120A3051

Shreya Idate

Batch: E3

Experiment No: 2

AIM: To learn Version Control System / Source Code Management, install git and create a GitHub account.

THEORY:

Introduction to Version Control System:

Version control, also known as source control, is the practice of tracking and managing changes to software code. Version control systems are software tools that help software teams manage changes to source code over time. As development environments have accelerated, version control systems help software teams work faster and smarter. They are especially useful for DevOps teams since they help them to reduce development time and increase successful deployments.

Version control software keeps track of every modification to the code in a special kind of database. If a mistake is made, developers can turn back the clock and compare earlier versions of the code to help fix the mistake while minimizing disruption to all team members.

Good version control software supports a developer's preferred workflow without imposing one particular way of working. Ideally it also works on any platform, rather than dictate what operating system or tool chain developers must use. Great version control systems facilitate a smooth and continuous flow of changes to the code rather than the frustrating and clumsy mechanism of file locking - giving the green light to one developer at the expense of blocking the progress of others.

Version control software is an essential part of the every-day of the modern software team's professional practices. Individual software developers who are accustomed to working with a capable version control system in their teams typically recognize the incredible value version control also gives them even on small solo projects.

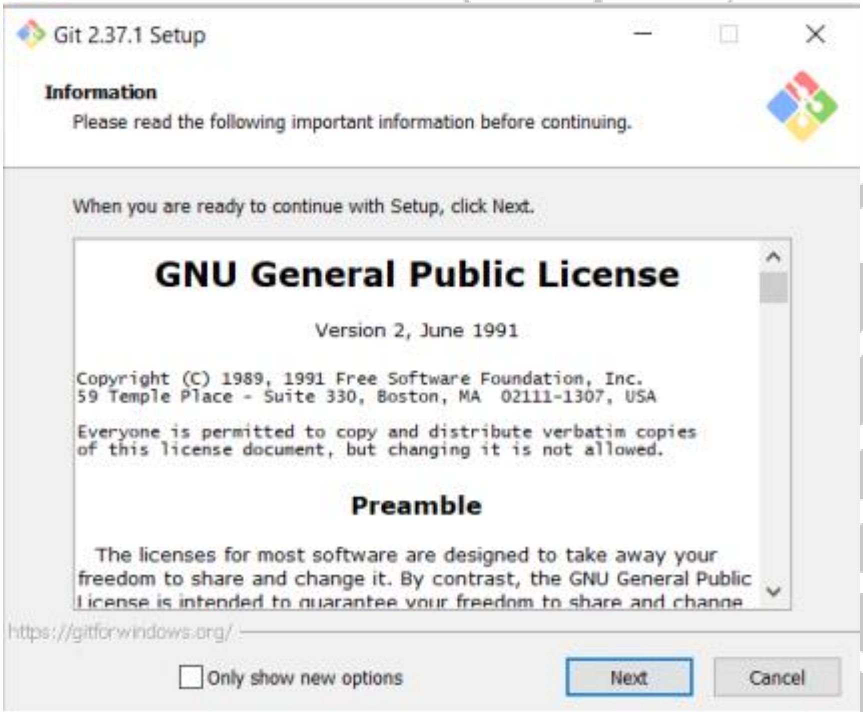
What is Git?

By far, the most widely used modern version control system in the world today is Git. Git is a mature, actively maintained open source project originally developed in 2005 by Linus Torvalds, the famous creator of the Linux operating system kernel. A staggering number of software projects rely on Git for version control, including commercial projects as well as open source. Developers who have worked with Git are well represented in the pool of available software development talent and it works well on a wide range of operating systems and IDEs (Integrated Development Environments).

In addition to being distributed, Git has been designed with performance, security and flexibility in mind.

Install Git on Windows:

- Download the latest Git for Windows installer.
- When you've successfully started the installer, you should see the Git Setup wizard screen. Follow the Next and Finish prompts to complete the installation. The default options are pretty sensible for most users.



Git 2.37.1 Setup

Information

Please read the following important information before continuing.

When you are ready to continue with Setup, click Next.

