

Spring 2021, Big Data Analytics Lab # 1

Git Download

<https://git-scm.com/book/en/v2/Getting-Started-Installing-Git>

The screenshot shows the Git book's interface. At the top, the Git logo is followed by the tagline "--distributed-is-the-new-centralized". A search bar is in the top right. The left sidebar contains navigation links: "About", "Documentation" (with sub-links for "Reference", "Book", "Videos", and "External Links"), "Downloads", and "Community". Below these, it states "This book is available in [English](#)." and "Full translation available in [български език](#)," and [Español](#),". The main content area is titled "1.5 Getting Started - Installing Git" and is labeled "2nd Edition". The section "Installing Git" explains that before using Git, it must be installed on the computer, and provides instructions on how to do so. A "Note" box at the bottom states that the book was written using Git version 2.8.0 and that most commands should work in older versions, though some might differ slightly.

git --distributed-is-the-new-centralized

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Chapters ▾ 2nd Edition

1.5 Getting Started - Installing Git

Installing Git

Before you start using Git, you have to make it available on your computer. Even if it's already installed, it's probably a good idea to update to the latest version. You can either install it as a package or via another installer, or download the source code and compile it yourself.

Note

This book was written using Git version **2.8.0**. Though most of the commands we use should work even in ancient versions of Git, some of them might not or might act slightly differently if you're using an older version. Since Git is quite excellent at preserving backwards compatibility, any version after 2.8 should work just fine.

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For Mac Users:

Installing on macOS

There are several ways to install Git on a Mac. The easiest is probably to install the Xcode Command Line Tools. On Mavericks (10.9) or above you can do this simply by trying to run `git` from the Terminal the very first time.

```
$ git --version
```

If you don't have it installed already, it will prompt you to install it.

If you want a more up to date version, you can also install it via a binary installer. A macOS Git installer is maintained and available for download at the Git website, at <https://git-scm.com/download/mac>.

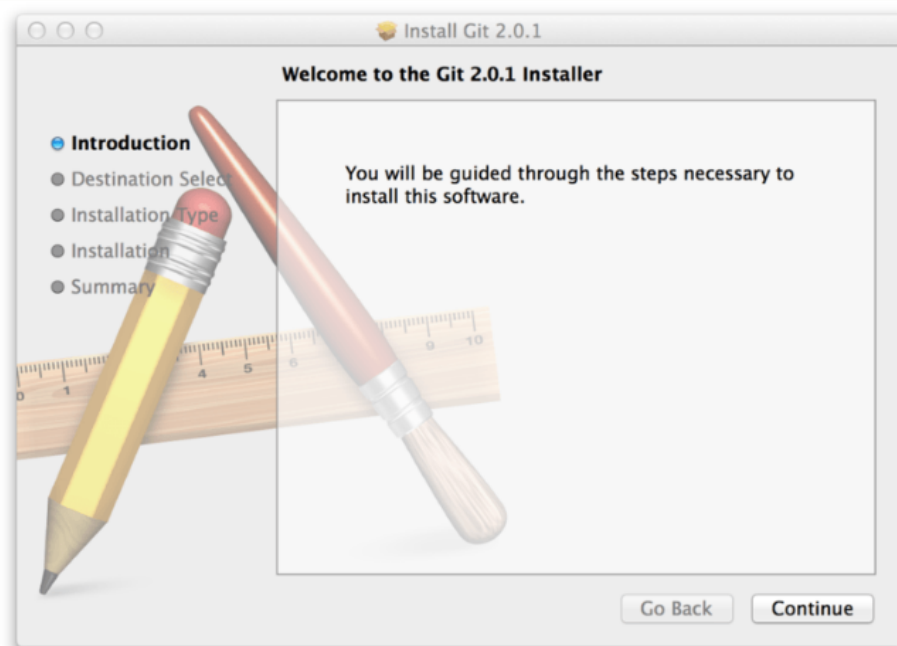


Figure 7. Git macOS Installer.

You can also install it as part of the GitHub for macOS install. Their GUI Git tool has an option to install command line tools as well. You can download that tool from the GitHub for macOS website, at <https://desktop.github.com>.

