizen.org](http://review.tizen.org)
  - 몇 일 동안 review / reject / merge 등이 없을 경우, maintainer 에게 메일 보내기

## Tizen RT

1. ID 만들기 : [github.com](https://github.com) 가입 / 로그인
  - TizenRT 프로젝트 Repository로 이동 : [github.com/samsung/tizenrt](https://github.com/samsung/tizenrt)
2. TizenRT 프로젝트 Forking 하기
3. Code 다운로드
4. Code 보기 → Code 수정
5. git add / commit / push
6. commit 확인 : 본인 TizenRT Repository
7. Pull Request 하기
  - 본인 TizenRT → Samsung TizenRT

## II. Tizen Platform

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1. ID 만들기
2. SSH Public Key 생성
3. SSH Public Key 등록
4. 관심 프로젝트 찾기 및  
Code 다운로드
5. Code 보기 및 수정
6. Code Contribution 하기

# II. Tizen Platform Contribution

## 1. ID 만들기 : www.tizen.org 가입

**① Register**

**REGISTER**

Username \*

E-mail address \*

Confirm e-mail address \*

First Name

Last Name \*

Country

CAPTCHA

What code is in the image? \*

**REGISTER**

**② 내용 입력**

**③ REGISTER**

Welcome to Tizen! Please follow these steps below to verify your email, change your password and gain access to [tizen.org](http://tizen.org).

1. VERIFY EMAIL WITH ONE-TIME LOGIN  
Log in to the site by selecting this one-time login link or copying and pasting it in your browser:  
<https://www.tizen.org/user/reset/>

2. CHANGE PASSWORD  
Once logged in, you will be able to enter a password for your account.

-- Tizen team

**④ 본인 e-mail 확인**

## II. Tizen Platform Contribution

### 1. ID 만들기 : www.tizen.org 가입

Welcome to Tizen! Please follow these steps below to verify your email, change your password and gain access to [tizen.org](http://www.tizen.org).

---

1. VERIFY EMAIL WITH ONE-TIME LOGIN  
Log in to the site by selecting this one-time login link or copying and pasting it in your browser:

<https://www.tizen.org/user/reset/...>

2. CHANGE PASSWORD  
Once logged in, you will be able to enter a password for your account.

---

-- Tizen team

⑤ 링크 클릭

**TIZEN™** | About | Blogs | Community | Events

Home

✓ You have successfully validated your e-mail address.

### Reset password

This is a one-time login for *ehsson* and will expire on *23 July, 2018 - 18:58*.  
Click on this button to log in to the site and change your password.

This login can be used only once.

**LOG IN**

⑥ LOG IN

보기 ACCESS REQUESTS BOOKMARKS 편집 OPENID FILE BROWSER

이메일 주소 \*

A valid e-mail address. All e-mails from Tizen will be sent to this address. This e-mail address is not made public and news or notifications by e-mail. E-mail can not be changed after the account is validated.

비밀번호

비밀번호의 강도:

비밀번호 확인

⑦ 비밀번호 입력

현재의 비밀번호를 바꾸려면 두 입력 필드에 동일한 새로운 비밀번호를 입력하십시오.

이름

성 \*

성은 계정 ID에 필요합니다.

국가

Korea, Republic of

▼ 지역 설정

시간대

Asia/Tokyo: 화요일, 24 7월 2018 - 3:03오후 +0900

사용하려는 지역 시간 및 시간대를 선택하세요. 이 사이트 전체의 날짜와 시간은 지금 지정하는 시간대로 표시됩니다.

⑧ 저장

저장 계정 취소하기





## II. Tizen Platform Contribution

### 3. SSH Public Key 등록

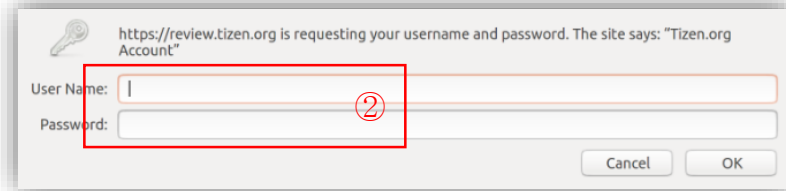
#### 1) ssh-key 복사

- ① ssh-key 내용을 마우스 선택
  - 마우스 오른쪽 버튼 클릭
  - "복사(copy)" 선택

```
samsung@edu:~$ cat ~/.ssh/id_rsa.pub  
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCA8+eVkBop8GYVfnRsEYsQd3GU2wHw0ba7zb1TZgV1z  
...  
//CSzKmGhR8Xupf+yZNNeBkHaACfcZiFRR995oF samsung@edu
```

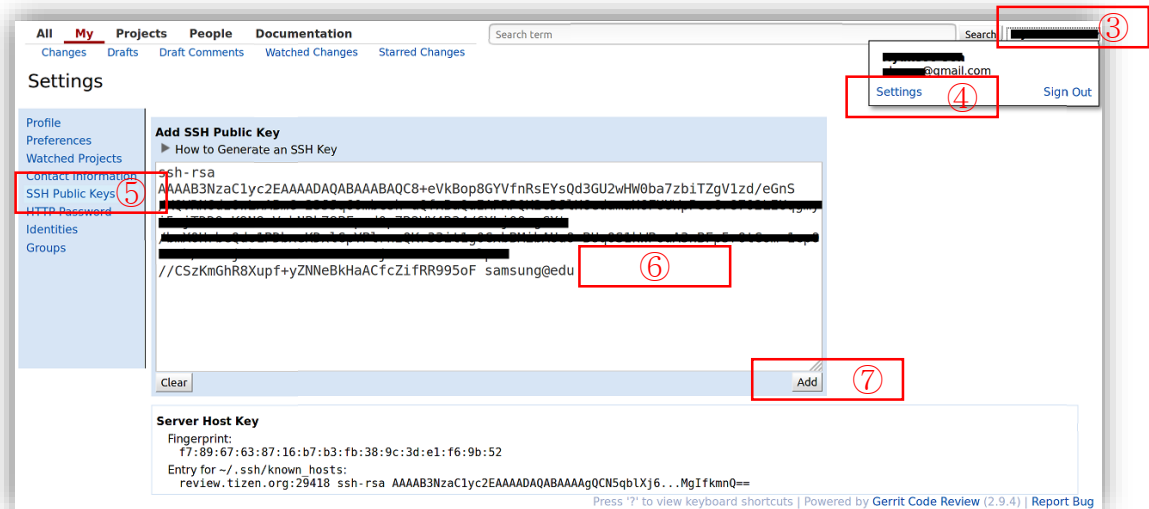
#### 2) review.tizen.org 사이트 접속

- ② ID, 비밀번호 입력 → 로그인



#### 3) ssh-key 등록

- ③ "ID" 선택
- ④ "Setting" 선택
- ⑤ "SSH Public Keys" 선택
- ⑥ 빈화면을 선택한 후  
붙여넣기(Ctrl + V)
- ⑦ "Add" 선택



# II. Tizen Platform Contribution

## 4. 관심 프로젝트 찾기 및 Code 다운로드

### 1) Code 다운로드 폴더 생성

예) "tizen-project" 폴더 생성

- ① mkdir tizen-project
- cd tizen-project

```
samsung@edu:~$ mkdir tizen-project ①
samsung@edu:~$ cd tizen-project/
samsung@edu:~/tizen-project$ git config --global user.name [redacted]
samsung@edu:~/tizen-project$ git config --global user.email [redacted] ②
samsung@edu:~/tizen-project$ git init
Initialized empty Git repository in /home/samsung/tizen-project/.git/
samsung@edu:~/tizen-project$
```

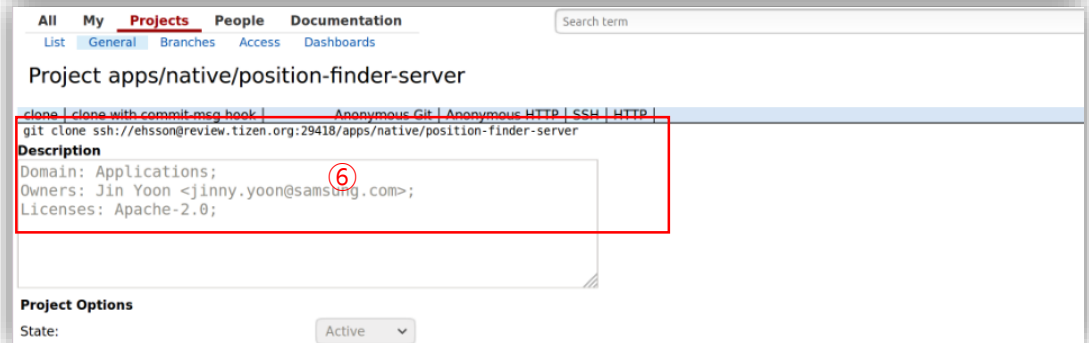
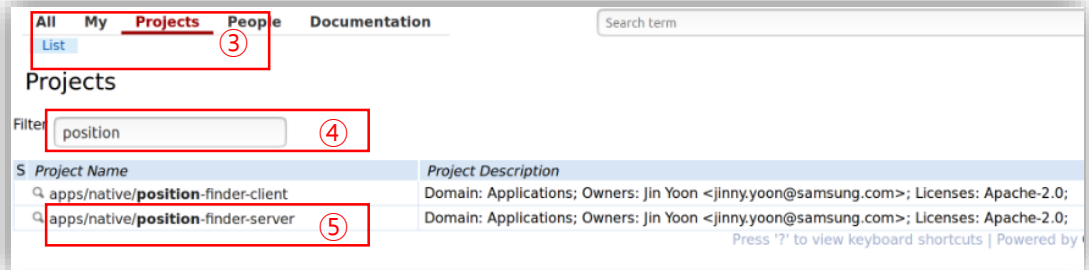
### 2) git 초기화

- ② git config --global user.name <이름>
- git config --global user.email <email>
- git init

### 3) 관심 프로젝트 찾기/선택

예) *position-finder-server* 프로젝트

- ③ "Projects" → "List" 선택
- ④ Filter 창에서 "position" 입력
- ⑤ "apps/native/position-finder-server" 선택
- ⑥ 프로젝트 기본 정보 확인

