CSCI4140
Open-Source Software Project Development

Tutorial 1

OpenShift

Outline

- git

- Introduction to OpenShift

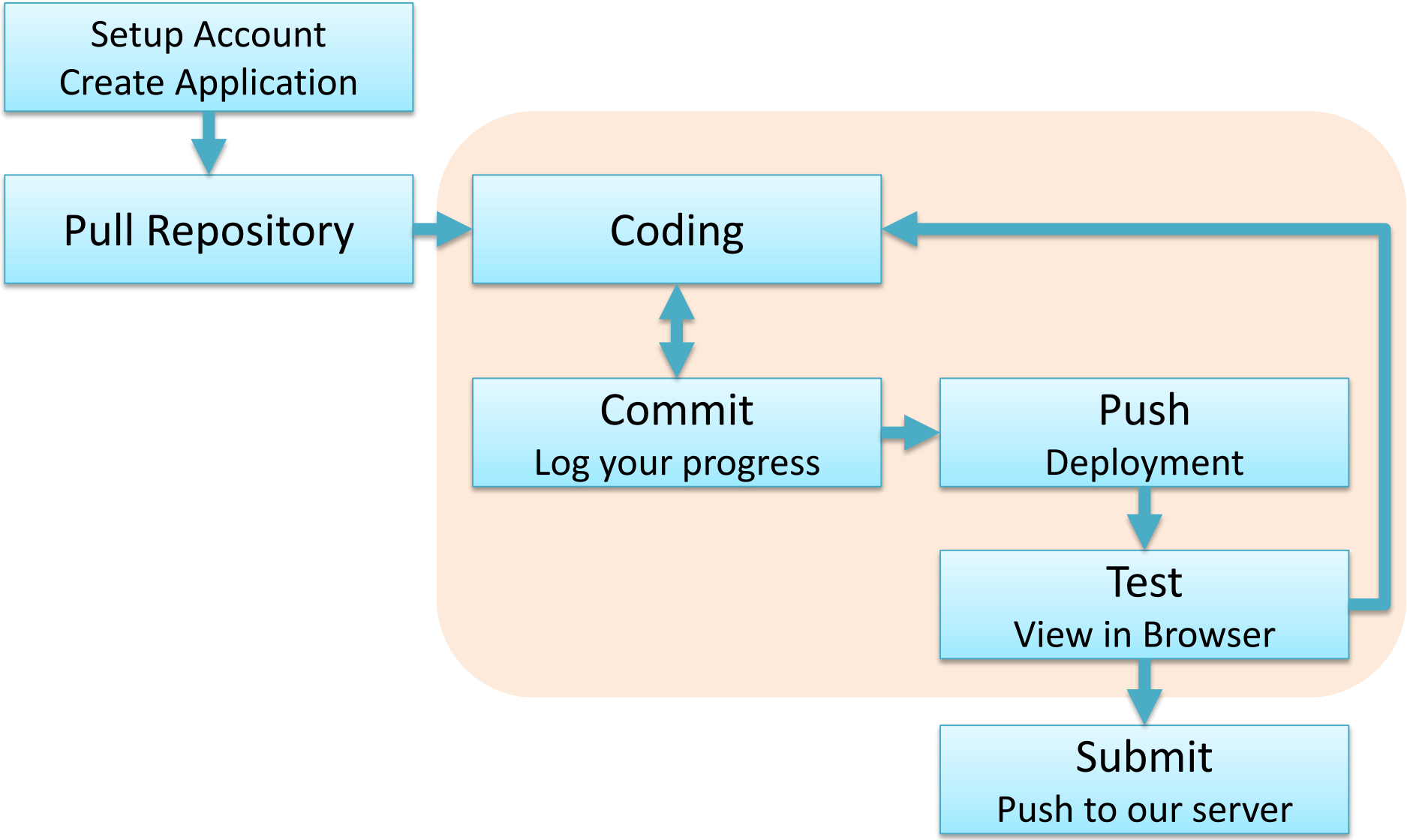
Redhat OpenShift

- RedHat Cloud Service
  - https://www.openshift.com/
  - Platform as a Service (PaaS)