For Windows users:

Installing on Windows

There are also a few ways to install Git on Windows. The most official build is available for download on the Git website. Just go to <https://git-scm.com/download/win> and the download will start automatically. Note that this is a project called Git for Windows, which is separate from Git itself; for more information on it, go to <https://gitforwindows.org>.

To get an automated installation you can use the [Git Chocolatey package](#). Note that the Chocolatey package is community maintained.

Another easy way to get Git installed is by installing GitHub Desktop. The installer includes a command line version of Git as well as the GUI. It also works well with PowerShell, and sets up solid credential caching and sane CRLF settings. We'll learn more about those things a little later, but suffice it to say they're things you want. You can download this from the [GitHub Desktop website](#).

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Git Installation

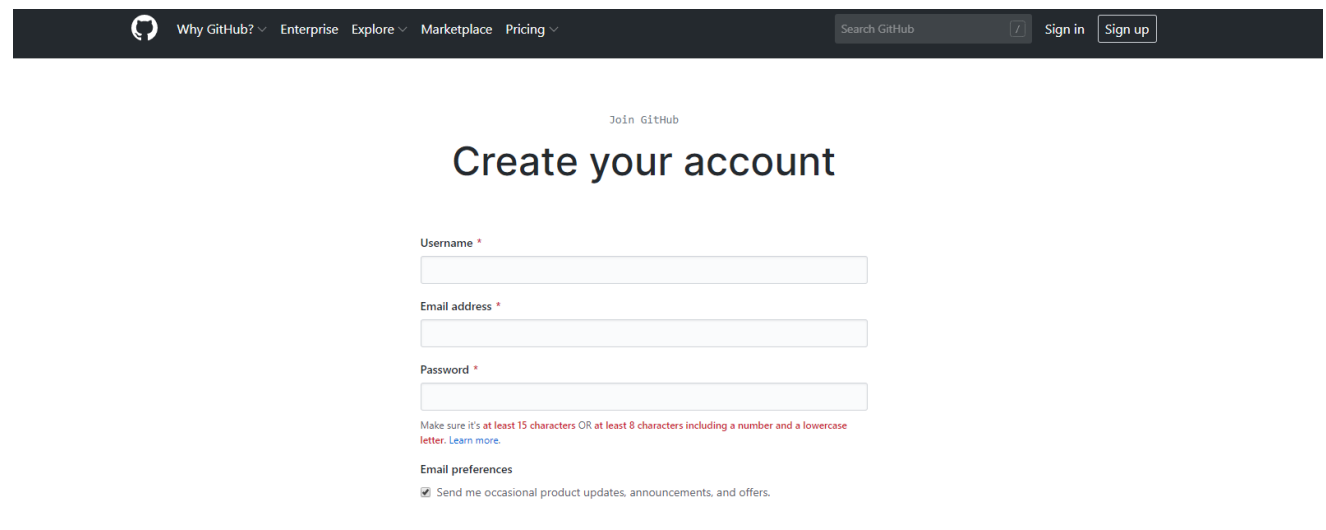
Just follow the default settings

GitHub

Once you've down with Git, create a Free GitHub account at this link:

<https://github.com/join>

Then, you will be navigated to this webpage:



The screenshot shows the GitHub 'Create your account' page. At the top is a dark navigation bar with the GitHub logo, links for 'Why GitHub?', 'Enterprise', 'Explore', 'Marketplace', and 'Pricing', a search bar, and 'Sign in' and 'Sign up' buttons. Below the navigation bar, the text 'Join GitHub' is centered above the main heading 'Create your account'. The form contains three input fields: 'Username *', 'Email address *', and 'Password *'. Below the password field is a note: 'Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. Learn more.' At the bottom, there is an 'Email preferences' section with a checked checkbox and the text 'Send me occasional product updates, announcements, and offers.'

Git Tutorial

Step 1: Create a local git repository

When creating a new project on your local machine using git, you'll first create a new repository.

To begin, check the default working directory using the `pwd` command. Move to where you want to place the project on your local machine using the `cd` command.

To initialize a git repository in the root of the folder, run the `git init` command.

