

GitHub and Git

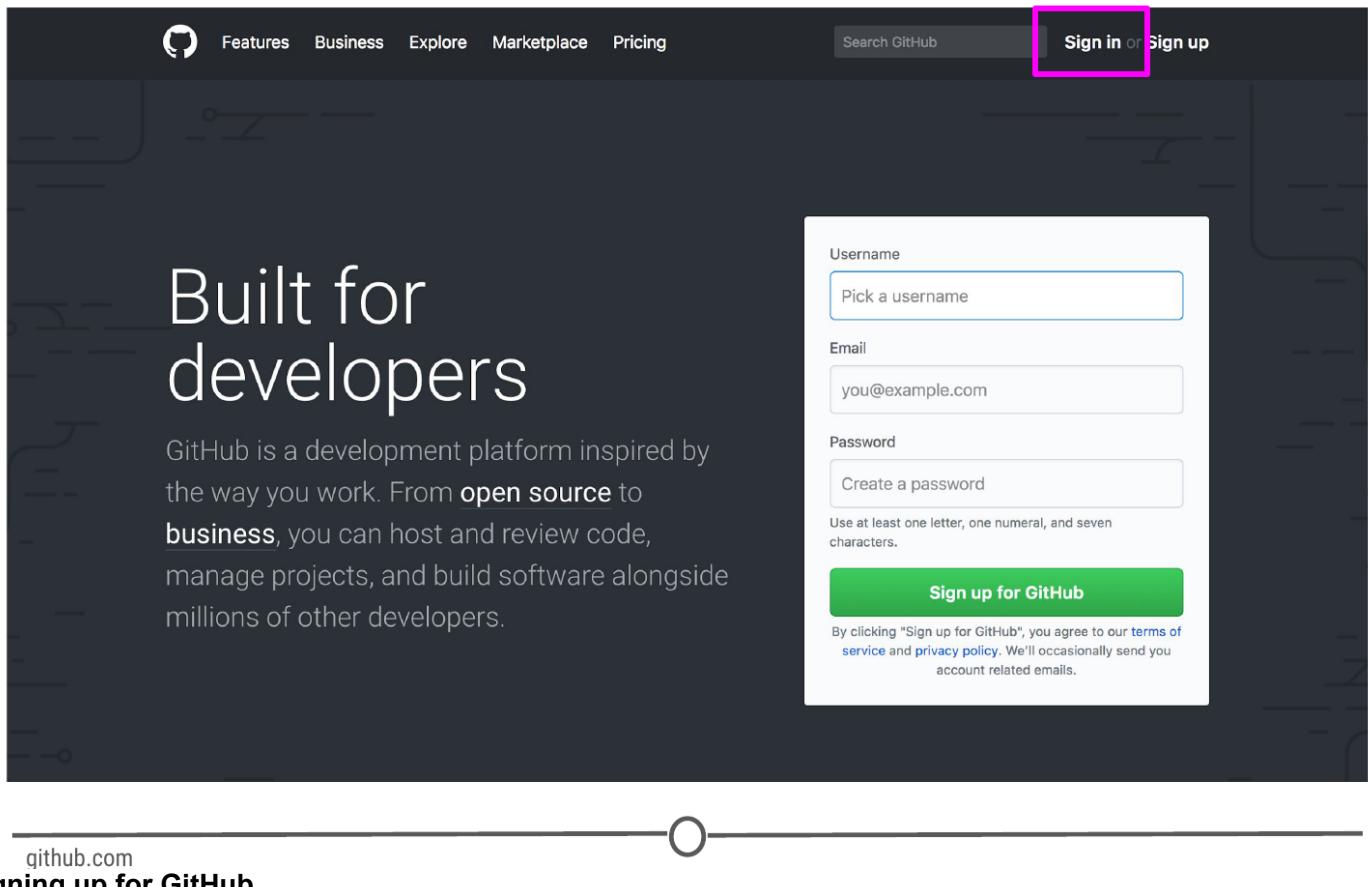
Now that we've got a handle on what version control is, in this lesson, you will sign-up for a GitHub account, navigate around the GitHub website to become familiar with some of its features, and install and configure Git; all in preparation for linking both with your RStudio!

What is GitHub?

As we previously learned, [GitHub](#) is a cloud-based management system for your version controlled files. Like DropBox, your files are both locally on your computer *and* hosted online and easily accessible. Its interface allows you to manage version control and provides users with a web-based interface for creating projects, sharing them, updating code, etc.

Siging up for GitHub

To get a GitHub account, first go to <https://github.com/>. You will be brought to their homepage, where you should fill in your information - make a username, put in your email, choose a secure password, and click "Sign up for GitHub."



Logging in to GitHub

You should now be logged in to GitHub! In the future, to log on to GitHub, go to <https://github.com/>, where you will be presented with the homepage. If you aren't already logged in, click on the "Sign in" link at the top.

Once you've done that, you will see the log in page where you will enter in your username and password that you created earlier.