GNU General Public License

Version 2, June 1991

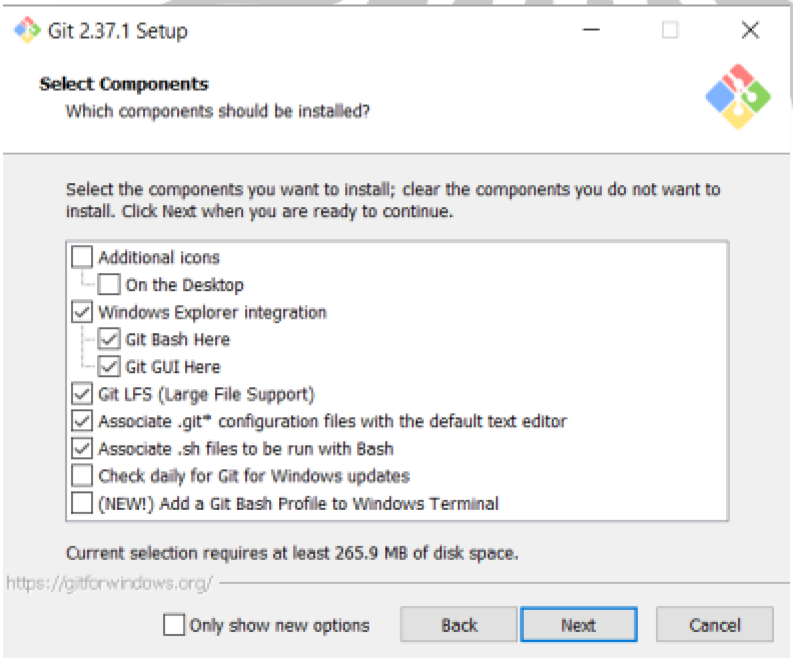
```
Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place - Suite 330, Boston, MA  02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.
```

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change

https://gitforwindows.org/



Git 2.37.1 Setup

Select Components

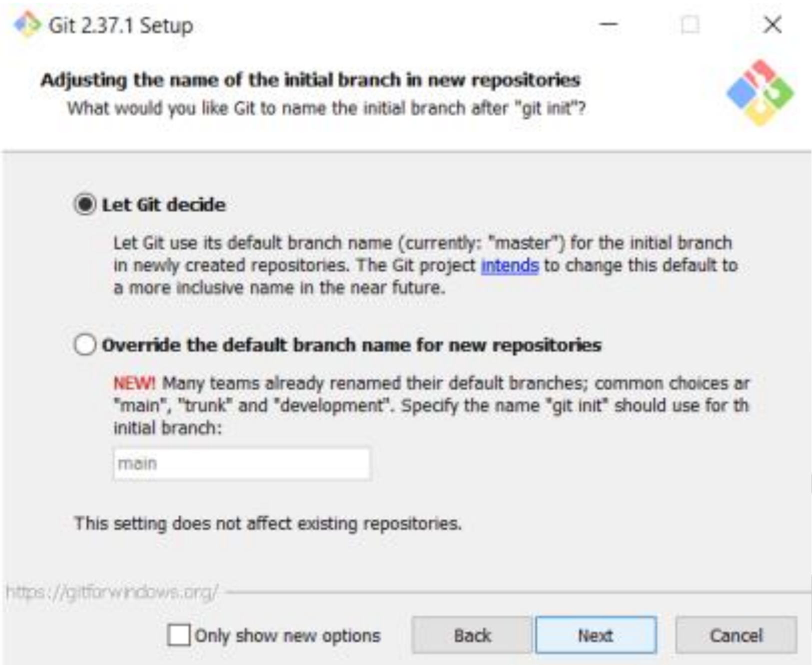
Which components should be installed?

Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.

- □ Additional icons
  - □ On the Desktop
- ☑ Windows Explorer integration
  - ☑ Git Bash Here
  - ☑ Git GUI Here
- ☑ Git LFS (Large File Support)
- ☑ Associate .git* configuration files with the default text editor
- ☑ Associate .sh files to be run with Bash
- □ Check daily for Git for Windows updates
- □ (NEW!) Add a Git Bash Profile to Windows Terminal

Current selection requires at least 265.9 MB of disk space.

https://gitforwindows.org/



Adjusting the name of the initial branch in new repositories

What would you like Git to name the initial branch after "git init"?