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```
ypaph@DESKTOP-4J0KKUO MINGW64 ~  
$ mkdir BYGB7990  
  
ypaph@DESKTOP-4J0KKUO MINGW64 ~  
$ cd BYGB7990/  
  
ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990  
$ |
```

```
ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990  
$ git init  
Initialized empty Git repository in C:/Users/ypaph/BYGB7990/.git/
```

Step 2: Registration

```
ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)  
$ git config --global user.email "zyang173@fordham.edu"  
  
ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)  
$ git config --global user.name "Zhihan"
```

Step 3: Add a new file to the repository

Go ahead and add a new file to the project using any text editor you like or just running a [touch](#) command.

However, you could always copy and paste folders or files directly to your git working directory.

Once you've added or modified files in a folder containing a git repo, git will notice that changes have been made inside the repo. Git won't officially keep track of the file (that is, put it in a commit - we'll talk more about commits next) unless you use the add command

Then, you can use [git status](#) command to check the status.

```

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   Group project/NBA_Player_Types-master.zip
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/.gitignore
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/.ipynb_checkpoints/step_1_data_acquisition-checkpoint.ipynb
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/.ipynb_checkpoints/step_2_machine_learning_lda-checkpoint.ipynb
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/.ipynb_checkpoints/step_3_eda-checkpoint.ipynb
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/.ipynb_checkpoints/step_4_lineups_data_cleaning-checkpoint.ipynb
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/README.md
    new file:   Group project/NBA_Player_Types-master/NBA_Player_Types-master/assets/BR_data_tables.png

```

Step 4: Create a commit

Use the `git commit -m "logging"` command to commit your previous changes. Notice here "logging" can be changed to whatever you want to input.

```

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)
$ git commit -m "BYGB7978 Group"
[master (root-commit) bfd872f] BYGB7978 Group
 62 files changed, 14501 insertions(+)
 create mode 100644 Group project/NBA_Player_Types-master.zip
 create mode 100644 Group project/NBA_Player_Types-master/NBA_Player_Types-master/.gitignore

```

Step 5: Create a new branch

Branches allow you to make a new feature but are worried about making changes to the main project to the main project while developing the feature. This is where [git branches](#) come in.

Branches allow developers to move back and forth between 'states' of a project. For instance, if you want to add a new page to website you can simply create a new branch without affecting the main part of the project. Once you're done with the page, you can then merge changes from your branch into the master branch.

To create a new branch, run `git checkout -b <branch name>`, and git creates a new branch and automatically switch to that new branch. You can also use `git branch <name>` to create a new branch.

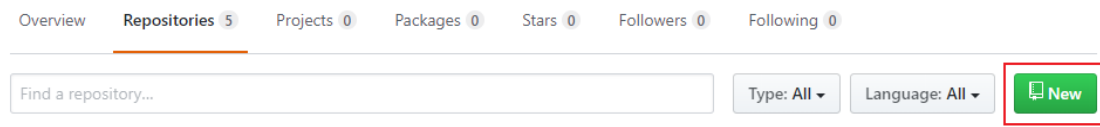
Step 6: Create a new repository on GitHub & Push a branch to GitHub

If you only want to keep track of your code locally, you don't need to use GitHub. But if you want to work with a team, you can use GitHub to collaboratively modify

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the project's code.

To create a new repo on GitHub, log in and go to the GitHub home page. You should see a green ‘New’ button:



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner:  ZhihanY / Repository name: ✓

Great repository names are short and memorable. Need inspiration? How about [refactored-succotash](#)?

Description (optional)

- ☒ **Public**
Anyone can see this repository. You choose who can commit.
- ☐ **Private**
You choose who can see and commit to this repository.

Skip this step if you're importing an existing repository.

- ☐ **Initialize this repository with a README**
This will let you immediately clone the repository to your computer.

Add .gitignore: **None** | Add a license: **None** ⓘ

After Setting up your repository, you will see a page like this:

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Quick setup — if you've done this kind of thing before

Set up in Desktop

 or

HTTPS

SSH

https://github.com/ZhihanY/BYGB7990.git

Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

...or create a new repository on the command line

```
echo "# BYGB7990" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/ZhihanY/BYGB7990.git
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/ZhihanY/BYGB7990.git
git push -u origin master
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Import code

ProTip! Use the URL for this page when adding GitHub as a remote.

Then, type the commands shown in the middle section of the previous picture (Yours are different from mine):

```
ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)
$ git remote add origin https://github.com/ZhihanY/BYGB7990.git


ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)
$ git push -u origin master
```

The reason why there is a -u command in the second row is that your remote repository is now empty. Next time, when you upload documents you won't need to use that so the command will be:

`$ git push origin master`


It will pop out a GitHub login window, enter your registered email address and password to sign in.


