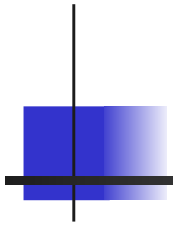

Using Github

What Github Does

- Online project hosting site.
- "Remote" git repository with access control
- Issue Tracking
- Project Boards
- Documentation and web pages (github.io)
- Integrates with other services
  - Continuous Integration, e.g. CircleCI

What to do

1. Create a Github Account if you don't have one
   - Put your REAL NAME in your profile
   - Add a PHOTO that clearly shows your face
   - Write a short profile about yourself

   Sign-up form:
   `https://forms.gle/9PW1L9Hsmx6ygHR9A`
2. Receive an e-mail invitation to join ISP19
   ** Verify invite & link is really from **`github.com`**
3. Use the link to join ISP19 Github Organization.

Github Profiles

Example of SKE student profiles.

1. Real name
2. Photo
3. (Optional) Email
4. Description of you

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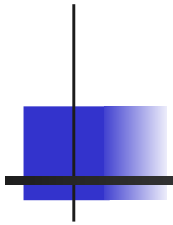


How to Use Github

2 Situations + 1 Special Case

Case 1: *You already have project code on your local computer. You want to copy to Github.*

Case 2: *Project already exists on Github. You want to copy it to your computer.*

Special Case:

Case 3: *A new project (no files yet).*

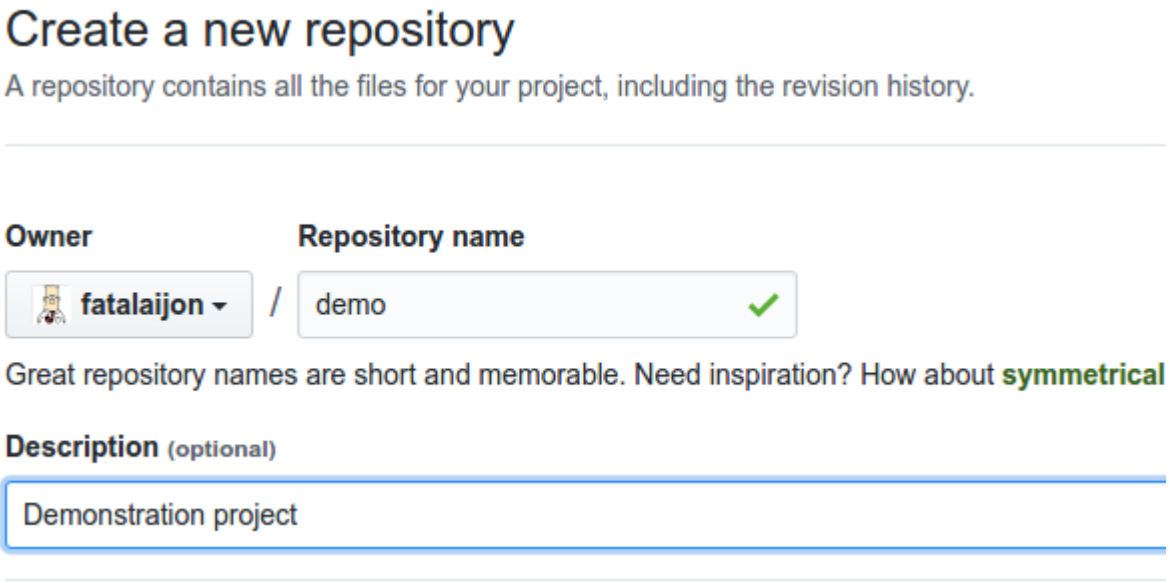
Case 1: Starting from Local Project

You already have a project on your computer

1. Create a local "git" repository.

```
cmd> git init
cmd> git add .gitignore README.md
cmd> git commit -m "initial code checkin"
```

2. Create an empty repo on Github.



Case 1: adding Github as remote

3. Copy the URL of new Github repository (https or ssh).

4. In your local project directory, add Github as a remote repository named "origin":

```
cmd> git remote add origin
     https://github.com/fatalaijon/demo.git
```

5. Push (copy) the local repository to Github

```
cmd> git push -u origin master
```

You only need **"-u origin master"** the **first time** you push to Github. Next time, just type "**`git push`**".

Case 2: Starting from Github

A project already exists on Github.
You want to "clone" it your local computer & do work.