- Free
  - Up to 3 applications

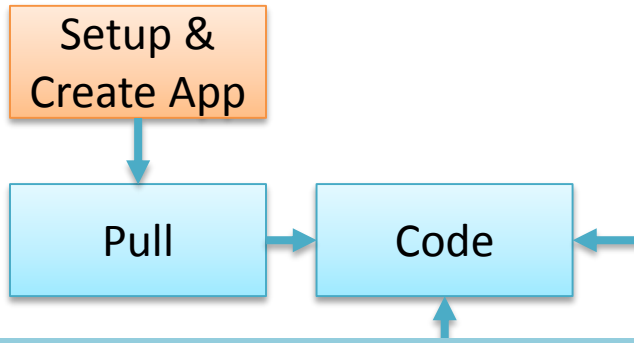
- Setup web ‘server’ easily
  - Support perl, PHP, node.js, ruby etc.
  - One click to setup database

Develop using OpenShift



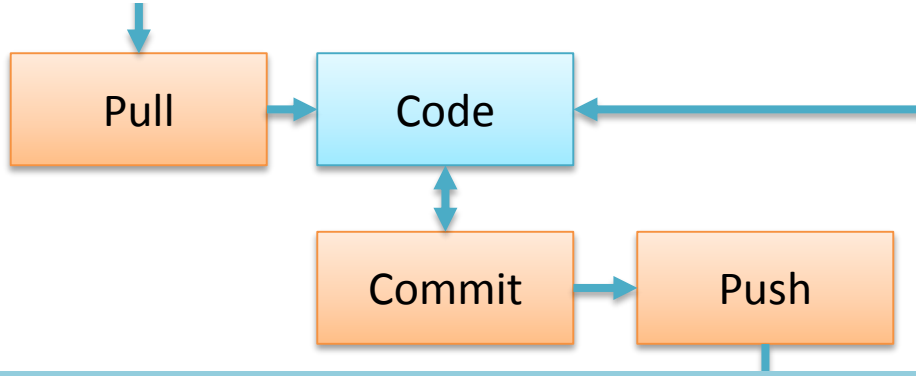
OpenShift – Setup

- Add SSH *public* key to OpenShift profile
  - Use *private* key as personal identity *(instead of password)*
  - Generate SSH key pair using `ssh-keygen` or PuTTYgen
- Create application
- Add Cartridges
  - Perl
  - MySQL
  - phpMyAdmin (recommended)



OpenShift – Repository

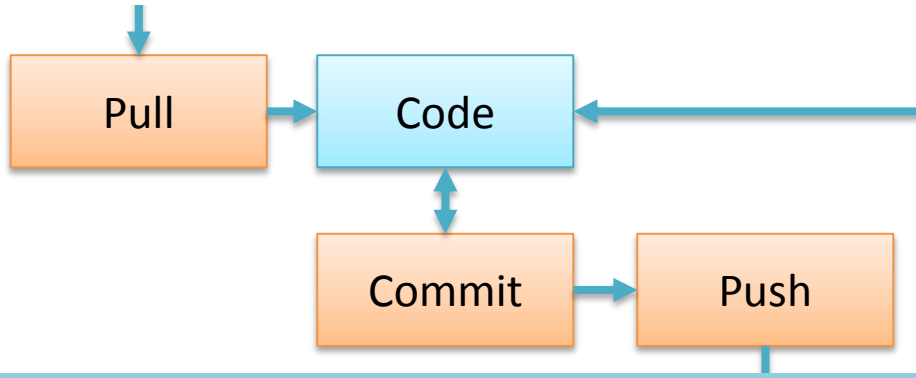
- Repository is on OpenShift server
- Use `git` to push / pull code
- Scripts will run on server when you push your code
  - Restart the apache process
  - **Flush** all your local changes
  - …



OpenShift – Accessing Repository

- Command line `git`
  - Available on Linux, Mac
    - Install Cygwin for Windows
  - Available on department machines (`linux*`)
    - Use `socksify` when connecting to OpenShift server

- GUI clients
  - Example: SourceTree (Windows, Mac)
  - Many other alternatives …