Sign in to GitHub

Username or email address

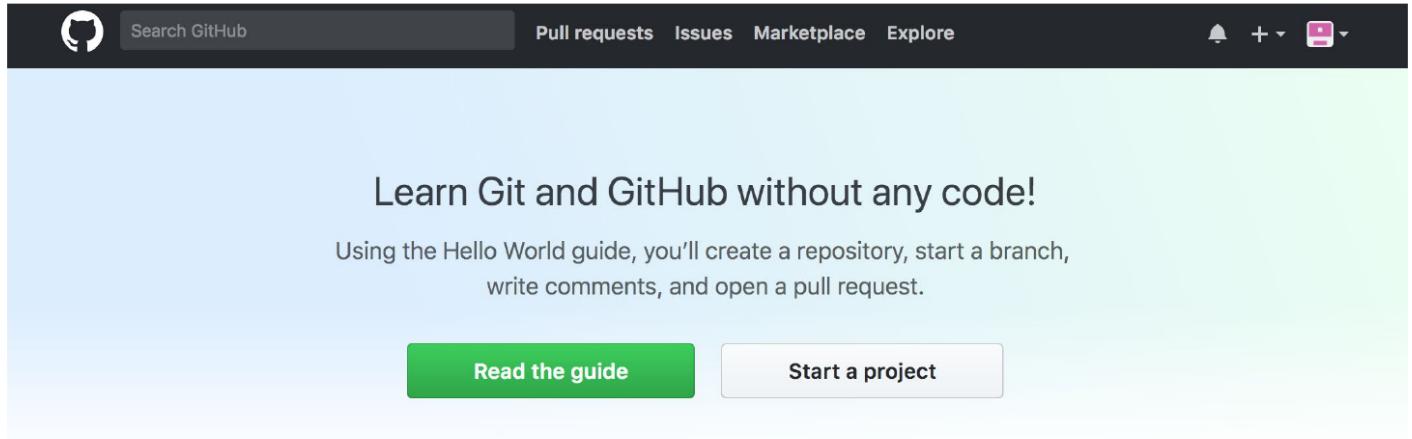
Password [Forgot password?](#)

[Sign in](#)

New to GitHub? [Create an account.](#)

github.com/login
GitHub's log in page

Once logged in, you will be back at <https://github.com/>, but this time the screen should look like this:



The screenshot shows the GitHub homepage. At the top, there is a dark navigation bar with the GitHub logo, a search bar labeled "Search GitHub", and links for "Pull requests", "Issues", "Marketplace", and "Explore". On the far right of the bar are icons for notifications, a plus sign, and a profile picture. Below the navigation bar, the main content area has a light blue gradient background. In the center, the text "Learn Git and GitHub without any code!" is displayed in a large, bold font. Below this text, a smaller paragraph reads: "Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request." At the bottom of the main content area are two green buttons: "Read the guide" on the left and "Start a project" on the right. At the very bottom of the page, there is a footer with links for "Contact GitHub", "API", "Training", "Shop", "Blog", and "About", along with a copyright notice: "© 2018 GitHub, Inc. Terms Privacy Security Status Help".

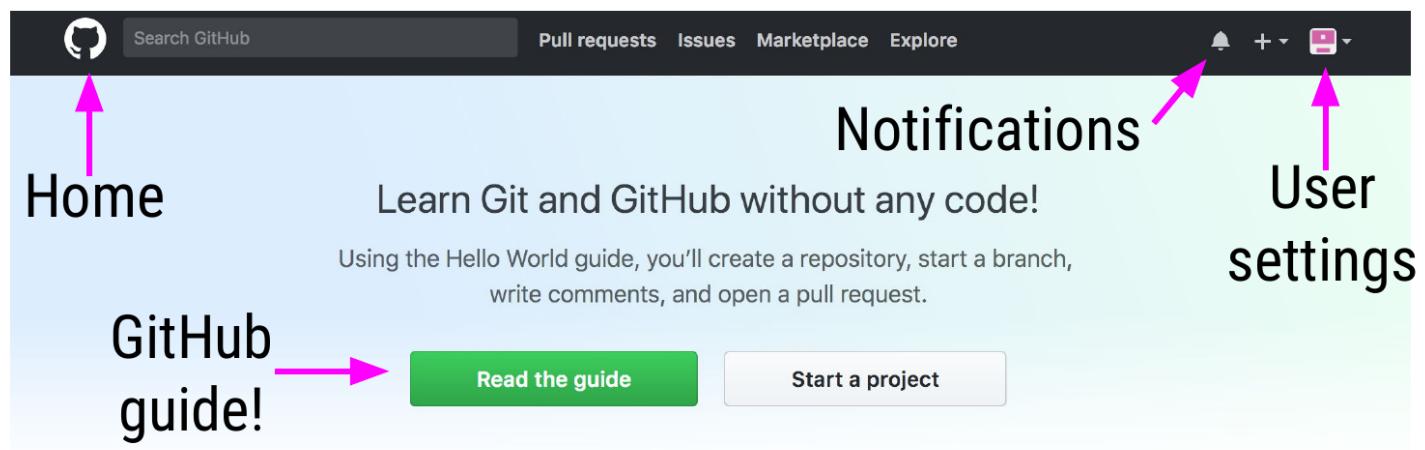
<https://github.com/>
GitHub's homepage at https://github.com/**

The homepage

We're going to take a quick tour of the GitHub website, and we'll particularly focus on these sections of the interface:

1. User settings
2. Notifications
3. Help files
4. The GitHub guide

Following this tour, we'll make your very first repository using the GitHub guide!



© 2018 GitHub, Inc. Terms Privacy Security Status Help

Contact GitHub API Training Shop Blog About

Help files are
your friends!
https://github.com/
Some major features of GitHub

User settings

Now that you've logged on to GitHub, we should fill out some of your profile information and get acquainted with the account settings. In the upper right corner, there is an icon with an arrow beside it, click this and go to "Your profile"

The screenshot shows the GitHub homepage. At the top, there's a navigation bar with links for "Pull requests", "Issues", "Marketplace", and "Explore". On the far right of the bar, there's a user icon with a pink arrow pointing upwards towards it, labeled "User settings". Below the bar, a large green banner features the text "Learn Git and GitHub without any code!" and "Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.". Two buttons are present: a green "Read the guide" button and a white "Start a project" button. At the bottom of the page, there's a footer with links for "Contact GitHub", "API", "Training", "Shop", "Blog", and "About".