● **Let Git decide**

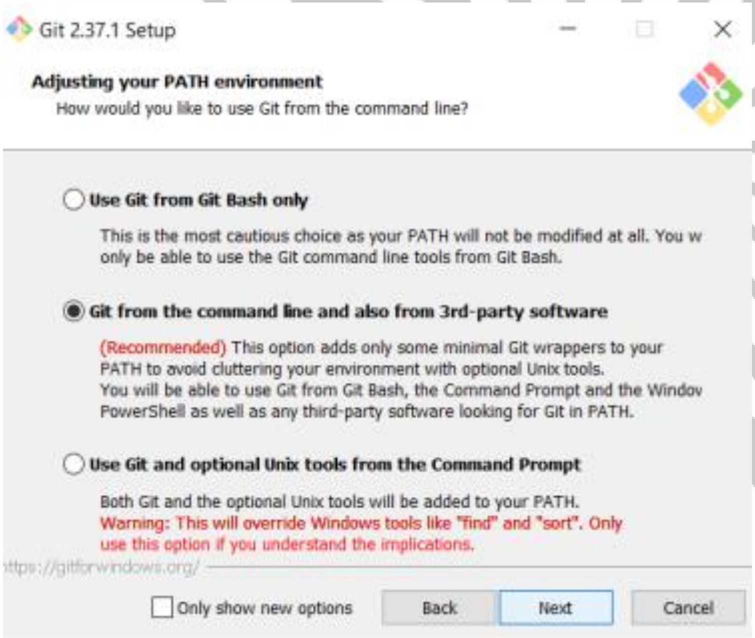
Let Git use its default branch name (currently: "master") for the initial branch in newly created repositories. The Git project intends to change this default to a more inclusive name in the near future.

○ **Override the default branch name for new repositories**

NEW! Many teams already renamed their default branches; common choices ar "main", "trunk" and "development". Specify the name "git init" should use for th initial branch:

main

This setting does not affect existing repositories.



Adjusting your PATH environment

How would you like to use Git from the command line?

○ **Use Git from Git Bash only**

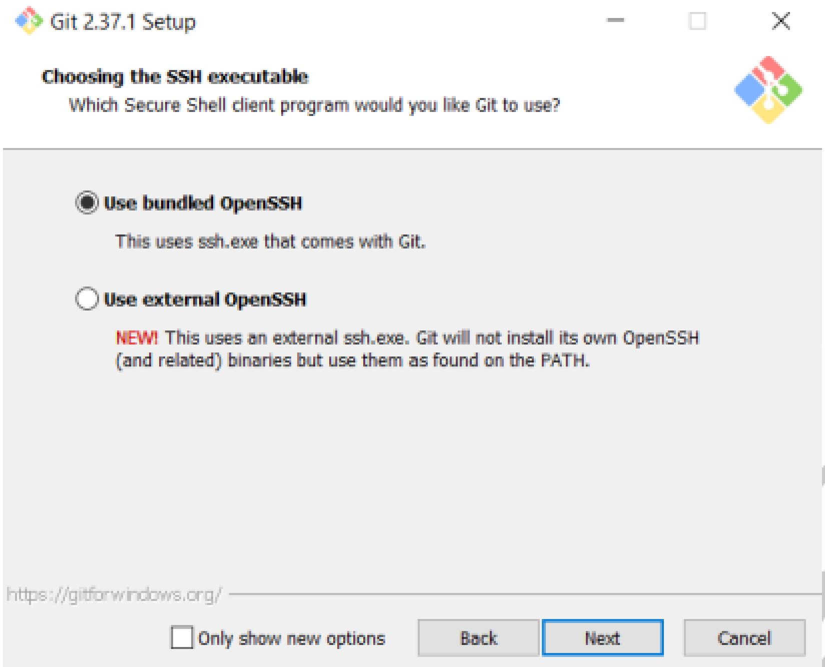
This is the most cautious choice as your PATH will not be modified at all. You w only be able to use the Git command line tools from Git Bash.

● **Git from the command line and also from 3rd-party software**

(Recommended) This option adds only some minimal Git wrappers to your PATH to avoid cluttering your environment with optional Unix tools. You will be able to use Git from Git Bash, the Command Prompt and the Windov PowerShell as well as any third-party software looking for Git in PATH.

○ **Use Git and optional Unix tools from the Command Prompt**

Both Git and the optional Unix tools will be added to your PATH. Warning: This will override Windows tools like "find" and "sort". Only use this option if you understand the implications.