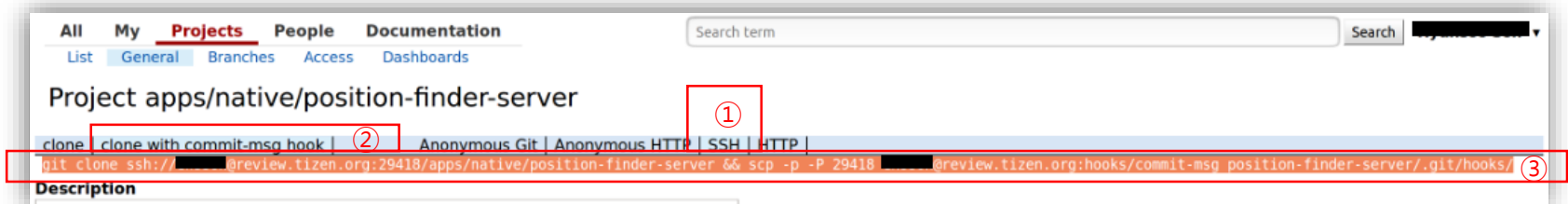


## II. Tizen Platform Contribution

### 4. 관심 프로젝트 찾기 및 Code 다운로드

#### 4) 관심 프로젝트의 git URL 복사

- ① "SSH" 선택
- ② "clone with commit-msg hook" 선택  
아래에 "git clone ssh://<ID>" 로 시작하는지 확인
- ③ "git clone ssh://<ID>@review.tizen.org: ~~~~ /.git/hooks/" 를 마우스로 드래그하여 블록 지정  
- 선택된 내용 복사(Ctrl + C)



#### 5) Code 다운받기 (Clone)

- ④ Ubuntu 터미널 창에서 복사한 git URL 붙여넣기 (Shift + Ctrl + V)
- ⑤ "(yes/no)? " 화면에서 "yes" 입력, "y" 입력하면 안됨  
- 다음 화면에서 "ssh key" 비밀번호 입력 (ssh key 생성했을 때 입력했던 비밀번호)

```
samsung@edu:~/tizen-project$ git clone ssh://.....@review.tizen.org:29418/apps/
native/position-finder-server && scp -p -P 29418 .....@review.tizen.org:hooks/c
ommit-msg position-finder-server/.git/hooks/
Cloning into 'position-finder-server'...
The authenticity of host '[review.tizen.org]:29418 ([13.124.117.121]:29418)' can
't be established.
RSA key fingerprint is SHA256:FGwdY2nDejBHXF2iPZwhDrk0ExCMn+xs4wFGQKyfrIE.
Are you sure you want to continue connecting (yes/no)? yes
```

## II. Tizen Platform Contribution

### 4. 관심 프로젝트 찾기 및 Code 다운로드

#### 6) 다운로드된 Code 확인

- ① 터미널 창에서 "ll" 또는 "ls" 입력 : "position-finder-server" 폴더가 있는지 확인
- ② "cd position-finder-server" 입력하여 폴더 들어가기
- ③ "ll" 또는 "ls" 입력하여 파일들이 다운로드 되었는지 확인

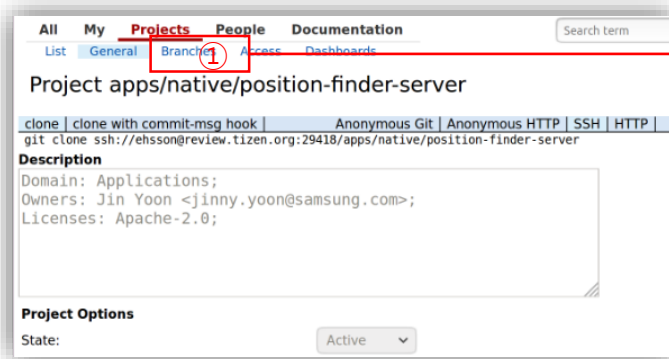
```
samsung@edu:~/tizen-project$ ll ①
total 16
drwxrwxr-x 4 samsung samsung 4096 7월 25 13:25 ./
drwxr-xr-x 33 samsung samsung 4096 7월 25 10:41 ../
drwxrwxr-x 7 samsung samsung 4096 7월 25 10:41 .git/
drwxrwxr-x 8 samsung samsung 4096 7월 25 13:25 position-finder-server/
samsung@edu:~/tizen-project$ cd position-finder-server/ ②
samsung@edu:~/tizen-project/position-finder-server$ ll ③
total 120
drwxrwxr-x 8 samsung samsung 4096 7월 25 13:25 ./
drwxrwxr-x 4 samsung samsung 4096 7월 25 13:25 ../
-rwxrwxr-x 1 samsung samsung 3034 7월 25 13:25 CMakeLists.txt*
-rw-rw-r-- 1 samsung samsung 36690 7월 25 13:25 .cproject
-rw-rw-r-- 1 samsung samsung 39 7월 25 13:25 .exportMap
drwxrwxr-x 8 samsung samsung 4096 7월 25 13:25 .git/
-rw-rw-r-- 1 samsung samsung 31 7월 25 13:25 .gitignore
drwxrwxr-x 3 samsung samsung 4096 7월 25 13:25 inc/
-rw-rw-r-- 1 samsung samsung 10995 7월 25 13:25 LICENSE.Flora
-rw-rw-r-- 1 samsung samsung 73 7월 25 13:25 org.tizen.position-finder-server.manifest
drwxrwxr-x 2 samsung samsung 4096 7월 25 13:25 packaging/
-rw-rw-r-- 1 samsung samsung 1280 7월 25 13:25 .project
-rw-rw-r-- 1 samsung samsung 182 7월 25 13:25 project_def.prop
drwxrwxr-x 2 samsung samsung 4096 7월 25 13:25 res/
-rw-rw-r-- 1 samsung samsung 403 7월 25 13:25 settings
drwxrwxr-x 3 samsung samsung 4096 7월 25 13:25 shared/
drwxrwxr-x 3 samsung samsung 4096 7월 25 13:25 src/
-rw-rw-r-- 1 samsung samsung 829 7월 25 13:25 tizen-manifest.xml
-rw-rw-r-- 1 samsung samsung 1130 7월 25 13:25 tizen-manifest.xml.in
-rw-rw-r-- 1 samsung samsung 319 7월 25 13:25 .tproject
samsung@edu:~/tizen-project/position-finder-server$
```

## II. Tizen Platform Contribution

### 5-1. Code 보기 및 수정 (웹브라우저 에서 보기 → Code 수정 불가)

#### 1) Branch 리스트 보기

- ① 프로젝트 조회화면에서 "Branches" 메뉴 선택
  - Branch 리스트 화면으로 이동



Branch Name	Revision	
HEAD	master	(gitweb)
refs/meta/config	c605b7f5697ef8dba7b4b980f28ca3b000b8ee22	(gitweb)
accepted/tizen_4.0_unified	9a0ee51c0761eebb5480cd99199a8d0892ef9aa2	(gitweb)
accepted/tizen_unified	dbf5629ae2ca0e05759003b6844be701520b893a	(gitweb)
challenge_1	14c813b7ad51148c6fcc2a7e53f5bcabb1ac5cca	(gitweb)
challenge_2	55d4b9f581feb67faa5b44ec89cef4dead874c40	(gitweb)
challenge_test	7001b78c82c59c0472f4ab41129682d501644ce2	(gitweb)
maintanance	826d18dbdddc9e7cae923b316bd37f8604cb7dea	(gitweb)
master	baf45e950f50a4b0c6081773297cd7bdba7c9f5c	(gitweb) ②

#### 2) Branch 내용 보기

- ② "master" branch 의 "(github)" 선택
  - contribution history 화면으로 이동

Code Review / apps / native / position-finder-server.git / shortlog

summary | shortlog | log | commit | commitdiff | review | tree  
first · prev · next

apps/native/position-finder-server.git

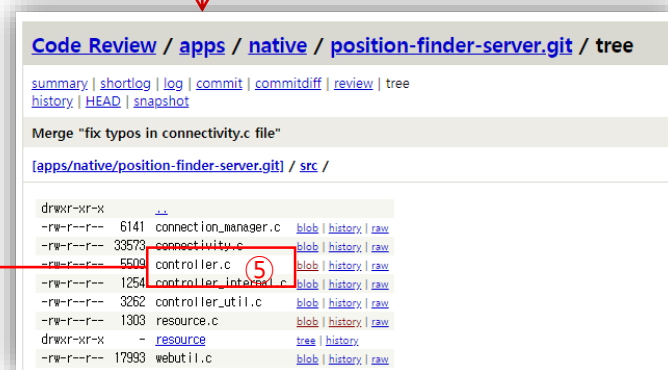
2018-05-03	Jin Yoon	Merge "fix typos in connectivity.c file" master
2018-05-02	Kisung Son	fix typos in connectivity.c file 72/177572/1
2018-04-27	Kisung Son	Fix coding rule violation in connectivity.c 09/177409/1
2018-01-26	junky han	Add Camera Module 27/168327/1
2017-12-21	Eunyoung Lee	Added ip addr to json data sent to the web server 42/164842/3
2017-12-21	Eunyoung Lee	Modified to work in Tizen Studio 39/164839/1
2017-12-21	Eunyoung Lee	Added REQ_TIMEOUT (7L) 51/164751/1