© 2018 GitHub, Inc. Terms Privacy Security Status Help



Contact GitHub API Training Shop Blog About

Where to find user settings

This is where you control your account from and can view your contribution histories and repositories.

The screenshot shows a GitHub user profile for "JaneEverydayDoe". On the left, there's a placeholder for a profile picture and a bio section with a "Add a bio" button and an "Edit profile" button. Below that, it says "(⌚) Joined 2 hours ago". In the center, there's a "ProTip! Updating your profile with your name, location, and a profile picture helps other GitHub users get to know you." message with an "Edit profile" button and a close "X" button. Below the tip, there are tabs for "Overview", "Repositories 0", "Stars 0", "Followers 0", and "Following 0". A section titled "Popular repositories" shows a message: "You don't have any public repositories yet.". Below that, a chart titled "1 contribution in the last year" shows a single dark green square for the date "Fri". There are buttons for "Less" and "More" to adjust the scale of the chart. A note explains: "This is your **contribution graph**. Your first 🟢 is for joining GitHub and you'll earn more as you make **additional contributions**. More contributions means a darker green square for that day. Over time, your chart might start looking **something like this**.". At the bottom, there's a "Read the Hello World guide" button.

Your profile

Since you are just starting out, you aren't going to have any repositories or contributions yet - but hopefully we'll change that soon enough! What we can do right now is edit your profile.

Go to "Edit profile" along the lefthand edge of the page. Here, take some time and fill out your name and a little description of yourself in the "Bio" box, and if you like, upload a picture of yourself! When you are done, click "Update profile"

The screenshot shows the GitHub 'Profile' settings page. On the left, a sidebar lists various settings sections: Personal settings, Profile (which is selected and highlighted in orange), Account, Emails, Notifications, Billing, SSH and GPG keys, Security, Blocked users, Repositories, Organizations, Saved replies, Applications, and Developer settings. The main area is titled 'Public profile'. It contains fields for 'Name' (empty), 'Profile picture' (a placeholder image of a white square on a pink rectangle), 'Public email' (a dropdown menu with 'Select a verified email to display'), and a note about email privacy. Below that is a 'Bio' field with placeholder text 'Tell us a little bit about yourself' and a note about @mentioning others. There are also fields for 'URL', 'Company', and 'Location', each with a note about @mentioning others. At the bottom is a green 'Update profile' button.

Editing your profile page

Along the lefthand side of this page, there are many options for you to explore. Click through each of these menus to get familiar with the options available to you. To get you started, go to the account page.

The screenshot shows the 'Personal settings' sidebar on the left with various account management links: Profile, Account (selected), Emails, Notifications, Billing, SSH and GPG keys, Security, Blocked users, Repositories, Organizations, Saved replies, Applications, and Developer settings. The main content area is titled 'Change password'. It contains fields for 'Old password', 'New password', and 'Confirm new password', each with a placeholder icon. Below these is a button labeled 'Update password' and a link 'I forgot my password'. A note at the bottom says '(?) Looking for two-factor authentication? You can find it in [Security](#)'. A second section titled 'Change username' follows, with a note about unintended side effects and a 'Change username' button. A third section titled 'Delete account' is shown with a note about不可逆性 and a 'Delete your account' button.

Your account page

Here, you can edit your password or if you are unhappy with your username, change it. Be careful though, there can be unintended consequences when you change your username - if you are just starting out and don't have any content yet, you'll probably be safe though.

Continue looking through the personal setting options on your own. When you are done, go back to your profile.

Once you've had a bit more experience with GitHub, you'll eventually end up with some repositories to your name. To find those, click on the "Repositories" link on your profile. For now, it will probably look like this:

The screenshot shows a GitHub profile page for a user named 'JaneEverydayDoe'. On the left, there's a large, mostly pink placeholder image area. At the top right, a green button says 'Edit profile' with a pencil icon, and a small 'X' icon is to its right. A blue banner at the top right contains the text 'ProTip! Updating your profile with your name, location, and a profile picture helps other GitHub users get to know you.' Below the banner, there are tabs for 'Overview', 'Repositories 0', 'Stars 0', 'Followers 0', and 'Following 0'. The 'Repositories' tab is highlighted with an orange underline. Below the tabs is a search bar with the placeholder 'Search repositories...'. To the right of the search bar are two buttons: 'Type: All ▾' and a green 'New' button with a document icon. The main content area below the search bar displays the message 'JaneEverydayDoe doesn't have any public repositories yet.' In the bottom left corner of the main content area, there's a small note '(⌚) Joined 2 hours ago'.

Your repositories page

By the end of the lecture though, check back to this page to find your newly created repository!

Notifications

Next, we'll check out the [notifications menu](#). Along the menu bar across the top of your window, there is a bell icon, representing your notifications. Click on the bell.

The screenshot shows the GitHub homepage with a pink arrow pointing to the notifications icon in the top right corner of the header bar.

GitHub and Git | Coursera

Search GitHub

Pull requests Issues Marketplace Explore

Notifications

Learn Git and GitHub without any code!

Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.