Git 2.37.1 Setup

Choosing the SSH executable

Which Secure Shell client program would you like Git to use?

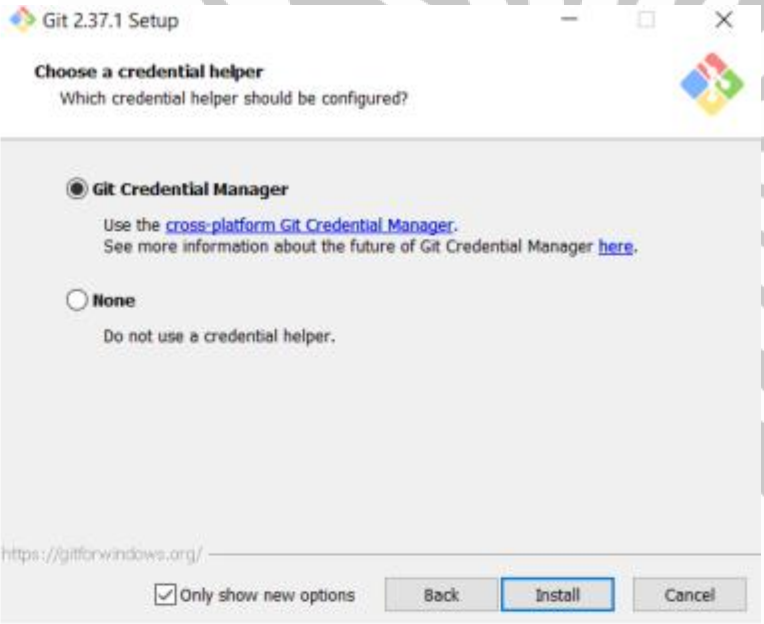
● **Use bundled OpenSSH**

This uses ssh.exe that comes with Git.

○ **Use external OpenSSH**

NEW! This uses an external ssh.exe. Git will not install its own OpenSSH (and related) binaries but use them as found on the PATH.

https://gitforwindows.org/



Git 2.37.1 Setup

Choose a credential helper

Which credential helper should be configured?

● **Git Credential Manager**

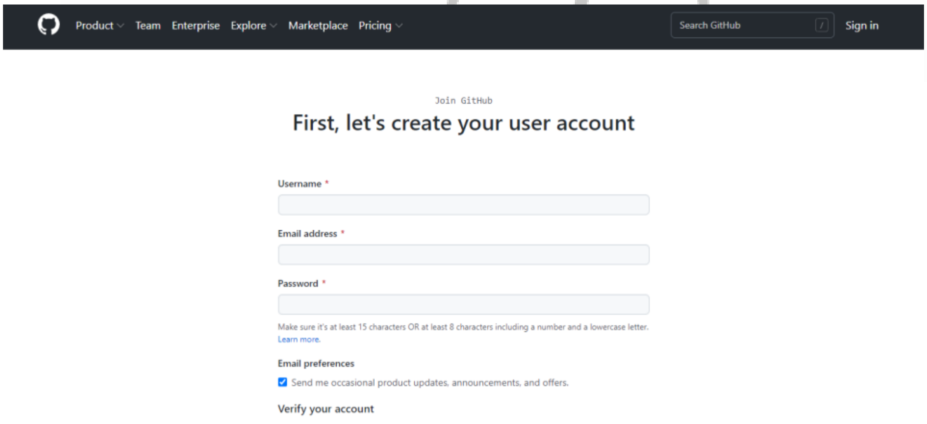
Use the cross-platform Git Credential Manager.
See more information about the future of Git Credential Manager here.