# II. Tizen Platform Contribution

## 5-1. 웹브라우저에서 Code 보기 → Code 수정 불가

### 3) 폴더 및 Code 보기

- ③ "tree" 메뉴 선택 : 폴더 내용 화면으로 이동
- ④ "src" 폴더 선택
- ⑤ 파일명 선택 : Code 화면으로 이동

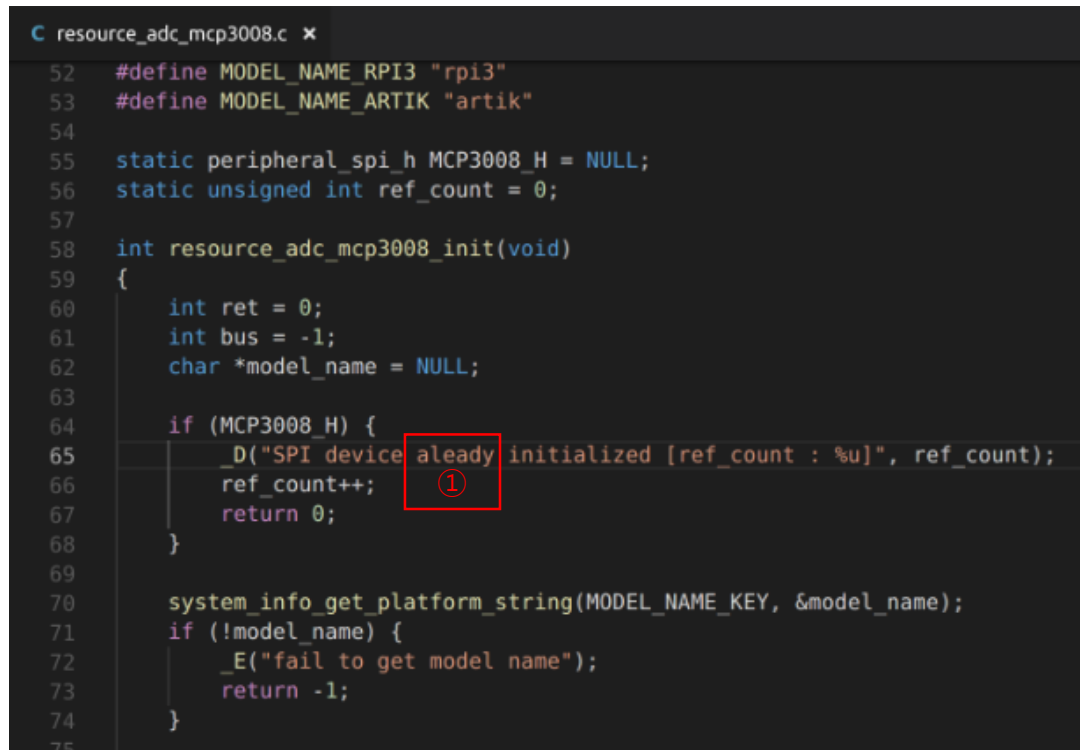


## II. Tizen Platform Contribution

### 5-2. 에디터에서 Code 보기 및 수정 (Visual Studio Code, 다른 에디터 사용 가능)

#### 1) Code 보기 및 수정

- code 프로그램 실행 : Visual Studio Code 다운로드 사이트 → [code.visualstudio.com/?wt.mc\\_id=DX\\_841432](https://code.visualstudio.com/?wt.mc_id=DX_841432)
- Code 파일 열기 (예: `resource_adc_mcp3008.c`)
- Code 분석 및 수정 (예: ① 오타 수정 "`aleady` → `already`")
- code 프로그램 종료



```
C resource_adc_mcp3008.c x
52 #define MODEL_NAME_RPI3 "rpi3"
53 #define MODEL_NAME_ARTIK "artik"
54
55 static peripheral_spi_h MCP3008_H = NULL;
56 static unsigned int ref_count = 0;
57
58 int resource_adc_mcp3008_init(void)
59 {
60     int ret = 0;
61     int bus = -1;
62     char *model_name = NULL;
63
64     if (MCP3008_H) {
65         _D("SPI device aleady initialized [ref_count : %u]", ref_count);
66         ref_count++;
67         return 0;
68     }
69
70     system_info_get_platform_string(MODEL_NAME_KEY, &model_name);
71     if (!model_name) {
72         _E("fail to get model name");
73         return -1;
74     }
75 }
```



# II. Tizen Platform Contribution

## 6. Code Contribution 하기

### 1) Contribution 준비

- ① 수정한 파일이 있는 폴더로 이동  
(예: `cd src/resource`)

```
samsung@edu:~/tizen-project/position-finder-server$ cd src/resource/  
samsung@edu:~/tizen-project/position-finder-server/src/resource$ git add resource_adc_mcp3008.c  
samsung@edu:~/tizen-project/position-finder-server/src/resource$ git commit
```

- ② 수정한 파일을 stage 하기

- `git add <수정 파일명>` (예: `git add resource_adc_mcp3008.c`)

- ③ commit 메시지 작성 프로그램 실행

- `git commit`

- ④ commit 메시지 작성

- 첫째 줄 : commit 메시지 제목

- 둘째 줄 이하 : commit 메시지 내용

- ⑤ commit 메시지 저장 / 종료

- 저장 : `Ctrl + o` → 엔터키

- 종료 : `Ctrl + x`

```
GNU nano 2.5.3 File: /home/eson/projects/position-finder-server/.git/COMMIT_EDITMSG Modified  
fix typo in resource_adc_mcp3008.c  
already -> already  
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.  
# On branch master  
# Your branch is up-to-date with 'origin/master'.  
#  
# Changes to be committed:  
#   modified:   resource_adc_mcp3008.c  
#  
File Name to Write: /home/eson/projects/position-finder-server/.git/COMMIT_EDITMSG  
^G Get Help      M-D DOS Format  M-A Append      M-B Backup File  
^C Cancel        M-M Mac Format  M-P Prepend     ^T To Files
```

```
samsung@edu:~/tizen-project/position-finder-server/src/resource$ git commit  
[master cdc1f42] fix typo in resource_adc_mcp3008.c already -> already  
1 file changed, 1 insertion(+), 1 deletion(-)  
samsung@edu:~/tizen-project/position-finder-server/src/resource$
```



## II. Tizen Platform Contribution

### 6. Code Contribution 하기

#### 2) Code 및 Commit 메시지 등록

⑥ 수정한 내용을 Tizen git repository 에 등록하기

- git push origin HEAD:refs/for/<remote\_branch\_name>

예) git push origin HEAD:refs/for/master

<https://source.tizen.org/documentation/developer-guide/getting-started-guide/contributing-code-tizen>

- 패스워드 입력 메시지가 나타나면 "ssh key" 패스워드를 입력 (review.tizen.org 로그인 패스워드 아님)

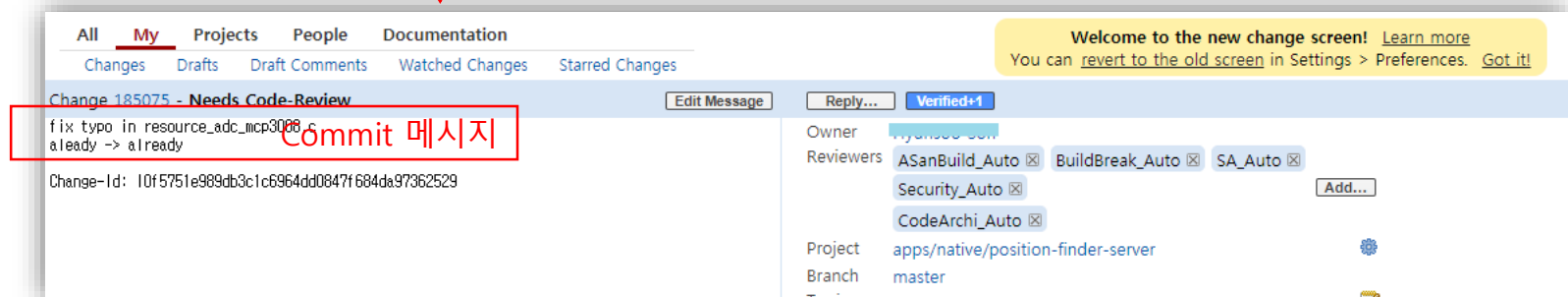
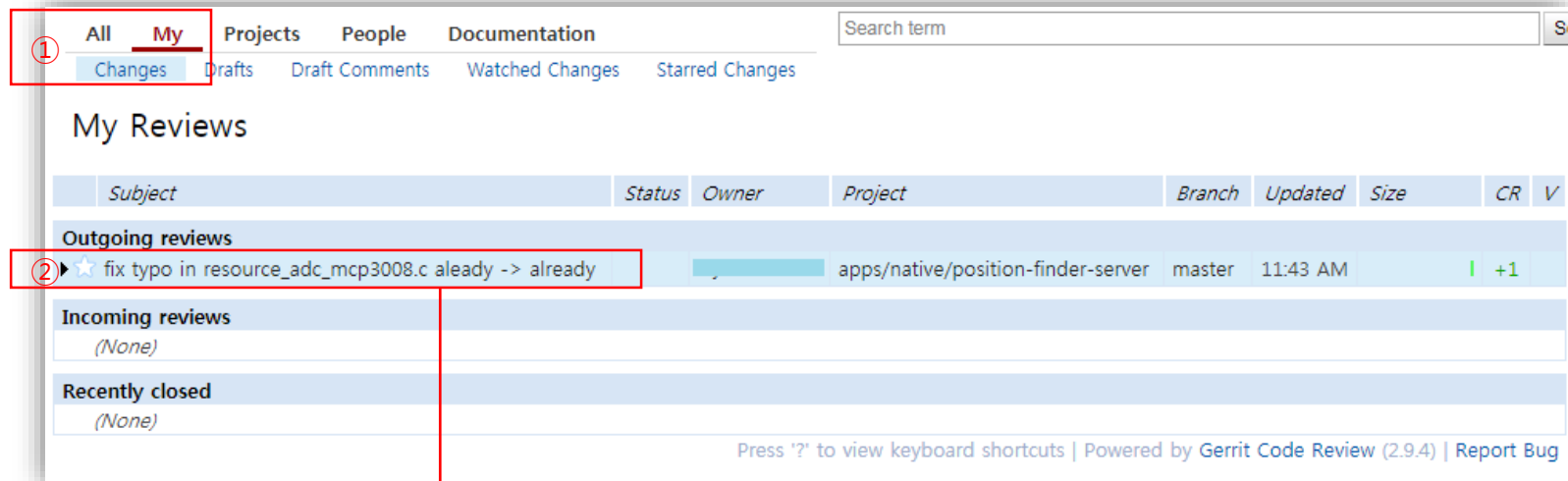
```
samsung@edu:~/tizen-project/position-finder-server/src/resource$ git push origin HEAD:refs/for/master ⑥
Counting objects: 5, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 487 bytes | 0 bytes/s, done.
Total 5 (delta 4), reused 0 (delta 0)
remote: Resolving deltas: 100% (4/4)
remote:
remote: Processing changes: new: 1, refs: 1, done
remote:
remote: New Changes:
remote:   https://review.tizen.org/gerrit/185075
remote:
To ssh://[redacted]@review.tizen.org:29418/apps/native/position-finder-server
* [new branch]      HEAD -> refs/for/master
samsung@edu:~/tizen-project/position-finder-server/src/resource$
```