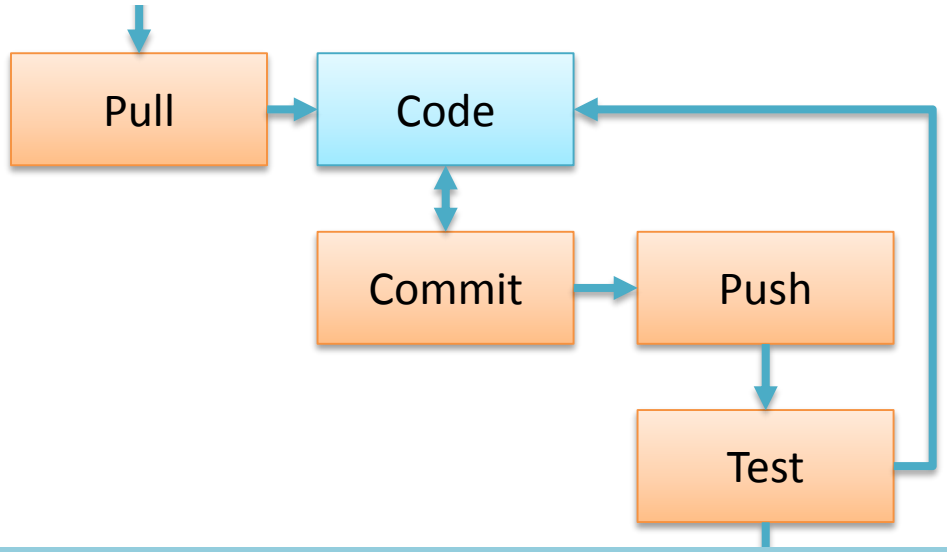
OpenShift – Demo

- `ssh-config`
  - Alias of hostname and username
  - Specifying private key

- Connect to repository on OpenShift using `git`

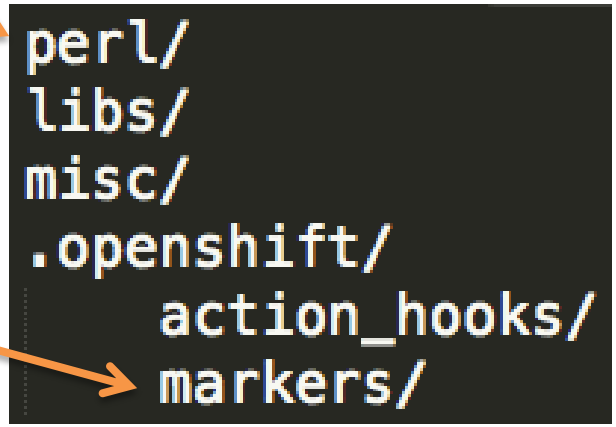
- Initialize local repository using `git clone`