○ **None**

Do not use a credential helper.

https://gitforwindows.org/

- Create your GitHub Account on https://github.com/join



Join GitHub

First, let's create your user account

Username *

Email address *

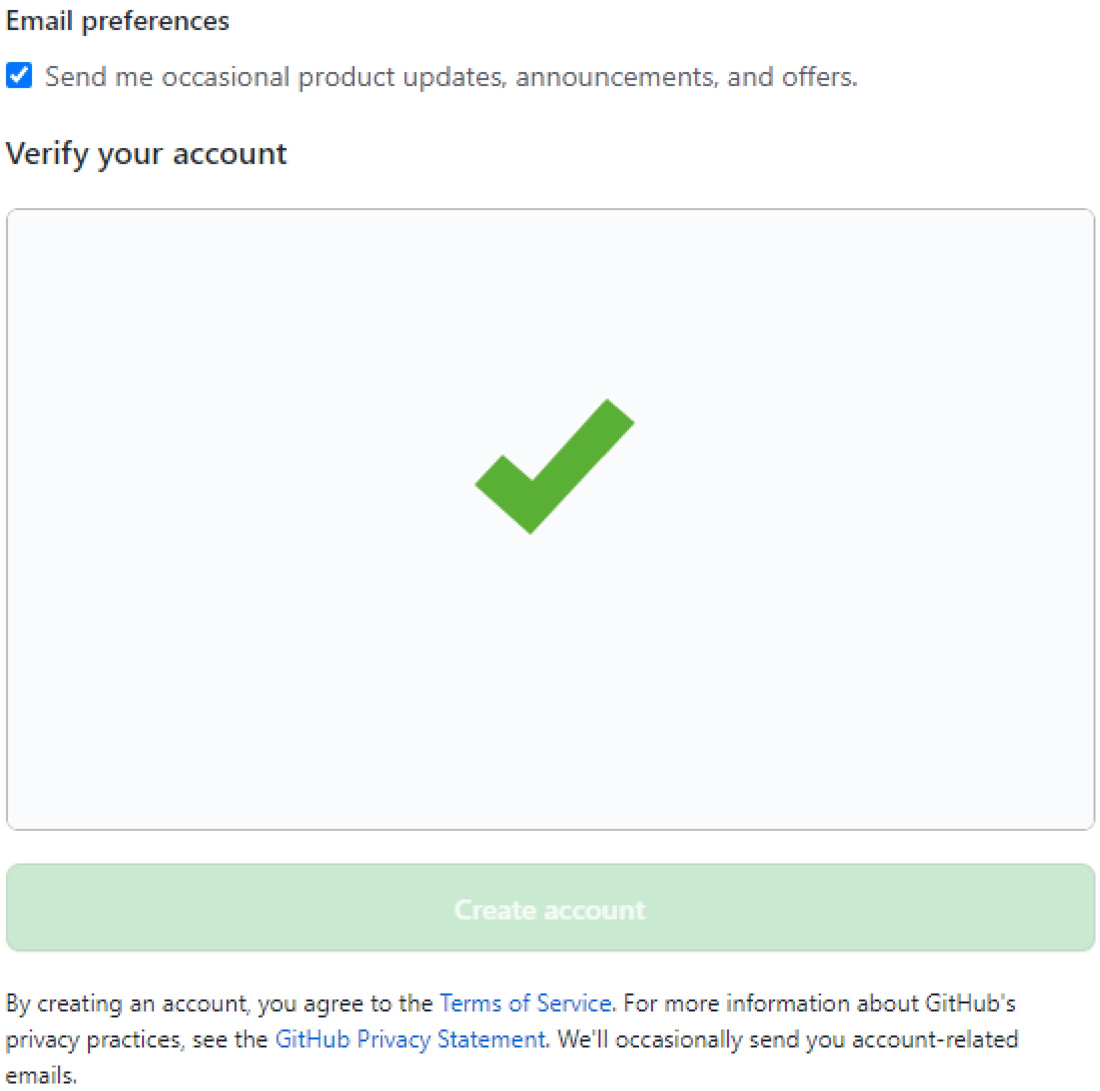
Password *

Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. Learn more.

Email preferences

☑ Send me occasional product updates, announcements, and offers.

Verify your account



Email preferences

☑ Send me occasional product updates, announcements, and offers.