# II. Tizen Platform Contribution

## 6. Code Contribution 하기

### 3) 웹브라우저에서 나의 Contribution 내용 보기

- ① review.tizen.org 메뉴 "My" → "Changes" 선택
  - 본인이 Contribution 한 리스트 보기

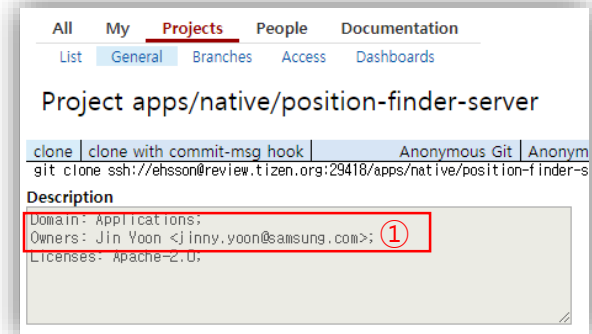


# II. Tizen Platform Contribution

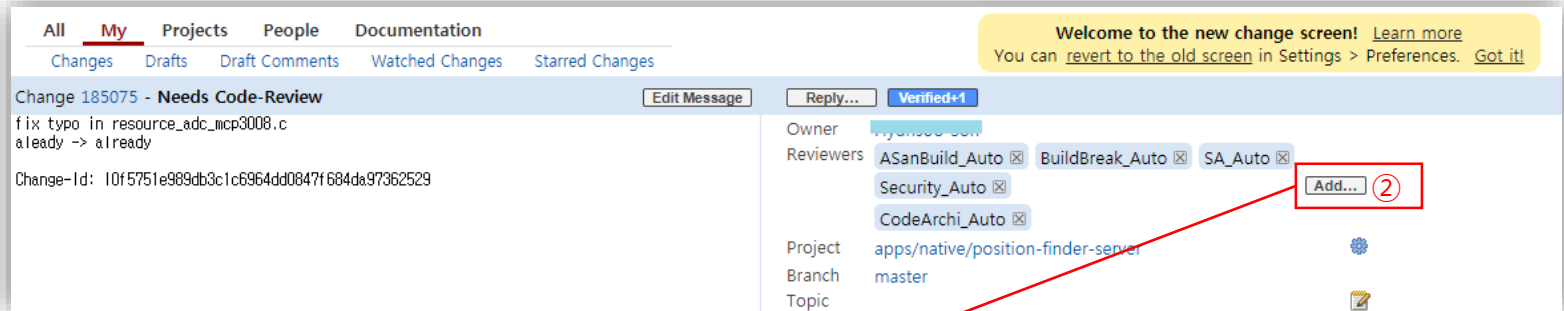
## 6. Code Contribution 하기

### 3) Reviewer 지정

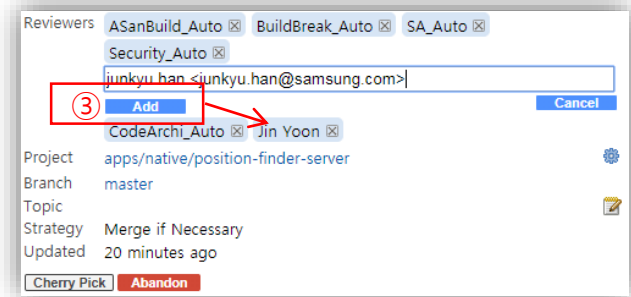
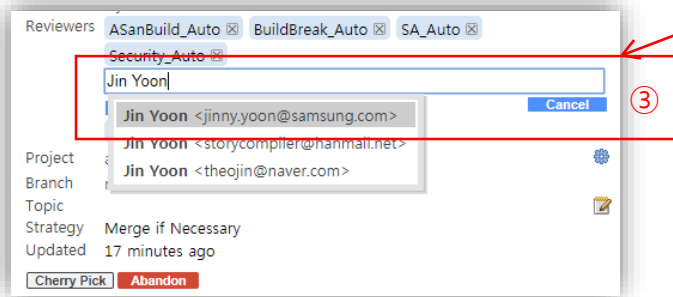
- ① 해당 프로젝트의 Reviewer 찾기
  - 프로젝트 개요 화면 : Owner
  - 다른 contribution 내용에서 등록된 Reviewer 참고



- ② "Add..." 선택



- ③ Reviewer 이름 입력, 저장(Add)





# II. Tizen Platform Contribution

## 6. Code Contribution 하기

※ Contribution 관리 → Reviewer가 승인(Merge) → Tizen open-source Mainline에 반영

The screenshot shows the Tizen Code Review web interface. Red boxes and arrows highlight key features and workflow steps:

- Review 의견 남기기** (Leave Review Comment): Points to the 'Reply...' button.
- +1 Voting**: Points to the 'Verified+1' button.
- Commit 메시지 수정** (Edit Commit Message): Points to the 'Edit Message' button.
- 수정 Code를 다른 Branch에 동일하게 적용** (Apply the same code to another branch): Points to the 'Cherry Pick' button.
- Contribution 취소하기** (Cancel Contribution): Points to the 'Abandon' button.
- 수정된 Code 및 Code review 내용 보기** (View modified code and review content): Points to the file list, specifically 'src/resource/resource\_adc\_mcp3008.c'.
- Review History**: A table at the bottom showing the sequence of reviews.

**Code Review - Cherry Pick Change to Another Branch**

Cherry Pick to Branch:

Ch	template	Message:
template_2_0	resource_adc_mcp3008.c	
template_st	e989db3c1c6964dd0847f684da97362529	

Cherry Pick Change [Cancel]

Commit: cdc1f42406d33739a611804fc8df5bf52f03d899 (gitweb)  
Parent(s): baf45e950f50a4b0c6081773297cd7bdba7c9f5c (gitweb)  
Change-Id: I0f5751e989db3c1c6964dd0847f684da97362529

Files

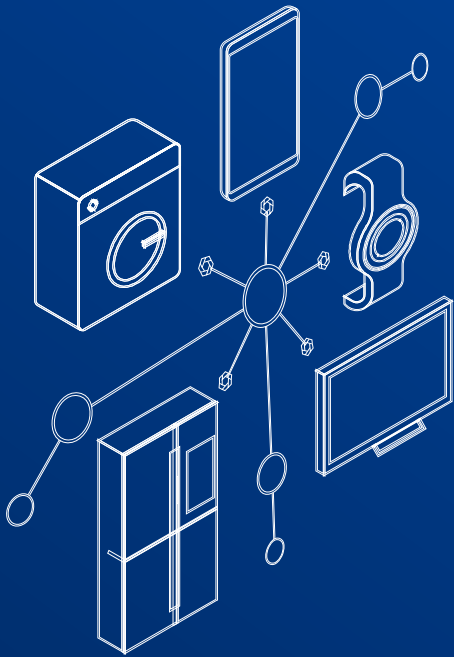
File Path	Comments	Size
Commit Message		
src/resource/resource_adc_mcp3008.c	2	
	+1, -1	

History

2	Uploaded patch set 1.	11:42 AM
Security_Auto	Patch Set 1: Code-Review+1 [AVAS CVE_Alarm] There is no security rule violation!	11:43 AM
CodeArchi_Auto	Patch Set 1: One file is analyzed for understanding codes and for detecting bad smells based on software metrics. [File Metrics]src/resource/resou...	11:43 AM
ASanBuild_Auto	Patch Set 1: Code-Review+1 [BBC_ASAN] Build success.	11:46 AM
BuildBreak_Auto	Patch Set 1: Code-Review+1 [BBC] Build success.	11:46 AM
SA_Auto	Patch Set 1: Code-Review+1 SVACE Result src/connectivity.c [WGID: 31790 ][Critical] Dynamic memory referenced by 'data_value' was allocated at...	11:47 AM

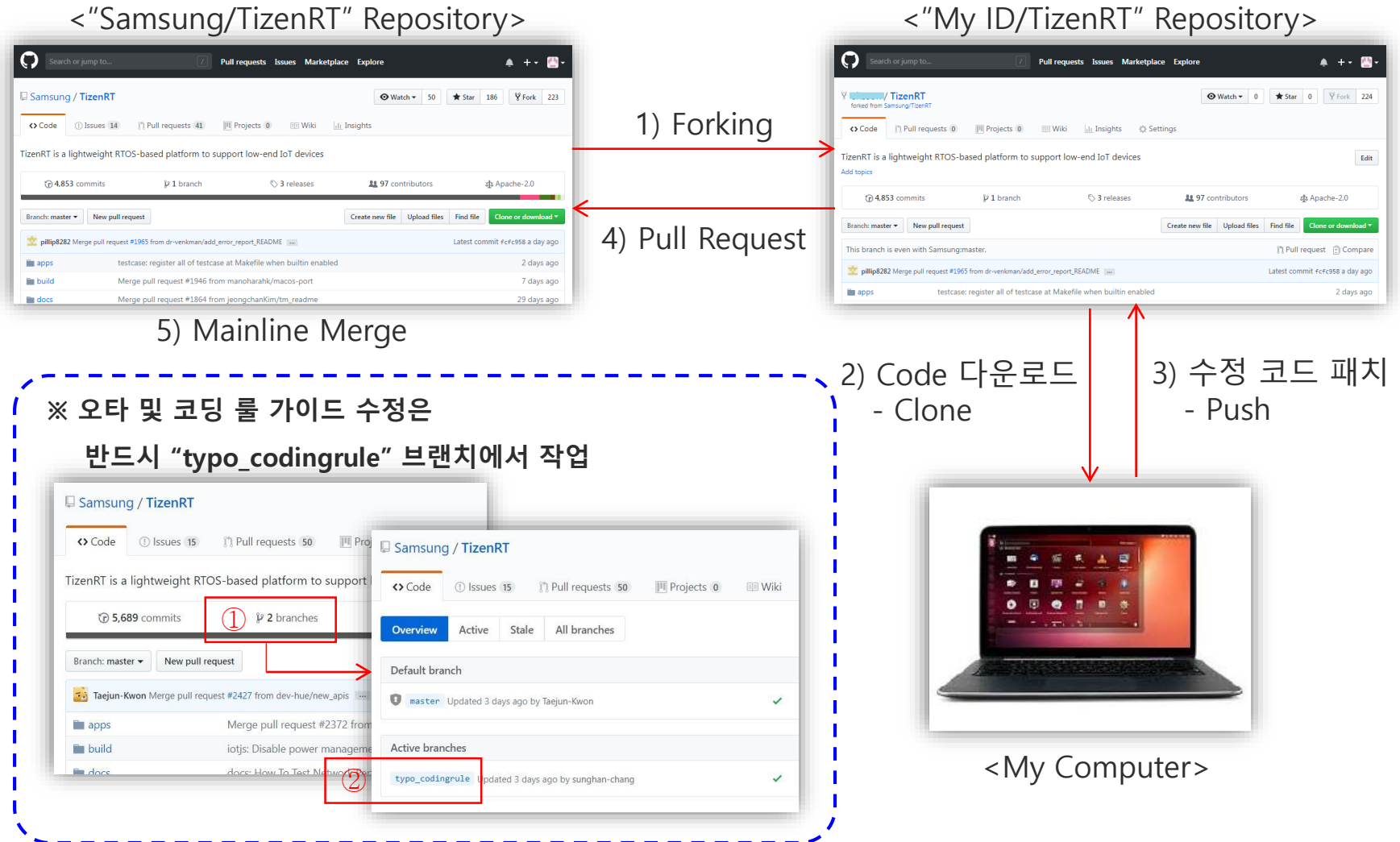
# III. TizenRT

---



1. github ID 만들기
2. Forking 하기
3. Code 다운로드
4. Code 수정
5. Code contribution 하기
6. Code contribution 확인하기
7. Mainline 에 Merge 하기

# III. TizenRT Contribution Flow(outline)



# Ⅲ. TizenRT Contribution

## 1. github ID 만들기

1) github.com 접속

2) 계정 만들기

① "Sign up"

② "Username", "Email address", "Password" 입력

③ "Create an account"

3) 로그인

The screenshot shows the GitHub 'Join GitHub' page. At the top right, the 'Sign up' link is highlighted with a red box and a circled 1. Below the navigation bar, the 'Join GitHub' section includes a progress bar with three steps: 'Step 1: Create personal account', 'Step 2: Choose your plan', and 'Step 3: Tailor your experience'. The 'Create your personal account' section contains three input fields: 'Username', 'Email address', and 'Password'. The 'Email address' field is highlighted with a red box and a circled 2. Below the 'Password' field, there is a note: 'Use at least one lowercase letter, one numeral, and seven characters.' At the bottom, the 'Create an account' button is highlighted with a red box and a circled 3. To the right of the form, there is a section titled 'You'll love GitHub' with a list of benefits: 'Unlimited collaborators', 'Unlimited public repositories', 'Great communication', 'Frictionless development', and 'Open source community'.