- Push and Deploy code



OpenShift – Repository

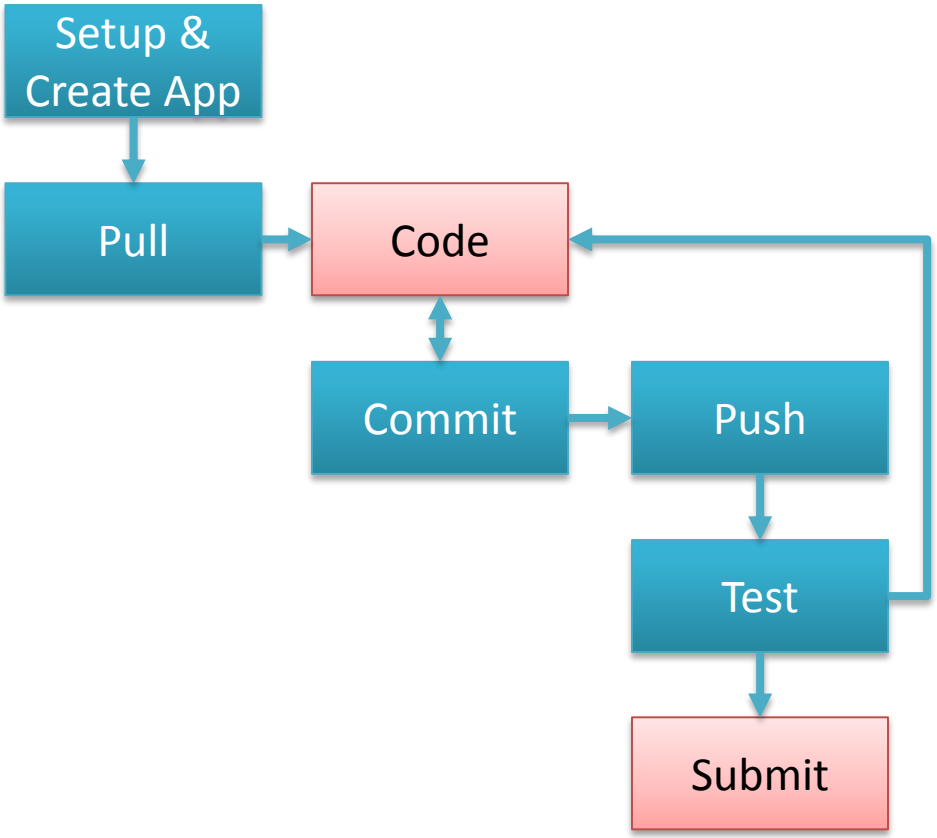
- Structure of **repository**
  - Public directory placing your perl (and HTML) code
    - No need `cgi-bin/`
  - Some flags (markers)
    - `touch (marker)`



See: http://openshift.github.io/documentation/oo_cartridge_guide.html#perl

Towards Assignment 1 …

- OpenShift is required for assignment 1
  - Specification release on next Monday (20 Jan)
- Coming tutorials
  - HTML
  - Perl
    - CGI & DBI module
  - Debug
  - Submission guideline



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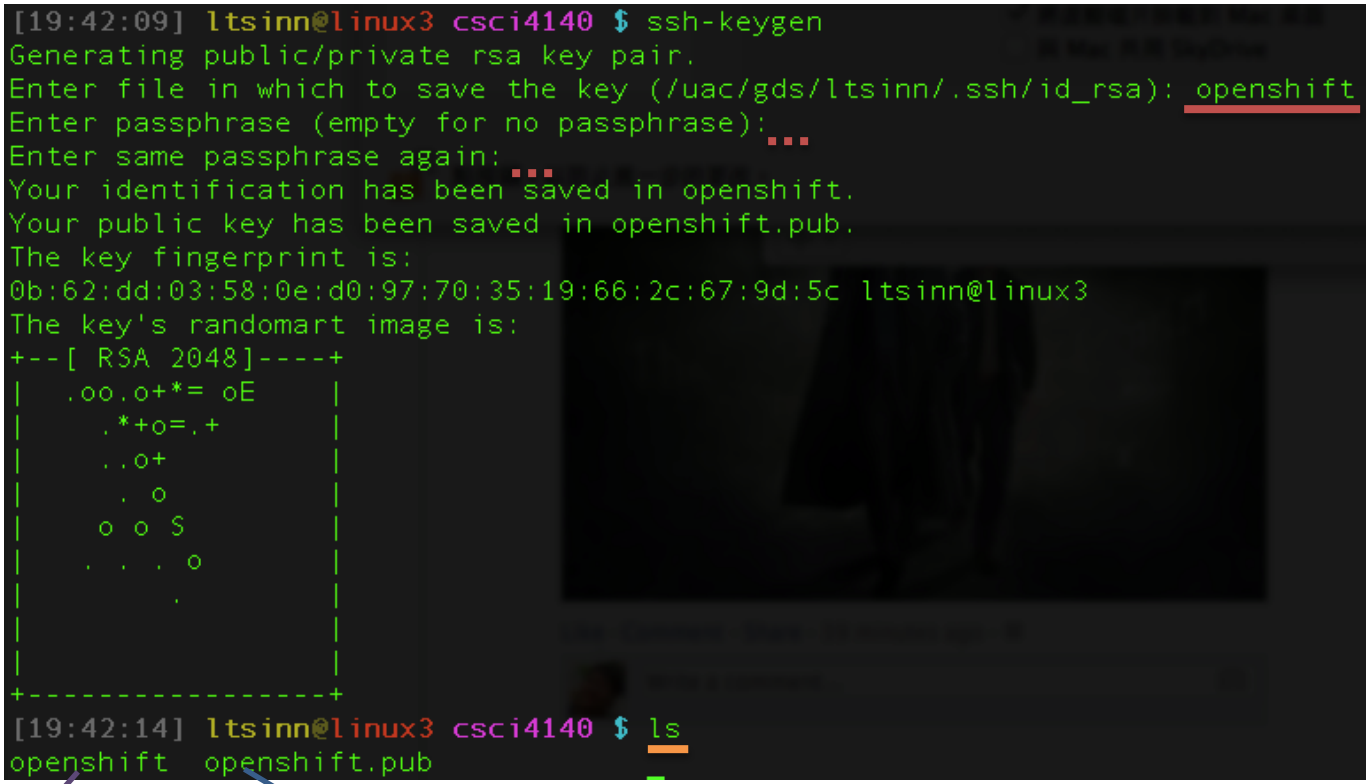
Contact: Jimmy, Sinn Lok Tsun (Office: SHB115)

