EEB603_GitTutorial

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Part One: Introduction and Installation

1. Introduction: Why Git and GitHub?

What's the difference between Git and GitHub.

Version controll is important for. . .

Git is a **version control system** that is like a supped up version of the "Track Changes" feature within Microsoft Word. Git allows the different collaborators on a project to track changes and revert to older versions if needed.

GitHub is a cloud based platform built around Git that stores code ***pushed*** to it from a computer that uses Git.

In this turtorial you will register for a GitHub account, install Git, connect RStudio to Git and learn how to track versions through branches, pulls, commits, pushes, fetches, and merges.

2. Register for a GitHub Account

If you do not currently have a GitHub account then you will register for one today! If you already have a GitHub account, sit back and relax while your classmates get set up.

1. Go to https://github.com
2. Pick a username that incorporates your actual name. Enter an email and create a password.
3. Select a plan: Free is all you will likely need.
4. (optional) Answer a few questions about your code skill level, plans for using GitHub, and lost some interests.
5. You'll get a verification email.
6. When you click the link from the Verification you will be taken to your new GitHub account with the option to create your first repository or *repo*. Do not make one yet. We will come back to that.

3. Upgrade R and RStudio

We all have R and RStudio on our own computers by now, but here you can check your version and upgrade if needed.

```
R.version.string
```

```
## [1] "R version 3.6.1 (2019-07-05)"
```

If you would like to update your current R packages you can use the following command:

4. Install Git

Open up the terminal or shell and check to see if you already git installed.

```
which git
git --version
```

```
## /usr/bin/git
## git version 2.20.1 (Apple Git-117)
```

4.1 Windows Installation

There are two options for Windows installation: **Option 1:** Install Git for Windows (https://gitforwindows. org), aka *msysgit* or "Git Bash", which will provide Git as well as a Bash shell.

*side note on shells/terminal/bash. Windows OS doesn't provide a shell terminal. Shell refers to an early (1970s) command-line interpreter for Unix shell. Bash (**B**ourne **a**gain **sh**ell) is the command-line interpreter for GNU (**g**nu **n**ot **u**nix) OS. It's all still very confusing, just know that bash is largely compatible with shell, and that for many Git commands the "Git Bash" shell/terminal will need to be used.*
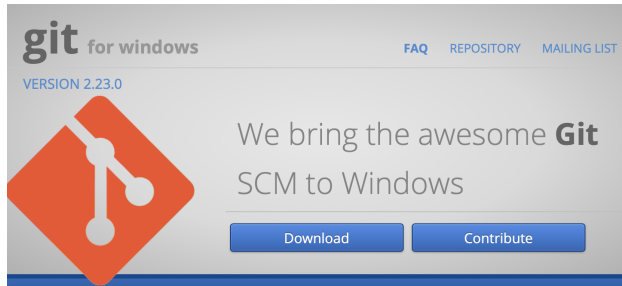
Pick the executable file that is best for your system. When asked about "Adjusting your PATH environment" select "Git from the command line and also from 3rd-part softwar." Accept other defaults.

RStudio for Windows prefers for Git to be installed in the C:/Program Files and will be the default. The Git executable will be located at C:/Program Files/Git/bin/git.exe. Use this convention unless you *really* do not want to.

Option 2: Install Git from the Chocolatey package manager (https://chocolatey.org). You'll need to have Chocolatey installed (https://chocolatey.org/install) which may be useful if you plan on installing other open source software down the road.
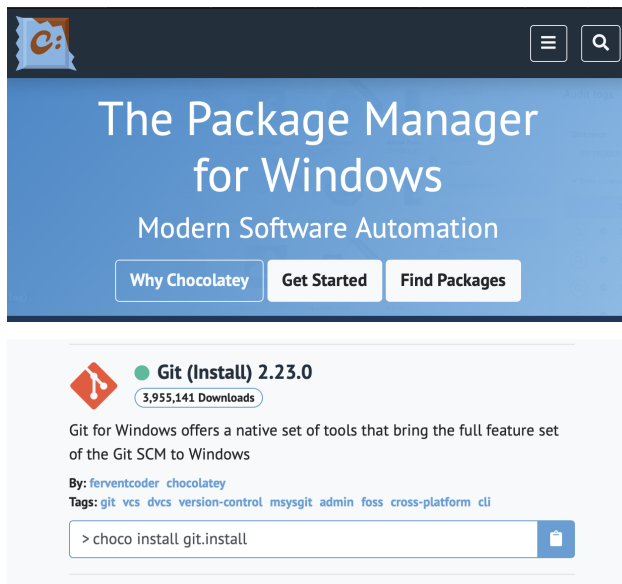
After Chocolately is installed, in a shell type:

```
choco install git.install
```

The most current version is Git 2.23.0.

4.2 macOS Installation

There are also several options for installing Git on a macOS. **Option 1:** In the shell/terminal with Xcode:

```
git --version
git config
```

This will prompt an offer to install. Accept the offer.

Or more directly:

```
xcode-select --install
```

Option 2: Download git from here http://git-scm.com/downloads

Option 3: Download using Homebrew

```
bew install git
```

5. Bonjour Git, enchante

6. Optional: Install a Git client

9. Connect to GitHub

###Make a repo

Here, we are just making sure we can push and pull and everyone is communicating.

1. Head to https://github.com/ and check that you're still logged in
2. Click on the green "New" button or click on "Repositories" on your profile page and then click on the "New" button.

3. Fill in:

Repository name

Description: something for the README file

Public (for now)

and then YES initilize the repo with a README

For everything else, select default.

4. Click "Create repository"
5. Copy the HTTP clone URL to your clipboard via green "Clone or Download" button