# III. TizenRT Contribution

## 2. TizenRT 프로젝트 Forking 하기

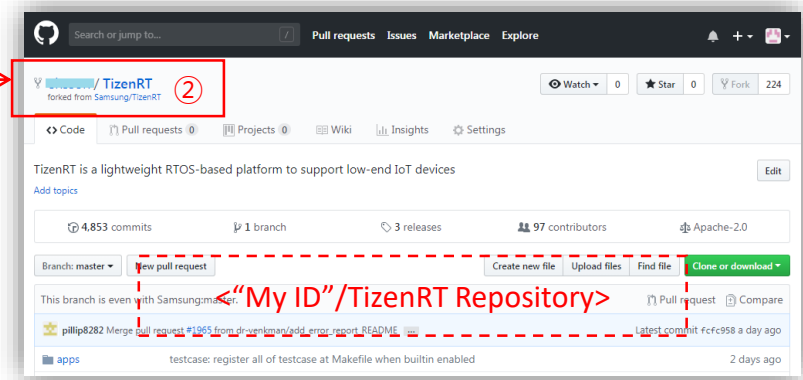
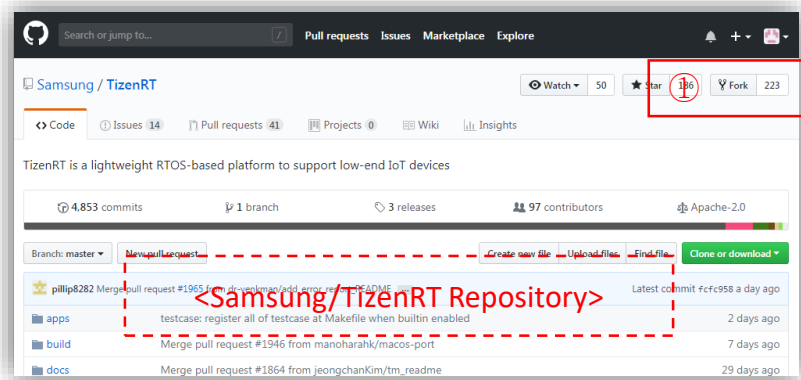
1) [github.com/samsung/tizenrt](https://github.com/samsung/tizenrt) 접속

2) Forking 하기

① "Fork" 선택

3) 본인 계정의 "TizenRT" Repository 로 이동

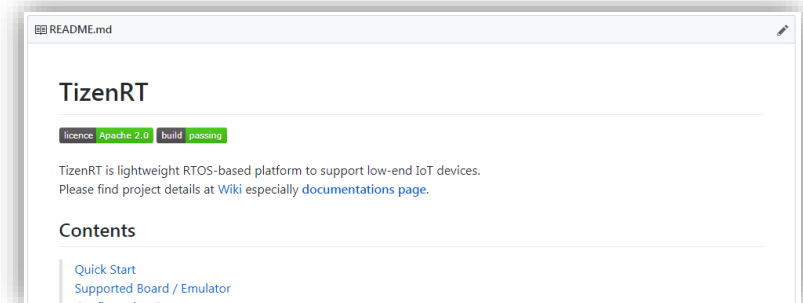
② "<본인 ID>/TizenRT" Repository 생성 여부 확인



4) TizenRT 프로젝트 기본 정보 확인

- Readme.md 내용 읽기

- License, Quick Start, Supported Board, Getting Toolchine/Source, How to build, etc



# III. TizenRT Contribution

## 3. Code 다운로드

### 1) Code 다운로드 폴더 생성

예) "tizen-project" 폴더 생성

- ① mkdir tizen-project
- cd tizen-project

```
samsung@edu:~$ mkdir tizen-project ①
samsung@edu:~$ cd tizen-project/
samsung@edu:~/tizen-project$ git config --global user.name <이름>
samsung@edu:~/tizen-project$ git config --global user.email <이메일> ②
samsung@edu:~/tizen-project$ git init
Initialized empty Git repository in /home/samsung/tizen-project/.git/
samsung@edu:~/tizen-project$
```

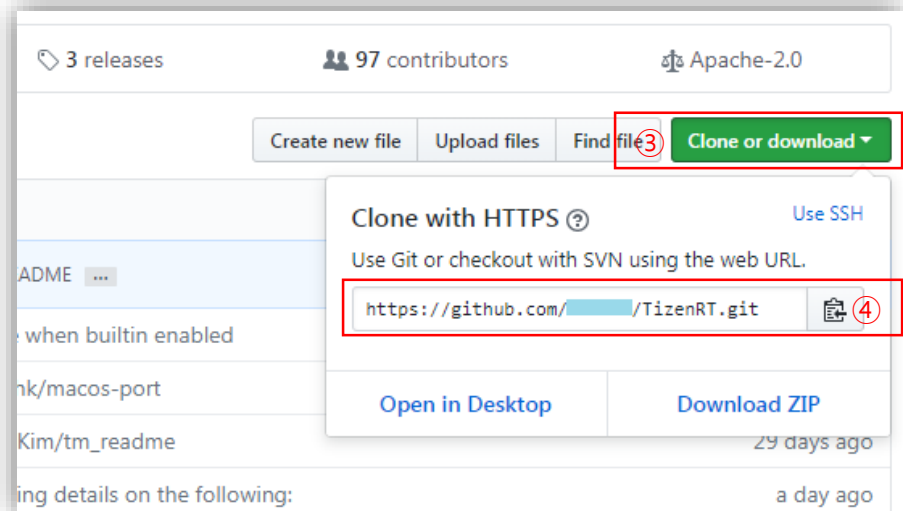
### 2) git 초기화

- ② git config --global user.name <이름>
- git config --global user.email <email>
- git init

### 3) Code 다운로드

[웹브라우저에서]

- ③ "Clone or download" 선택
- ④ "URL 복사 아이콘" 선택
- 또는 URL 기억
- https://github.com/<ID>/TizenRT.git



# III. TizenRT Contribution

## 3. Code 다운로드

### 3) Code 다운로드 하기(Clone)

[Ubuntu 터미널 창에서]

③ "git clone https://github.com/<ID>/TizenRT.git" 입력

- 약 100MB 다운로드, 약 2~3분 소요(네트워크 속도에 따라 변동)

```
samsung@edu:~/tizen-projects$ git clone https://github.com/...../TizenRT.git ③
Cloning into 'TizenRT'...
remote: Counting objects: 64230, done.
remote: Compressing objects: 100% (24/24), done.
remote: Total 64230 (delta 31), reused 33 (delta 27), pack-reused 64179
Receiving objects: 100% (64230/64230), 98.46 MiB | 552.00 KiB/s, done.
Resolving deltas: 100% (41671/41671), done.
Checking connectivity... done.
samsung@edu:~/tizen-project$
```

### 4) 다운로드된 Code 확인

④ 터미널 창에서 "ll" 또는 "ls" 입력 : "TizenRT" 폴더가 있는지 확인

⑤ "cd TizenRT" 입력하여 폴더 들어가기

⑥ "ll" 또는 "ls" 입력하여 파일들이 다운로드 되었는지 확인

```
samsung@edu:~/tizen-projects$ ll ④
total 16
drwxrwxr-x 4 samsung samsung 4096 7월 26 16:54 ./
drwxr-xr-x 34 samsung samsung 4096 7월 26 10:59 ../
drwxrwxr-x 7 samsung samsung 4096 7월 25 10:41 .git/
drwxrwxr-x 11 samsung samsung 4096 7월 26 16:56 TizenRT/
samsung@edu:~/tizen-projects$ cd TizenRT/ ⑤
samsung@edu:~/tizen-project/TizenRT$
```