[Read the guide](#) [Start a project](#)

© 2018 GitHub, Inc. [Terms](#) [Privacy](#) [Security](#) [Status](#) [Help](#)



[Contact GitHub](#) [API](#) [Training](#) [Shop](#) [Blog](#) [About](#)

Location of the bell icon

The screenshot shows the GitHub Notifications page. At the top left, there are two tabs: "Notifications" (selected) and "Watching". Below the tabs, there are two sections: "Unread" (0) and "Participating" (0). Under "All notifications", there is a message: "No new notifications." followed by a note: "Depending on your [notification settings](#), you'll see updates here for your conversations in watched repositories."

Notifications

Watching

Unread 0

Participating 0

All notifications

No new notifications.

Depending on your [notification settings](#), you'll see updates here for your conversations in watched repositories.

Your notifications

Once you become more active on GitHub and are collaborating with others, here is where you can find messages and notifications for all the repositories, teams, and conversations you are a part of.

Help files

Along the bottom of *every, single, page*, there is the “[Help](#)” button. GitHub has a great help system in place - if you ever have a question about GitHub, this should be your first point to search! Take some time now and look through the various help files, and see if any catch your eye.

The screenshot shows the GitHub homepage. At the top, there is a dark header bar with the GitHub logo, a search bar labeled "Search GitHub", and navigation links for "Pull requests", "Issues", "Marketplace", and "Explore". On the far right of the header are icons for notifications, a plus sign, and a user profile. Below the header, the main content area has a light blue gradient background. In the center, the text "Learn Git and GitHub without any code!" is displayed in bold black font. Below this text is a subtitle: "Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request." At the bottom of this section are two buttons: a green one labeled "Read the guide" and a white one labeled "Start a project". Further down the page, there is a horizontal navigation bar with links for "Contact GitHub", "API", "Training", "Shop", "Blog", and "About". The "Help" link in this bar is highlighted with a pink rectangle. Below this bar, the main content area features a large, bold text "Help files are your friends!" followed by a horizontal line with a small circular icon at its center. At the very bottom of the page, the URL "https://github.com/" is shown, followed by the text "At the bottom of every page, you can find the Help page".

Sometimes you just need a little help.



Bootcamp

- › Set Up Git
- › Create A Repo
- › Fork A Repo
- › Be Social

Setup

- › Signing up for a new GitHub account
- › Verifying your email address
- › About commit email addresses
- › Setting your commit email address on GitHub
- › Setting your commit email address in Git
- › Blocking command line pushes that expose your personal email address
- › Setting your username in Git
- › Dealing with line endings
- › Supported browsers

<https://help.github.com/>

GitHub's help files

The GitHub guide

GitHub recognizes that this can be an overwhelming process for new users, and as such have developed a mini tutorial to get you started with GitHub. Go through [this guide](#) now and create your first repository! When you are done, you should have a repository that looks something like this:

JaneEverydayDoe / hello-world

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

My first repository!

Add topics

3 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

JaneEverydayDoe Merge pull request #1 from JaneEverydayDoe/readme-edits ... Latest commit c9a6e3e a minute ago

README.md Updating README with location of instructions 3 minutes ago

README.md

hello-world

My first repository!

Here is my first repository on this account. I created it entirely within the GitHub interface using the instructions located at: <https://guides.github.com/activities/hello-world>

Your first repository

Take some time to explore around the repository - Check out your commit history so far. Here you can find all of the changes that have been made to the repository, and you can see **who** made the change, **when** they made the change, and provided you wrote an appropriate commit message, you can see **why** they made the change! It should look like similar to this:

JaneEverydayDoe / hello-world

Code Issues Pull requests Projects Wiki Insights Settings

Branch: master

Commits on Mar 9, 2018

- Merge pull request #1 from JaneEverydayDoe/readme-edits ... Verified c9a6e3e
- Updating README with location of instructions Verified a26ec0e
- Initial commit Verified 4e050e4

Newer Older

Your first repository's commit history

Once you've explored all of the options in the repository, go back to your user profile. It should look a little different from before:

ProTip! Updating your profile with your name, location, and a profile picture helps other GitHub users get to know you. [Edit profile](#)

Overview Repositories 1 Stars 0 Followers 0 Following 0

Popular repositories

hello-world	My first repository!
-------------	----------------------

Customize your pinned repositories

10 contributions in the last year Contribution settings ▾

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Mon											
Wed											
Fri											

Learn how we count contributions. Less More

Your profile now shows your first repository

Now when you are on your profile you can see your latest repository created and for a complete listing of your repositories, click on the “Repositories” tab. Here you can see all of your repositories, a brief description, the time of the last edit, and along the right hand side, there is an activity graph, showing when and how many edits have been made on the repository.

The screenshot shows a GitHub profile page for a user named "JaneEverydayDoe". On the left, there is a large placeholder profile picture consisting of a pink square with a white square in the center and a smaller pink rectangle below it. To the right of the profile picture, there is a "ProTip!" box with the text "Updating your profile with your name, location, and a profile picture helps other GitHub users get to know you." and a green "Edit profile" button. Below the tip, there are tabs for "Overview", "Repositories 1", "Stars 0", "Followers 0", and "Following 0". A search bar says "Search repositories..." and a dropdown says "Type: All". A green "New" button is also present. The main content area shows a repository named "hello-world" with the description "My first repository!". It was updated 10 minutes ago. Below the repository, there is a section for "Organizations" featuring a logo for "Data Science Lab".

Your shiny new repository page!