Facebook Group:
www.facebook.com/groups/1423846061185879/

APPENDIX

Generate SSH Key pair

- Using `ssh-keygen`
  - Available in department `linux*` and linux / mac machine

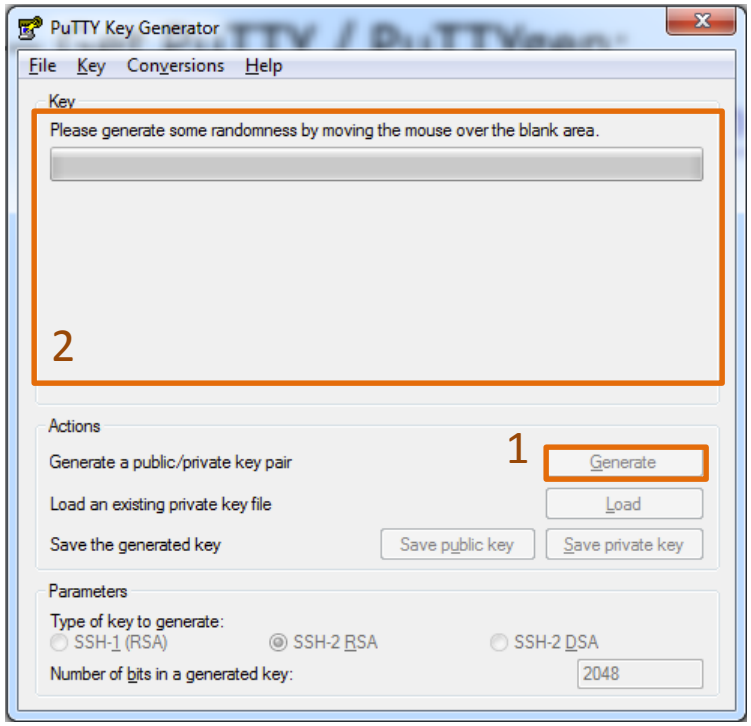


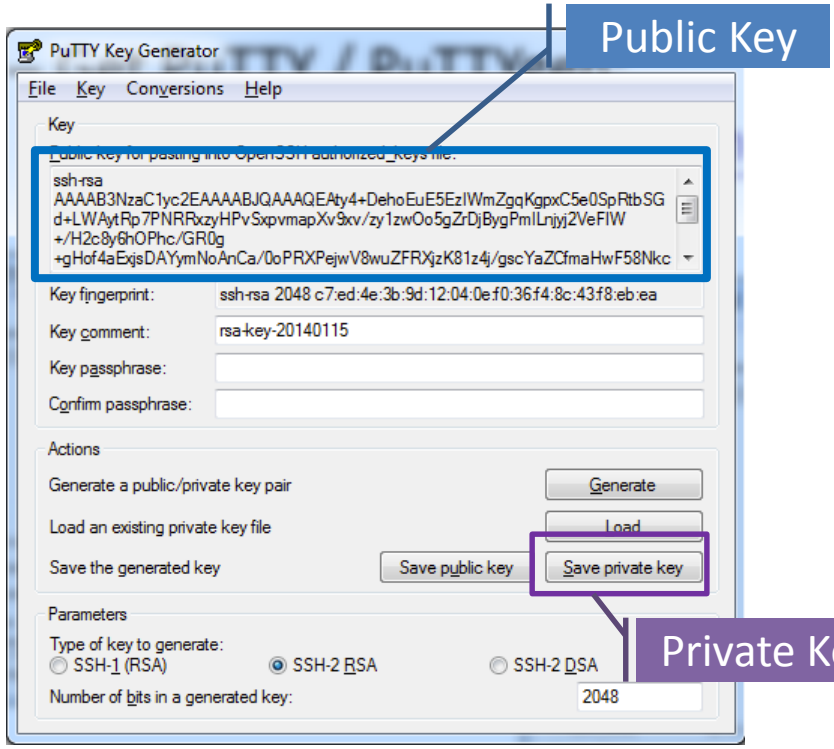
Private Key

Public Key

Generate SSH Key Pair

- Using PuTTYgen
  - Get PuTTY / PuTTYgen: http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html





SSH Config

- Alias to servers / hosts
  - Handy to connect to OpenShift server
- Edit the file `~/.ssh/config`

```
git ssh://52c84c3f4382ec4f030002b0@
asg1-csci4140ltsinn.rhcloud.com/
~/git/asg1.git/
```

```
Host openshift-demo1
     hostname asg1-csci4140ltsinn.rhcloud.com
     user 52c7fe41500446534c0000ac
     identityfile ~/csci4140/openshift
```

Private key file

- Access by `ssh <host>`
  - Copy file: `scp <host>:path .`
- More options may suit for your other use

Using appsrv

- For quick testing and modifications only
  - You still need to test your assignment on OpenShift

- Place your files under `~/www/`
  - Put scripts into `~/www/cgi-bin/`