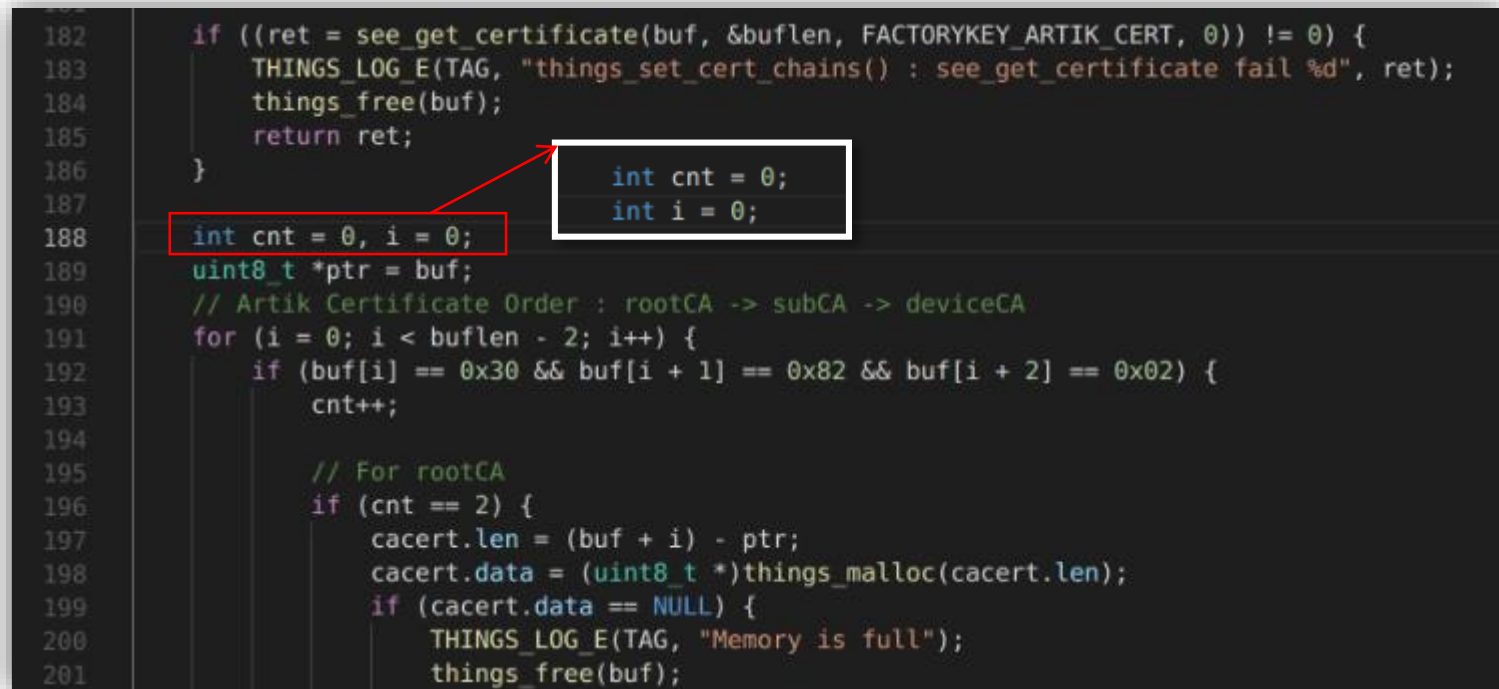
```
samsung@edu:~/tizen-project/TizenRT$ ll ⑥
total 72
drwxrwxr-x 11 samsung samsung 4096 7월 26 16:56 ./
drwxrwxr-x 4 samsung samsung 4096 7월 26 16:54 ../
drwxrwxr-x 11 samsung samsung 4096 7월 26 16:55 apps/
drwxrwxr-x 5 samsung samsung 4096 7월 26 16:55 build/
-rw-rw-r-- 1 samsung samsung 593 7월 26 16:55 .clang-format
drwxrwxr-x 4 samsung samsung 4096 7월 26 16:55 docs/
drwxrwxr-x 41 samsung samsung 4096 7월 26 16:55 external/
drwxrwxr-x 5 samsung samsung 4096 7월 26 16:55 framework/
drwxrwxr-x 8 samsung samsung 4096 7월 26 16:56 .git/
-rw-rw-r-- 1 samsung samsung 195 7월 26 16:55 .gitignore
drwxrwxr-x 4 samsung samsung 4096 7월 26 16:56 lib/
-rw-rw-r-- 1 samsung samsung 11357 7월 26 16:55 LICENSE
drwxrwxr-x 14 samsung samsung 4096 7월 26 16:56 os/
-rw-rw-r-- 1 samsung samsung 3272 7월 26 16:55 README.md
drwxrwxr-x 7 samsung samsung 4096 7월 26 16:56 tools/
-rw-rw-r-- 1 samsung samsung 731 7월 26 16:55 .travis.yml
samsung@edu:~/tizen-project/TizenRT$
```

# III. TizenRT Contribution

## 4-1. 에디터에서 Code 수정하기 (Visual Studio Code, 다른 에디터 사용 가능)

### 1) Code 보기 및 수정

- code 프로그램 실행 : Visual Studio Code 다운로드 사이트 → [code.visualstudio.com/?wt.mc\\_id=DX\\_841432](https://code.visualstudio.com/?wt.mc_id=DX_841432)
- Code 파일 열기 (예: *thing\_sss\_manager.c*)
- Code 분석 및 수정 (예: ① Coding Rule 가이드 위반 → 각각의 변수는 새로운 줄에서 선언)
- code 프로그램 종료



```
182     if ((ret = see_get_certificate(buf, &buflen, FACTORYKEY_ARTIK_CERT, 0)) != 0) {
183         THINGS_LOG_E(TAG, "things_set_cert_chains() : see_get_certificate fail %d", ret);
184         things_free(buf);
185         return ret;
186     }
187
188     int cnt = 0, i = 0;
189     uint8_t *ptr = buf;
190     // Artik Certificate Order : rootCA -> subCA -> deviceCA
191     for (i = 0; i < buflen - 2; i++) {
192         if (buf[i] == 0x30 && buf[i + 1] == 0x82 && buf[i + 2] == 0x02) {
193             cnt++;
194
195             // For rootCA
196             if (cnt == 2) {
197                 cacert.len = (buf + i) - ptr;
198                 cacert.data = (uint8_t *)things_malloc(cacert.len);
199                 if (cacert.data == NULL) {
200                     THINGS_LOG_E(TAG, "Memory is full");
201                     things_free(buf);
```

# III. TizenRT Contribution

## 5-1. Code Contribution 하기 : <본인 ID>/TizenRT

### 1) Contribution 준비

- ① 수정한 파일이 있는 폴더로 이동

(예: `cd framework/src/st_things/things_stack/framework`)

```
samsung@edu:~/tizen-project/TizenRT$ cd framework/  
samsung@edu:~/tizen-project/TizenRT/framework$ cd src  
samsung@edu:~/tizen-project/TizenRT/framework/src$ cd st_things/  
samsung@edu:~/tizen-project/TizenRT/framework/src/st_things$ cd things_stack/  
samsung@edu:~/tizen-project/TizenRT/framework/src/st_things/things_stack/framework$
```

①

- ② 수정한 파일을 stage 하기

- `git add <수정 파일명>` (예: `git add thing_sss_manager.c`)

```
/framework$ git add things_sss_manager.c  
/framework$ git commit
```

②

③

- ③ commit 메시지 작성 프로그램 실행

- `git commit`

- ④ commit 메시지 작성

- 첫째 줄 : commit 메시지 제목

- 둘째 줄 이하 : commit 메시지 내용

- ⑤ commit 메시지 저장 / 종료

- 저장 : `Ctrl + o` → 엔터키

- 종료 : `Ctrl + x`

```
GNU nano 2.5.3 File: /home/samsung/tizen-project/TizenRT/.git/COMMIT_EDITMSG Modified  
Apply the coding rule in things_sss_manager.c  
Each variable shall be declared in the new line.  
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.  
# On branch master  
# Your branch is up-to-date with 'origin/master'.  
#  
# Changes to be committed:  
#   modified:   things_sss_manager.c  
#  
File Name to Write: /home/samsung/tizen-project/TizenRT/.git/COMMIT_EDITMSG  
^G Get Help      M-D DOS Format  M-A Append      M-B Backup File  
^C Cancel        M-M Mac Format  M-P Prepend     ^T To Files
```

⑤

```
samsung@edu:~/tizen-project/TizenRT/framework/src/st_things/things_stack/framework$ git commit  
[master 91bb468] Apply the coding rule in things_sss_manager.c Each variable shall be declared in the new line.  
1 file changed, 2 insertions(+), 1 deletion(-)  
samsung@edu:~/tizen-project/TizenRT/framework/src/st_things/things_stack/framework$
```

⑤



# III. Tizen Platform Contribution

## 5-1. Code Contribution 하기 : <본인 ID>/TizenRT

### 2) Code 및 Commit 메시지 등록

⑥ 수정한 내용을 "본인 ID의 TizenRT" git repository 에 등록하기

- git push
- 중간에 ID 와 패스워드를 물으면 github 의 본인 ID와 패스워드 입력

```
samsung@edu:~/tizen-project/TizenRT/framework/src/st_things/things_stack/framework$ git push ⑥
warning: push.default is unset; its implicit value has changed in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the traditional behavior, use:

    git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

    git config --global push.default simple

When push.default is set to 'matching', git will push local branches
to the remote branches that already exist with the same name.

Since Git 2.0, Git defaults to the more conservative 'simple'
behavior, which only pushes the current branch to the corresponding
remote branch that 'git pull' uses to update the current branch.


See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

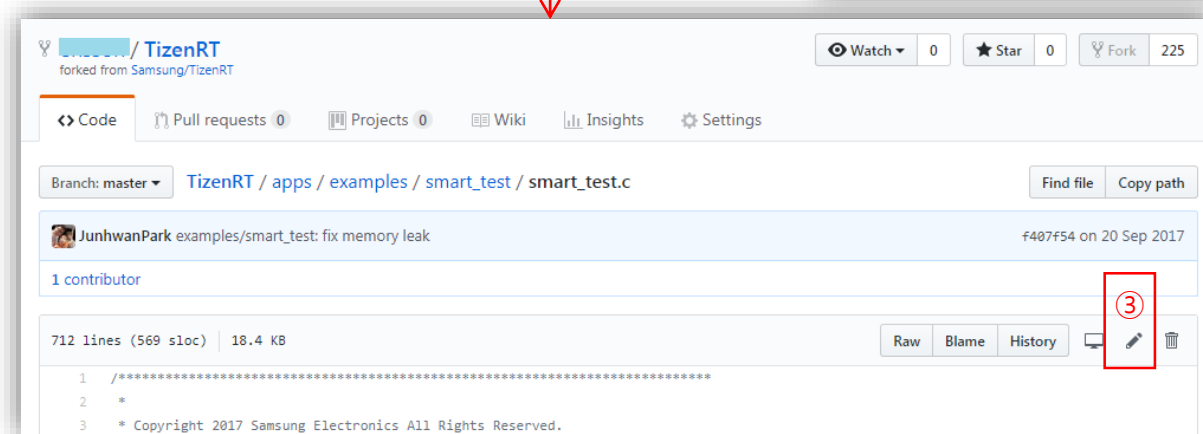
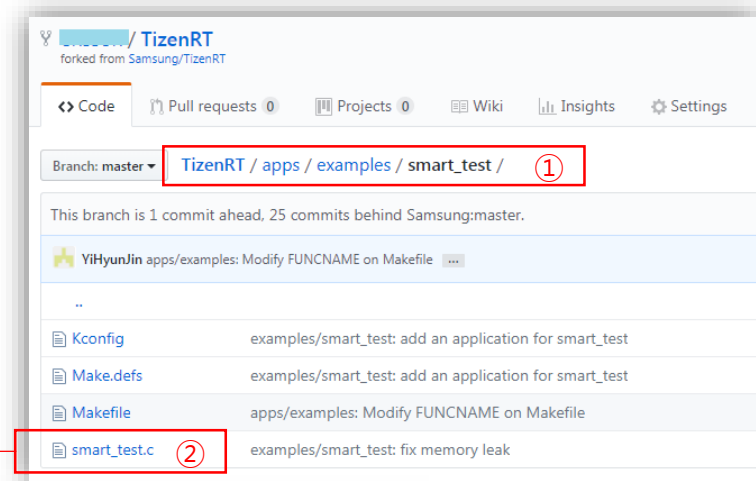
Username for 'https://github.com': ⑥
Password for 'https://[redacted]@github.com':
Counting objects: 8, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (8/8), done.
Writing objects: 100% (8/8), 660 bytes | 0 bytes/s, done.
Total 8 (delta 7), reused 0 (delta 0)
remote: Resolving deltas: 100% (7/7), completed with 7 local objects.
To https://github.com/[redacted]/TizenRT.git
   fcfc958..91bb468  master -> master
samsung@edu:~/tizen-project/TizenRT/framework/src/st_things/things_stack/framework$
```