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 GitHub Login

×

GitHub Login

 Login

 Cancel

Don't have an account? [Sign up](#)

[Forgot your password?](#)

Ultimately, you will see something like this:

ZhihanY / BYGB7990

Unwatch

1

Star

0

Fork

0

Code

Issues 0

Pull requests 0

Actions

Projects 0

Wiki

Security

Insights

Settings

No description, website, or topics provided.

Edit

Manage topics

1 commit

1 branch

0 packages

0 releases

0 contributors

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download

Zhihan BYGB7978 Group

Latest commit bFd872f 1 hour ago

Group project

BYGB7978 Group

1 hour ago

Help people interested in this repository understand your project by adding a README.

Add a README

Step 7: Write a README file

Open source community is growing rapidly. Developers release new open source projects on GitHub every day. As a result, it's becoming more and more difficult to get your own project and stand out from the community. However, you can do a few things to increase your chances of grabbing other developer's attention. One effective and

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simple technique is putting up a nice-looking and helpful README file.

Good README should include enough details to help a new user get started, e.g. how to compile, how to install, and how to starting integrating.

Lastly, after learning about the writing fundamentals of README, let's dive into the styling of README which also called formatting.

Formatting is an essential part of README. You can learn about how to format your README from [here](#) and [here](#).

README Templates:

<https://gist.github.com/fvcproductions/1bfc2d4aecb01a834b46>

<https://github.com/dbader/readme-template>

Step 8: Create a pull request

A pull request is a way to alert a repo's owner that you want to make some changes to their code. It allows them to review and make sure it looks good before putting your changes to the master branch.

Let's make a new local branch and then create a readme file:



```
MINGW64:/c/Users/ypaph/BYGB7990
fatal: not a git repository (or any of the parent directories): .git

ypaph@DESKTOP-4J0KKUO MINGW64 ~
$ pwd
/c/Users/ypaph

ypaph@DESKTOP-4J0KKUO MINGW64 ~
$ cd BYGB7990

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)
$ git branch scratch

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (master)
$ git switch scratch
Switched to branch 'scratch'

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (scratch)
$ touch readme.txt

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (scratch)
$ vim readme.txt

ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (scratch)
$ |
```

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Push the new branch to GitHub:

```
ypaph@DESKTOP-4J0KKUO MINGW64 ~/BYGB7990 (scratch)
$ git push origin scratch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 297 bytes | 99.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'scratch' on GitHub by visiting:
remote:   https://github.com/ZhihanY/BYGB7990/pull/new/scratch
remote:
To https://github.com/ZhihanY/BYGB7990.git
 * [new branch]      scratch -> scratch
```

Then you will see a Compare & pull request button where you can create your pull request:

This screenshot shows the top section of a GitHub repository page. At the top, there are statistics: 1 commit, 2 branches, 0 packages, 0 releases, and 0 contributors. Below this, a section titled 'Your recently pushed branches:' shows a branch named 'scratch' pushed less than a minute ago. A red box highlights the 'Compare & pull request' button next to this branch. Below the branch list, there are buttons for 'Branch: master', 'New pull request', 'Create new file', 'Upload files', 'Find file', and 'Clone or download'. Further down, the repository name 'Zhihan BYGB7978 Group' is shown, along with the latest commit 'bfd872f' from 3 days ago. A 'Group project' badge is also visible. At the bottom, there is a prompt to 'Add a README' with a corresponding button.

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

This screenshot shows the 'Open a pull request' page on GitHub. At the top, there are dropdown menus for 'base: master' and 'compare: scratch', followed by a green checkmark and the text 'Able to merge. These branches can be automatically merged.' Below this, there is a section for adding a README file. It includes a text area with the placeholder 'My first readme file' and a 'Create pull request' button highlighted with a red box. To the right of the text area, there are sections for 'Reviewers', 'Assignees', 'Labels', 'Projects', and 'Milestone', each with a settings gear icon. At the bottom, there are statistics: 1 commit, 1 file changed, 0 commit comments, and 1 contributor. Below this, there is a section for 'Commits on Jan 15, 2020' showing a commit by 'Zhihan' titled 'Add Readme file'.