1. Get the Github project URL
   `https://github.com/fatalaijon/demo.git`

or: go to project on Github and click on 

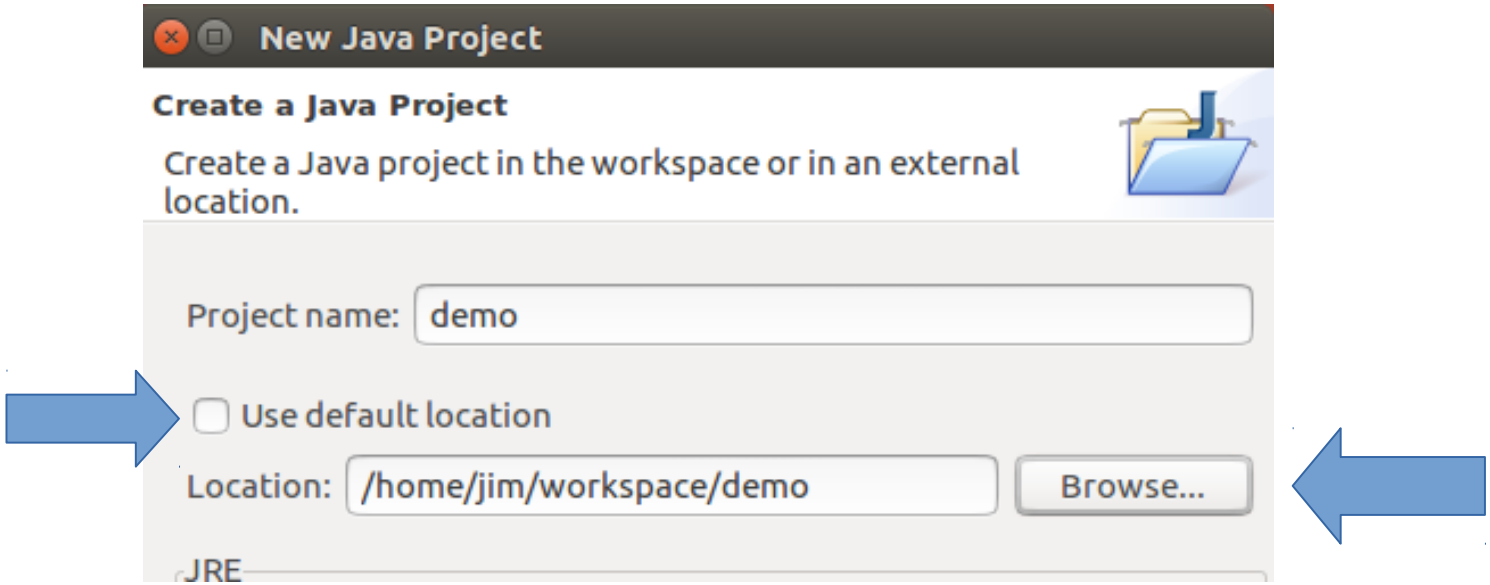
and copy the URL.

2. In your workspace, type:
   `cmd>` **`git clone https://github.com/...`**

NOTE: "git clone" creates a new directory (named demo) inside your current directory. If the directory already exists, clone won't work.

Case 2: Create an IDE project

3. Start your IDE and create a new project using the code in the directory you just cloned.



That's it!

Github is automatically the remote "`origin`".

Just "**`git push`**" your commited work to github.

You can use a different project name

The name of your local directory (cloned from Github) can be different from the Github repository name.

1) Rename the directory yourself.

= or =

2) Specify directory name when you "**clone**":

```
# Clone "demo" into local directory "mydemo"

cmd> git clone https://github.com/fatalaijon/demo.git   mydemo
```

Syntax: git clone *remote_url local_repo_name*

Comparison of 2 Cases

Git Workflow

After you have a repository + Github, what do you do?

*Git workflow for an **individual** project:*

1) Check status of your working copy:

```
cmd> git status
```

2) Commit changes or update your working copy.

"`git commit ...`"

3) Do some work:

Code, test. Code, test. ... Review.

Now what?

Git Workflow (cont'd)

4) Check status again:

```
cmd> git status
Changes not staged for commit:
    modified: src/Problem2.java
Untracked files:
    src/Problem3.java
```

5) Add and commit your work to the local repository

```
cmd> git add src/Problem2.java src/Problem3.java
cmd> git commit -m "Solved problems 2 and 3"
[master 29abae0] Solved problem 2 and 3
2 files changed, 44 insertions(+), 5 deletions
```

Git Workflow (with Github)

6) Push the changes to Github

```
cmd> git push
Compressing objects: 100% (12/12), done.
Writing objects: 100% (12/12), 3.60 KiB,
done.
Total 12 (delta 9), reused 0 (delta 0)
remote: Resolving deltas: 100% (9/9), ...
To https://github.com/fatailaijon/demo.git
 468abdf..29abae0  master -> master
```

That's it!

Repeat the cycle (1 - 6) as you work.

Github Workflow for Team Projects

On a **team project**, other people will commit files to the **same** Github repository!

You should update your local repository from Github before trying to "push" your work to Github.

Use "Github Flow" as workflow in team projects:

1. Work on a development branch, not master.

2. When your branch code is working and tested, submit a "pull request" for others to check/approve you changes.

3. Fetch master branch and merge -- then push to github.

Assignment

To Be Added