# III. TizenRT Contribution

## 4-2. 웹브라우저에서 Code 수정 (Chrome 브라우저 기준)

### 1) Code 보기

- ① 웹브라우저에서 폴더 선택 (예: *TizenRT/apps/examples/smart\_test* 폴더)
- ② Code 파일 열기 (예: *smart\_test.c*)
- ③ "  (수정)" 선택



# III. TizenRT Contribution

## 5-2. Code Contribution 하기 : <본인 ID>/TizenRT

### 2) Code 수정 및 Commit 하기

④ 수정할 내용 찾기 → 글자 수정 (예: 영문법 오류 문장 및 오타 수정)

- record → recording, specify → specify

⑤ Commit 메시지 작성

⑥ "Commit changes" 선택

```
545 fprintf(stderr, "OPTIONS\n");
546 fprintf(stderr, "    -c COUNT\n");
547 fprintf(stderr, "        Performs a circular log style test where a fixed number of fixed\n");
548 fprintf(stderr, "        length records are written and then overwritten with new data.\n");
549 fprintf(stderr, "        Uses the -r, -e and -t options to specify the parameters of the\n");
550 fprintf(stderr, "        ④ record geometry and update operation. The COUNT parameter sets\n");
551 fprintf(stderr, "        the number of record updates to perform.\n\n");
552
553 fprintf(stderr, "    -s SEEKCOUNT\n");
554 fprintf(stderr, "        Performs a simple seek test where to validate the SMARTFS seek\n");
555 fprintf(stderr, "        operation. Uses the -l option to specify the number of test\n");
556 fprintf(stderr, "        lines to write to the test file. The SEEKCOUNT parameter sets\n");
557 fprintf(stderr, "        the number of seek/read operations to perform.\n\n");
558
559 fprintf(stderr, "    -w WRITECOUNT\n");
560 fprintf(stderr, "        Performs a seek/write/seek/read test where to validate the SMARTFS\n");
561 fprintf(stderr, "        seek/write operation. Uses the -l option ④ specify the number of\n");
562 fprintf(stderr, "        test lines to write to the test file. The WRITECOUNT parameter sets\n");
563 fprintf(stderr, "        the number of seek/write operations to perform.\n\n");
```



### Commit changes

Correct English grammar and typo errors

record -> recording  
specify -> specify

☒ Commit directly to the master branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

⑥ Commit changes

Cancel

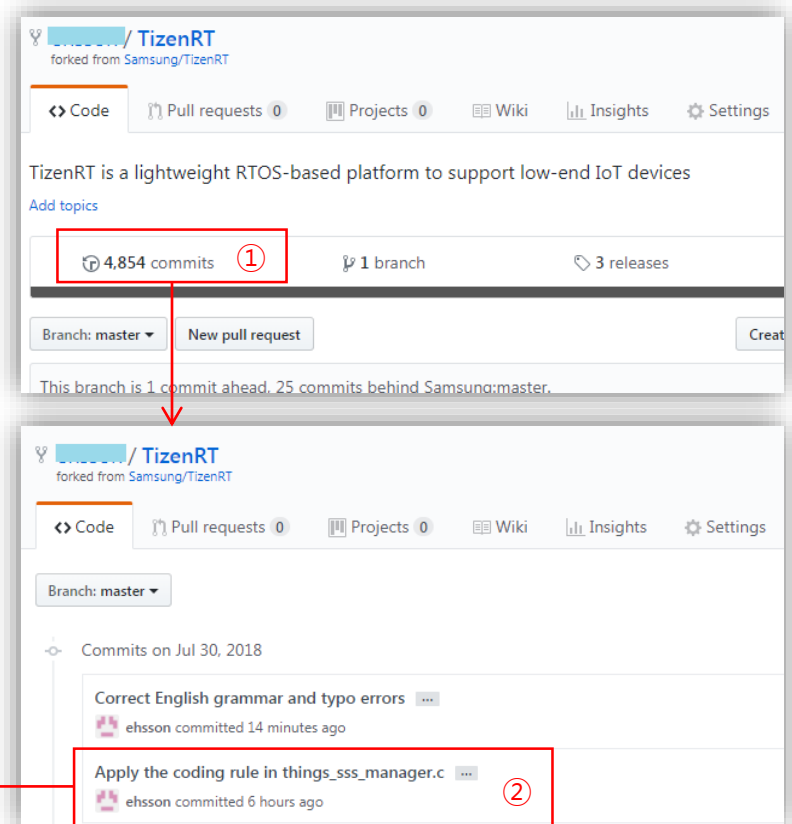
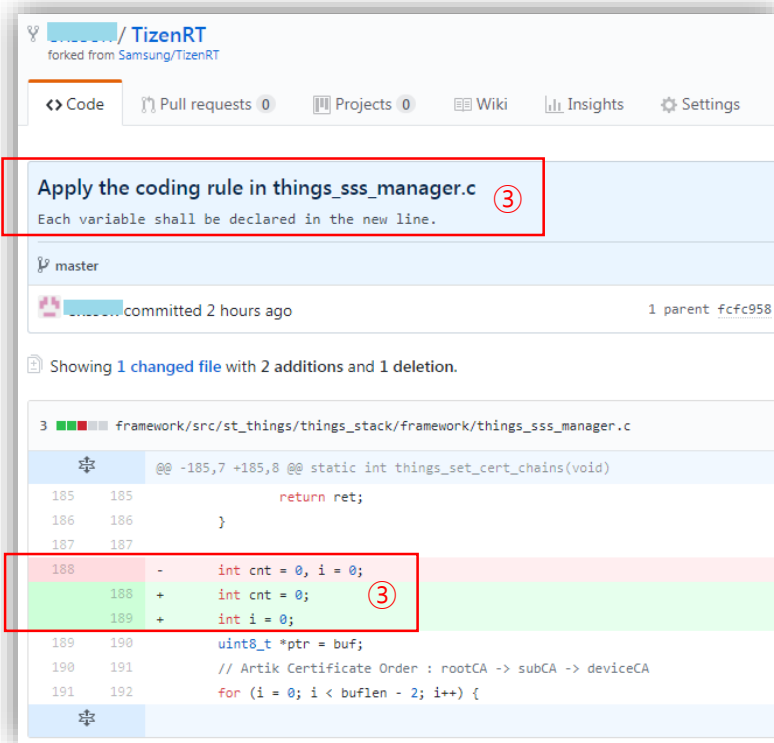


# III. TizenRT Contribution

## 6. Code Contribution 확인하기

### 1) Commit 내용 확인

- ① 웹브라우저로 "<본인 계정>/TizenRT" git repository 접속 → "1,234 commits" 메뉴 선택
- ② 본인이 Commit 한 것이 등록되어 있는지 확인
- ③ 본인의 commit 메시지 및 Code 수정 내용 확인

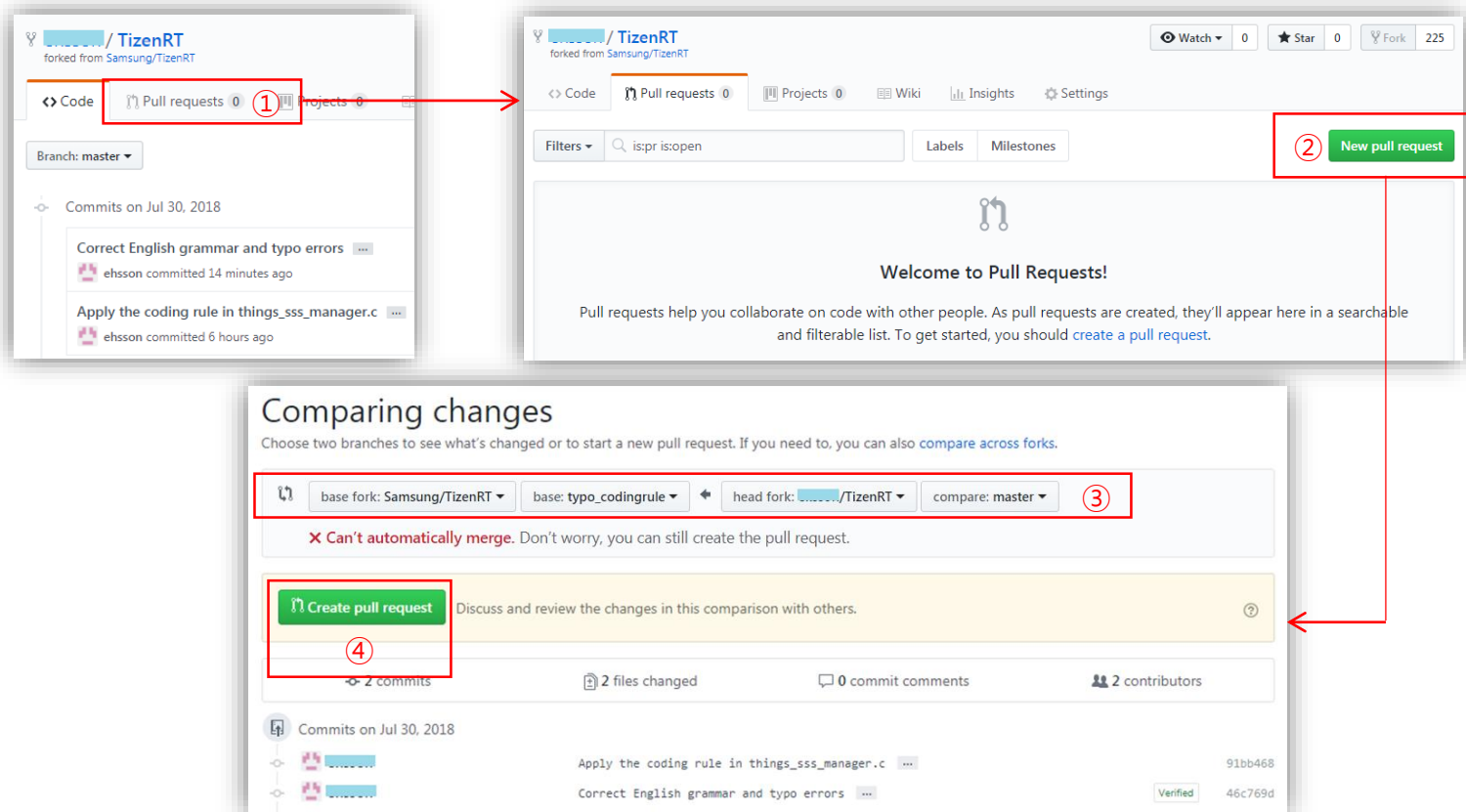


# III. TizenRT Contribution

## 7. “Samsung/TizenRT” Mainline에 Contribution 하기

### 1) TizenRT mainline 에 Commit 준비

- ① “TizenRT” 또는 “<>code” 메뉴 선택
  - ② “New pull request” 선택
  - ③ “base fork: Samsung/TizenRT ▼ base: **typo\_codingrule** ▼ ← head fork: <ID>/TizenRT ▼ compare: master ▼”
  - ④ “Create pull request” 선택
- ※ 오타 및 코딩 룰 수정은 반드시 “typo\_codingrule” 브랜치에 Pull requests