Git

As you may remember from our last lecture, Git is the free and open source version control system which GitHub is built on.

One of the main benefits of using the Git system is its compatibility with RStudio; however, in order to link the two software together, we first need to download and install Git on your computer.

Downloading and installing Git

To download Git, go to <https://git-scm.com/download>. You should arrive at a webpage like this:

The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

GUI Clients

Git comes with built-in GUI tools (`git-gui`, `gitk`), but there are several third-party tools for users looking for a platform-specific experience.

[View GUI Clients →](#)

Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

[View Logos →](#)

Git via Git

If you already have Git installed, you can get the latest development version via Git itself:

```
git clone https://github.com/git/git
```

You can also always browse the current contents of the git repository using the [web interface](#).

</> About this site
Patches, suggestions, and comments are welcome.

Git is a member of Software Freedom Conservancy

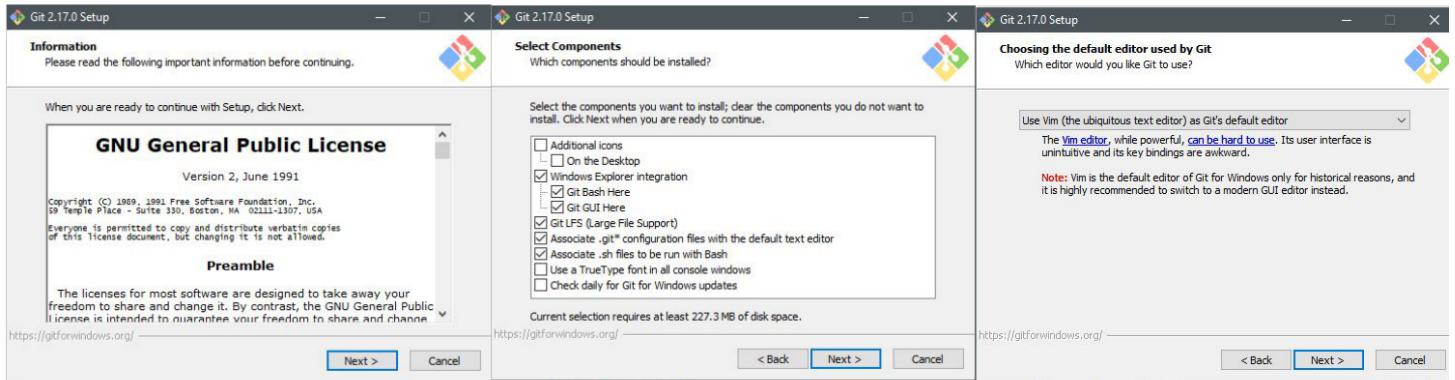
Downloading Git from git-scm.com/download

Click on the appropriate download link for your operating system. This should initiate the download process.

For Windows

Once the download is finished, open the .exe file to initiate the installation wizard. If you receive a security warning, click “Run” and/or “Allow.” Following this, click through the installation wizard, generally accepting the default options unless you have a compelling reason not to.

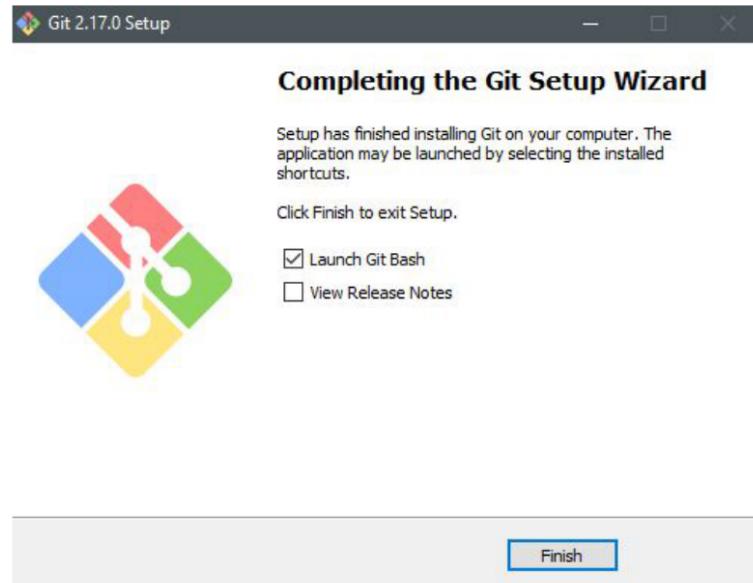
Windows installation process



... and so on

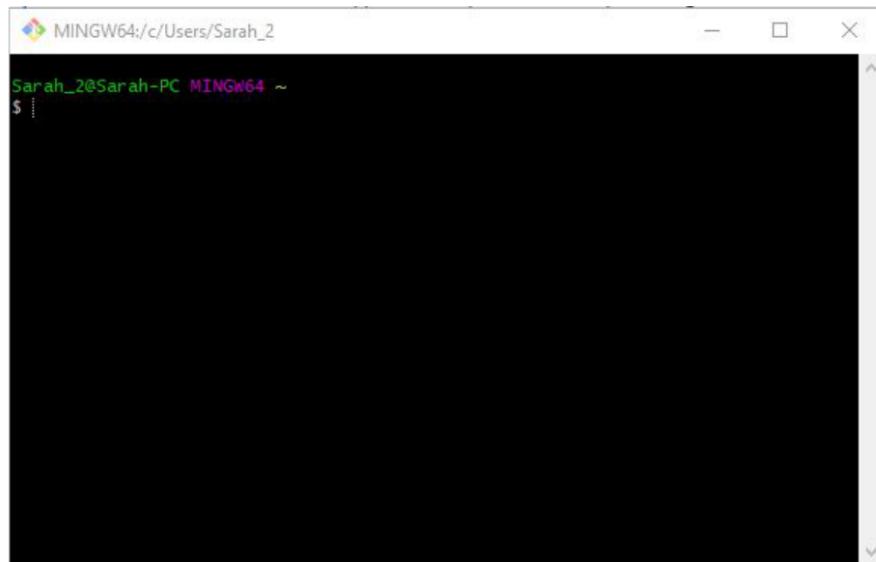
Installation wizard for Git on Windows

Click “Install” and allow the wizard to complete the installation process. Following this, check the “Launch Git Bash” option, and unless you are curious, deselect the “View Release Notes” box, as you are probably not interested in this right now.



