Git Manual for CMPSC 473 Projects

1 Git

Git is a version control system for tracking changes in computer files and coordinating work on these files among multiple users. It is primarily used for source code management in software development, but it can be used to keep track of changes in any set of files. As a distributed revision control system it is aimed at speed, data integrity, and support for distributed, non-linear work-flows [1].

2 Signing Up

To use GitHub you need first to create an account on GitHub. To do that go to `https://github.com` and click on Sign Up button and proceed the register form.
Choose a proper username and remember your login credentials.

3 Adding SSH key

In order to authenticate your Git user while cloning the repository you need to add your public SSH key to your git account. To do so, follow below steps:

1. Create a SSH key by running this command:

   ```
   $ ssh-keygen -t rsa -b 4096 -C "your@email.com"
   ```

2. Press Enter on any question to select default answer.

3. Your public SSH key will be created in $\$ \sim /.ssh/id\_rsa.pub$. Copy it's content.

4. Go to your GitHub account, go to settings, in left-side menu select SSH key, and paste your public Key there.

4 Cloning The Assignment

Once the project is released, you will receive an invitation link to join a private repository corresponding to it. By accepting the invitation, you will have access to your private repository containing the starter files which we are providing you (it has some executables, some source codes, manuals, scripts, etc., for the project). To see the repository, in profile, under Organization section, click on the organization you have, the repository is inside the organization. Follow these steps:

1. If you want to clone the repository on a department machine, connect to a machine with SSH and enter this command:

   ```
   $ git clone git@github.com:PSU473/px-<yourGitHubUsername>.git
   ```

   where x is the project number(starting from 0)

2. If you want to clone the repository on your own machine, open a terminal and enter this command:

   ```
   $ git clone https://github.com/PSUC473/px-<yourGitHubUsername>.git
   ```

   where x is the project number(starting from 0)

This command will download the repository to your corrent working directory.

5 Working with the Repo

Any change or add to your (local) repository files must be committed to the remote version of repository on GitHub. To see whether your local repository is up to date or not, enter these commands:

```
$ cd <downloaded repo.>
$ git status
```

The output of latter command tells you the status of your local repo.

6 Pushing Changes

If you change an existing file or add a new file to your local repo, you must commit the changes and then push them to the remote repo. Follow the steps below for this:
First add files that have been created or have been changed:

```
$ git add <list of file names separated by space>
```

Commit the changes with a message about that change:

```
$ git commit -m "your proper commit message"
```

Finally push the changes to remote repo:

```
$ git push origin master
```

7 Useful Materials

If you need to know more about git, there are many awesome references that you can find online. [3] is a quick place to start. [4] is an interactive game for learning git, try it! You can also find more references in [2].

8 Important Note

Do not push your project in just one shot! You must commit and push **any** change you make on files to the git repo with a proper message!

References

[1] *https://en.wikipedia.org/wiki/Git.*

[2] *https://gist.github.com/jaseemabid/1321592.*

[3] *https://rogerdudler.github.io/git-guide/.*

[4] *https://try.github.io/levels/1/challenges/1.*