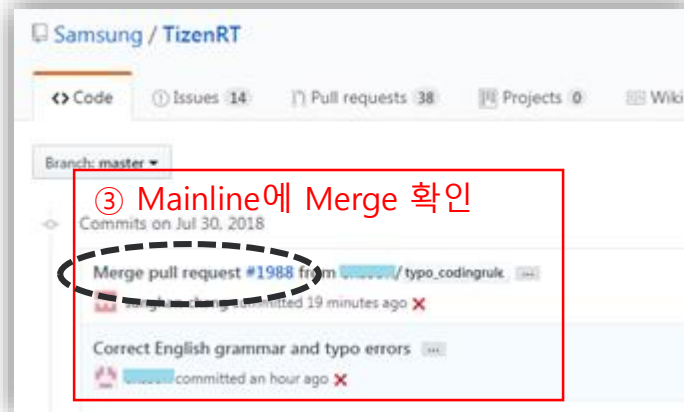
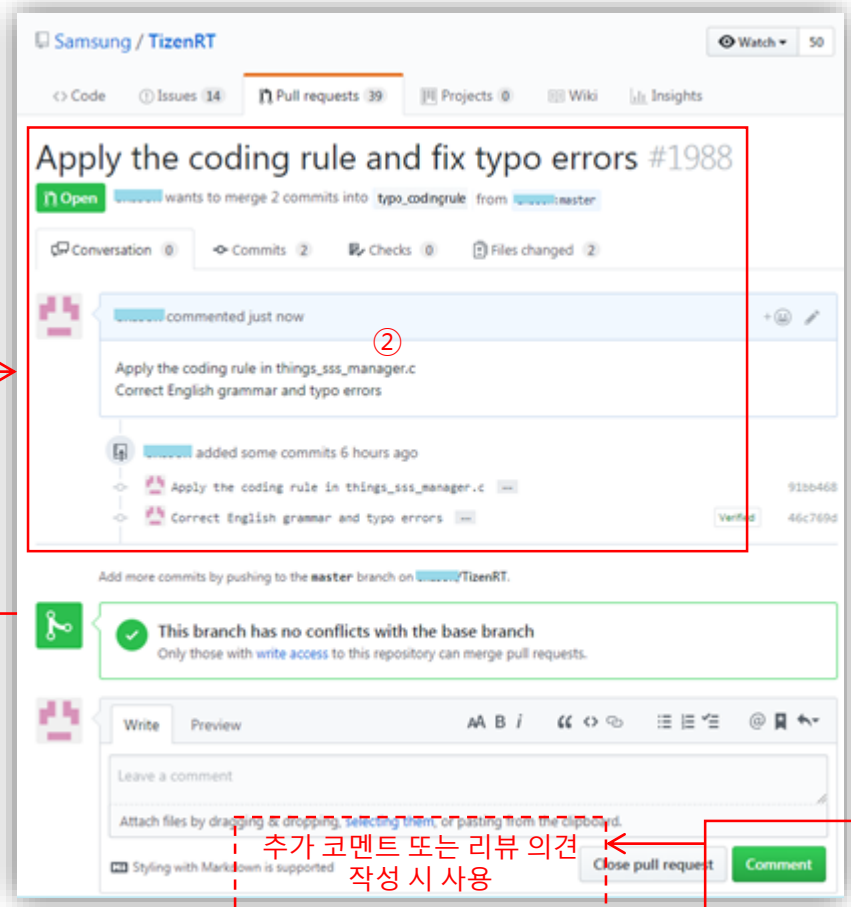
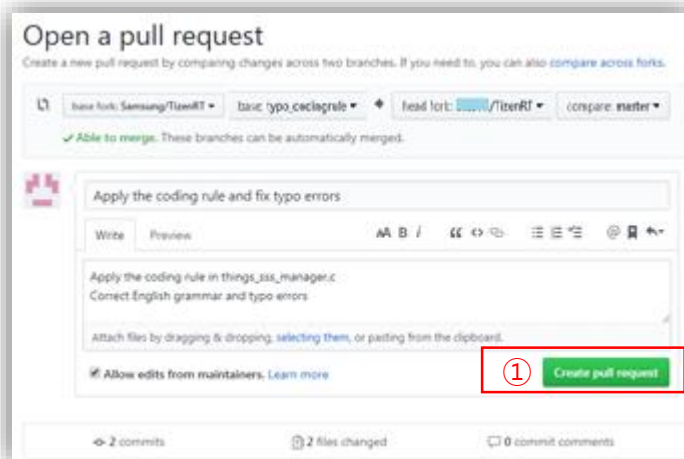


# III. TizenRT Contribution

## 7. “Samsung/TizenRT” Mainline에 Contribution 하기

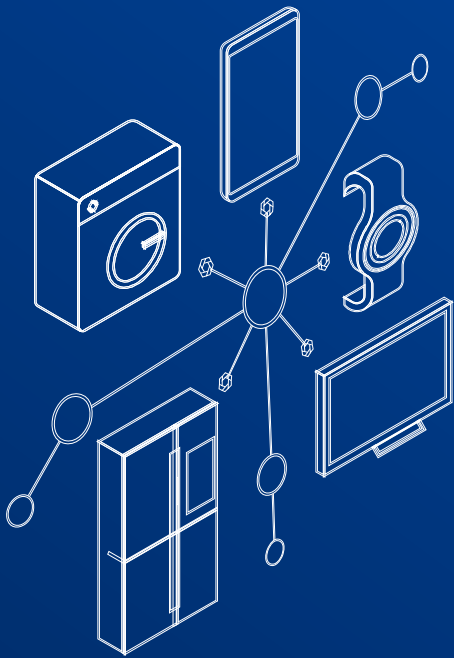
### 2) TizenRT mainline 에 Commit → Merge

- ① “TizenRT” 또는 “<>code” 메뉴 선택
- ② Commit 내용 확인 : <Samsung/TizenRT> Pull requests
- ③ Mainline에 Merge 기다리기 : “commit” 메뉴에서 등록 확인(메인테이너 리뷰 의견이 있을 경우 재수정 할 것)



## IV. 참고 사항

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1. Coding Style Guide
2. Commit Message Guide

# I . Tizen coding style(rule) guide

□ 사이트 : [https://wiki.tizen.org/Native\\_Platform\\_Coding\\_Idiom\\_and\\_Style\\_Guide](https://wiki.tizen.org/Native_Platform_Coding_Idiom_and_Style_Guide)

## [1. Overview](#)

## [2. C Coding Style](#)

### [2.1 Comment](#)

### [2.2 Tips](#)

### [2.3 Indentation](#)

### [2.4 Space](#)

### [2.5 Brace](#)

### [2.6 Line](#)

### [2.7 File organization](#)

### [2.8 Declaration/Definition](#)

### [2.9 Naming](#)

## [3 C++ Coding Style](#)

### [3.1 Define Guard](#)

### [3.2 Naming](#)

#### [3.2.1 File Name](#)

#### [3.2.2 Namespace name](#)

#### [3.2.3 Type name](#)

#### [3.2.4 Variable name](#)

#### [3.2.5 Function name](#)

#### [3.2.6 Member variable name](#)

#### [3.2.7 Constant name](#)

### [3.3 Indentation](#)

### [3.4 Space](#)

### [3.5 Line](#)

### [3.6 Brace](#)

## [3.7 Ordering](#)

### [3.7.1 Function parameter](#)

### [3.7.2 Include](#)

### [3.7.3 Declaration](#)

## [3.8 Class](#)

### [3.8.1 Constructor](#)

### [3.8.2 Reference arguments](#)

### [3.8.3 Explicit](#)

### [3.8.4 Interface class](#)

### [3.8.5 Inheritance](#)

### [3.8.6 Template class](#)

### [3.8.7 Exception](#)

### [3.8.8 Stream class](#)

## [3.9 Reliability](#)

※ **[Mxx]** : Mandatory, **[Rxx]** : Recommend

※ Tizen 프로젝트이지만 외부에서 가져온 오픈소스 프로젝트는 “Coding style(rule) guide”를 적용하지 않음

※ TizenRT 프로젝트에서는 Coding style(rule) 중에서 R04 는 적용하지 않음

- if, for, while 에서 한 줄(one branch)만 있을 경우에도 “{ }” 를 사용할 것

## II. Commit message guide

□ 사이트 : <https://github.com/Samsung/TizenRT/wiki/Documentations>

Branch for handling typographical errors & coding rule violations

Please use **typo\_codingrule** branch to fix typographical errors and to fix coding rule violations. Commits of that branch will be squashed and be merged into master periodically.

### 1. Don't use past tense on commit title.

arch/s5j: added i2s peripheral to support audio (X)

arch/s5j: add i2s peripheral to support audio (O)

### 2. Please fill where (folder location) and what you modify on commit title.

If your changes includes several different folders, please specify with commas.

But if it includes different changes or it can be splited by another topic, split them as different commits.

arch/s5j: add i2s peripheral to support audio (O)

add i2s peripheral to support audio in arch/s5j (O)

arch, build: change blah blah (O)

add i2s peripheral to support audio (X)

### 3. Please keep short title length.

It makes `git log --oneline` beautiful (easy to see).

framework/st\_things : Remove the logic that managed the device with... (X)

framework/st\_things : Remove the device management which uses hash (O)

## II. Commit message guide

□ 사이트 : <https://github.com/Samsung/TizenRT/wiki/Documentations>

4. Please add an empty line at second line of commit message to distinguish title and description.

**This is good to oneline command as well.**

arch/s5j: add i2s peripheral to support audio

Description starts here. 2nd line is empty.

5. Please fill commit description what you do in detail.

6. Don't mix different kinds of changes like formater and code logic change.

7. To modify your commit which is in pull request, amend original one.

**Don't make a new commit to do it.**

arch/s5j: add i2s peripheral to support audio <- 1st commit

arch/s5j: fix i2s <- 2nd commit (X)

8. After making pull request, Don't update yours using git pull.

**Please use git rebase instead of pull.**

**pull makes unnecessary commit like Merge branch 'master' into .**

**That redundant commit is not helpful to developer and maintainer.**



**Thank you**