Finishing the install process

Doing so, a command line environment will open. Provided you accepted the default options during the installation process, there will now be a Start menu shortcut to launch Git Bash in the future. You have now installed Git.



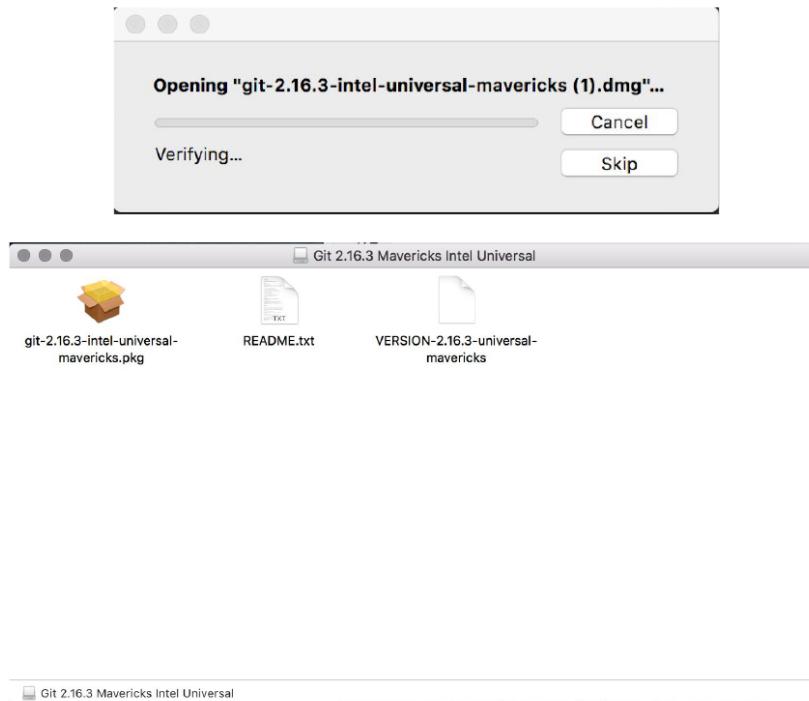
Git Bash is the command line interface you will use to configure Git

For Mac

We will walk you through the most common installation process however, there are multiple ways to get Git onto your Mac. You can follow the tutorials at <https://www.atlassian.com/git/tutorials/install-git> for alternative installation routes.

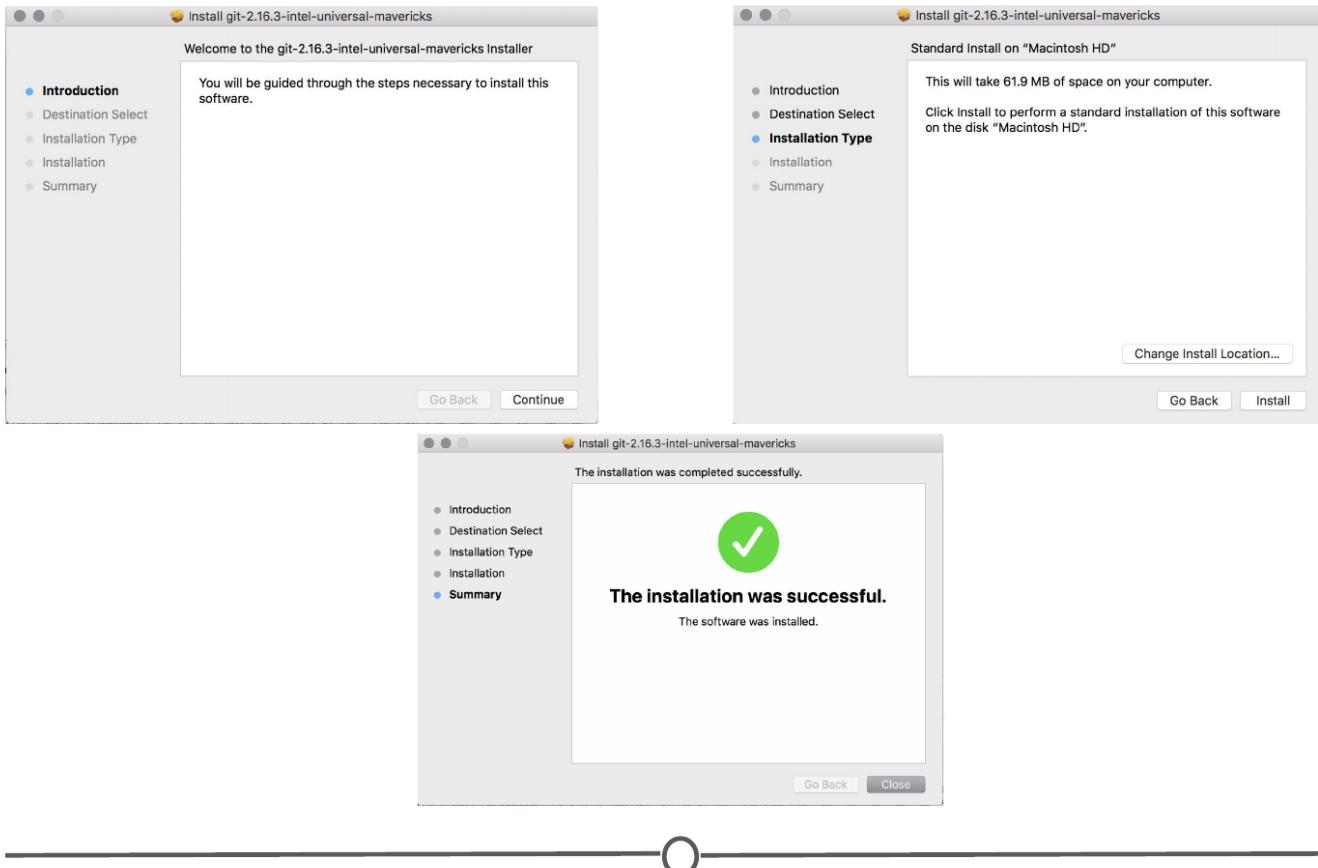
After downloading the appropriate Git version for Macs, you should have downloaded a DMG file for installation on your Mac. Open this file. This will install Git on your computer. A new window will open.