  - Change permission of files and directories (`chmod`)
    - **Files**: 644
    - **Directories:** 711
      - Remember the directory `www` as well
    - **Scripts**: 700

- Access by following link (e.g. `test.cgi`)
  - http://appsrv.cse.cuhk.edu.hk/~tmchan1/cgi-bin/test.cgi

More detail: https://wiki.cse.cuhk.edu.hk/tech/userguide/web/cgi

BONUS: XAMPP

Building your own web server

Installing packages for web server

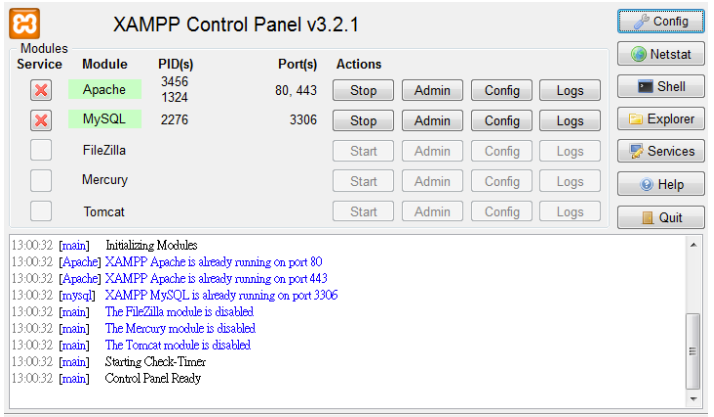
- Typical web server use apache

- Just installing apache is not enough
  - mod_perl (for assignment 1)
  - php (for assignment 2)
  - mysql
  - phpMyAdmin

- Settings of these package is troublesome
  - E.g. User group and permission

XAMPP

- Link: http://www.apachefriends.org/
  - Include Perl, PHP, MySQL, phpMyAdmin
  - Available on Windows, Linux and Mac
  - Just run the installer
  - GUI control panel is provided



- Access via browser:
  http://127.0.0.1 or http://localhost
  - You can use VM and access using VM local IP address

More detail: http://www.apachefriends.org/en/faq-xampp.html