Macs installation process



Installation wizard for Git on Mac

Double click on the .pkg file and an installation wizard will open. Click through the options, accepting the defaults. Click Install. When prompted, close the installation wizard. You have successfully installed Git!



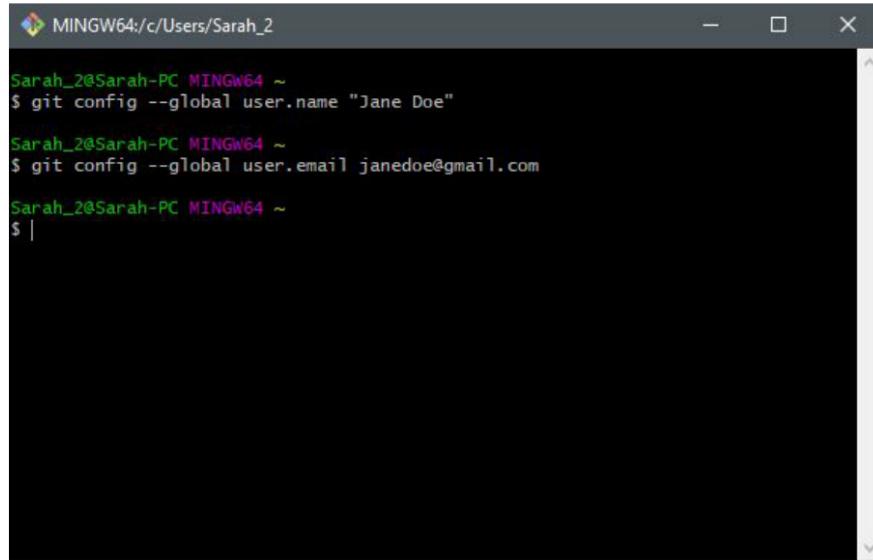
Steps to a successful installation of Git!

Configuring Git

Now that Git is installed, we need to configure it for use with GitHub, in preparation for linking it with RStudio.

We need to tell Git what your username and email are, so that it knows how to name each commit as coming from you. To do so, in the command prompt (either Git Bash for Windows or Terminal for Mac), type: `git config --global user.name "Jane Doe"` with your desired username in place of "Jane Doe." This is the name each commit will be tagged with.

Following this, in the command prompt, type: `git config --global user.email janedoe@gmail.com` **MAKING SURE TO USE THE SAME EMAIL ADDRESS YOU SIGNED UP FOR GITHUB WITH!**



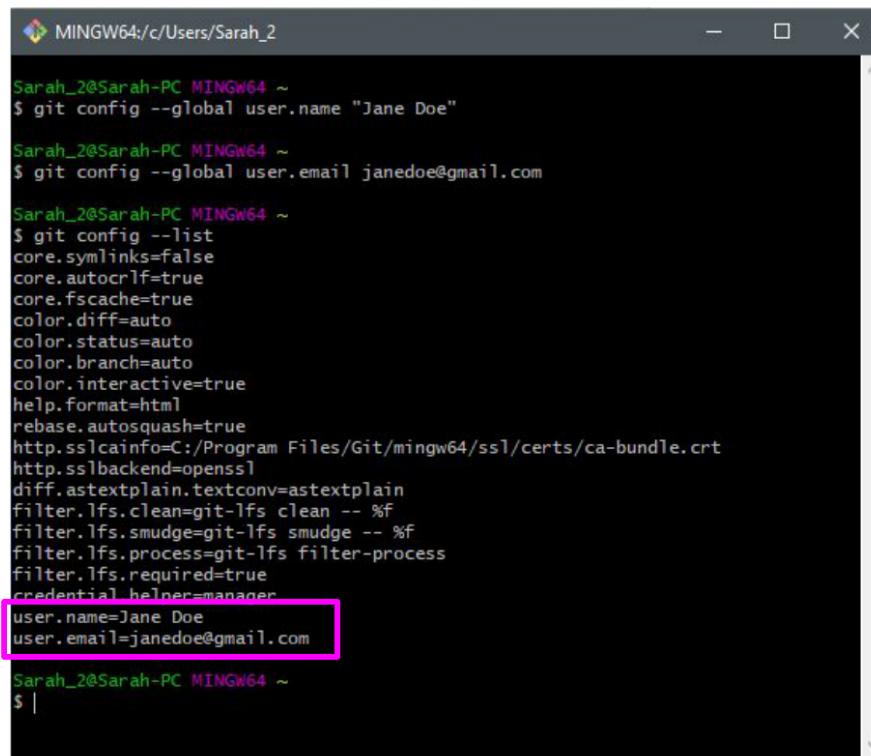
Screenshot of a terminal window titled "MINGW64:/c/Users/Sarah_2". The window shows the following command history:

```
Sarah_2@Sarah-PC MINGW64 ~
$ git config --global user.name "Jane Doe"
Sarah_2@Sarah-PC MINGW64 ~
$ git config --global user.email janedoe@gmail.com
Sarah_2@Sarah-PC MINGW64 ~
$ |
```

Configuring Git to tag each commit with your name and interface with GitHub

Confirming your configuration

At this point, you should be set for the next step, but just to check, confirm your changes by typing: `git config --list`

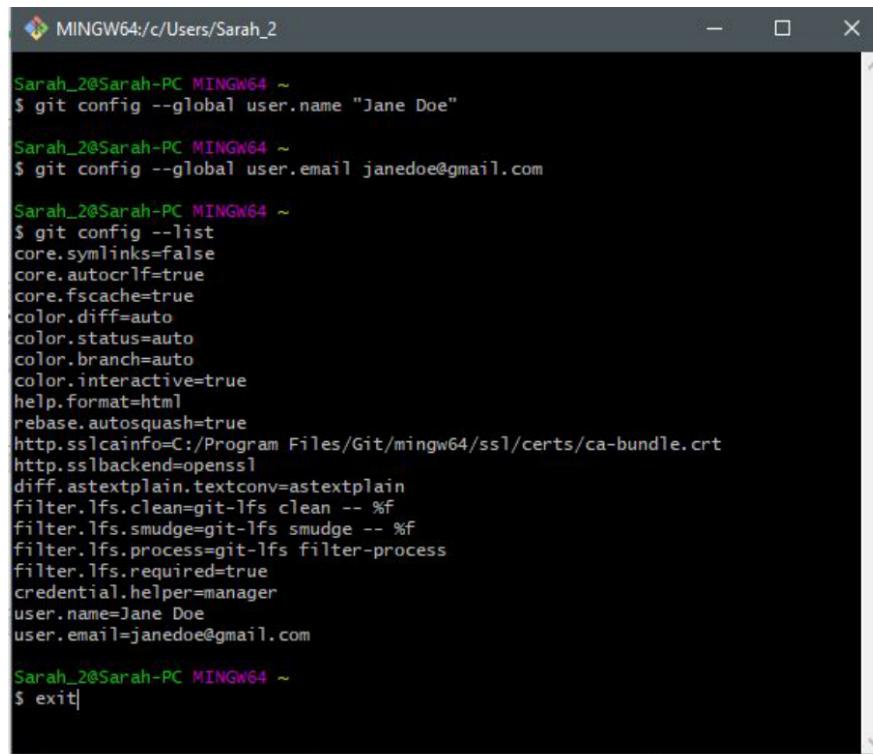


```
Sarah_2@Sarah-PC MINGW64 ~
$ git config --global user.name "Jane Doe"
Sarah_2@Sarah-PC MINGW64 ~
$ git config --global user.email janedoe@gmail.com
Sarah_2@Sarah-PC MINGW64 ~
$ git config --list
core.symlinks=false
core.autocrlf=true
core.fscache=true
color.diff=auto
color.status=auto
color.branch=auto
color.interactive=true
help.format=html
rebase.autosquash=true
http.sslcainfo=C:/Program Files/Git/mingw64/certs/ca-bundle.crt
http.sslbackend=openssl
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
credential.helper=manager
user.name=Jane Doe
user.email=janedoe@gmail.com
Sarah_2@Sarah-PC MINGW64 ~
$ |
```

Confirming your user name and user email

Doing so, you should see the username and email you selected above. If you notice any problems or want to change these values, just retype the original `config` commands from earlier with your desired changes.

Once you are satisfied that your username and email is correct, exit the command line by typing `exit` and hit Enter. At this point, you are all set up for the next lecture!



```
Sarah_2@Sarah-PC MINGW64 ~
$ git config --global user.name "Jane Doe"
Sarah_2@Sarah-PC MINGW64 ~
$ git config --global user.email janedoe@gmail.com
Sarah_2@Sarah-PC MINGW64 ~
$ git config --list
core.symlinks=false
core.autocrlf=true
core.fscache=true
color.diff=auto
color.status=auto
color.branch=auto
color.interactive=true
help.format=html
rebase.autosquash=true
http.sslcainfo=C:/Program Files/Git/mingw64/certs/ca-bundle.crt
http.sslbackend=openssl
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
credential.helper=manager
user.name=Jane Doe
user.email=janedoe@gmail.com

Sarah_2@Sarah-PC MINGW64 ~
$ exit|
```

Exiting the command prompt

Summary

In this lesson, we signed up for a GitHub account and toured the GitHub website. We made your first repository and filled in some basic profile information on GitHub. Following this, we installed Git on your computer and configured it for compatibility with GitHub and RStudio