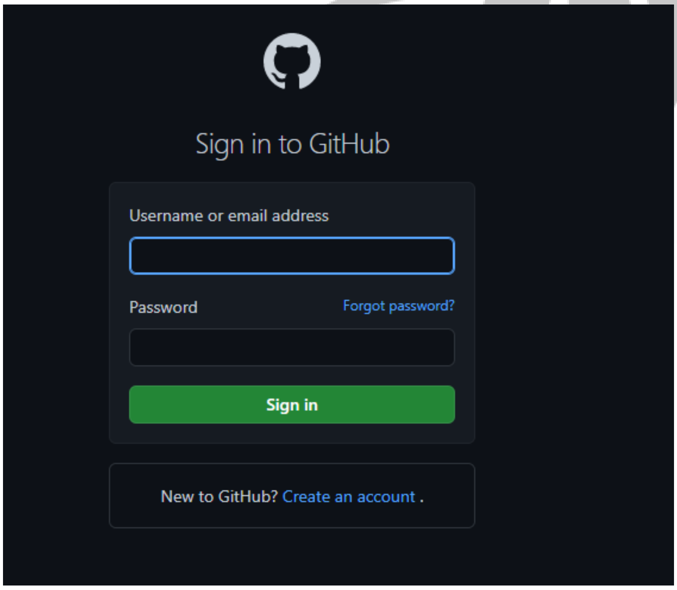
Verify your account

✓

Create account

By creating an account, you agree to the Terms of Service. For more information about GitHub's privacy practices, see the GitHub Privacy Statement. We'll occasionally send you account-related emails.

Login to your GitHub account:



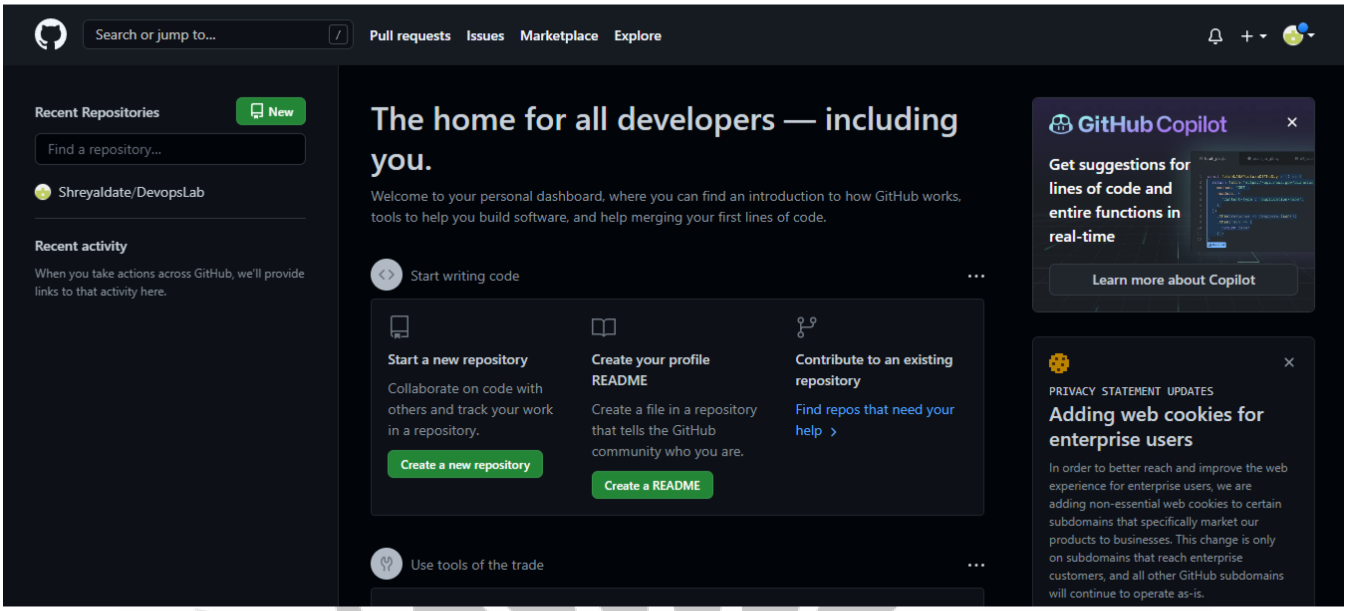
Sign in to GitHub

Username or email address

Password Forgot password?

Sign in

New to GitHub? Create an account .



Recent activity

When you take actions across GitHub, we'll provide links to that activity here.

The home for all developers — including you.

Welcome to your personal dashboard, where you can find an introduction to how GitHub works, tools to help you build software, and help merging your first lines of code.

Start a new repository

Collaborate on code with others and track your work in a repository.

Create your profile README

Create a file in a repository that tells the GitHub community who you are.

Contribute to an existing repository

Find repos that need your help ›

GitHub Copilot

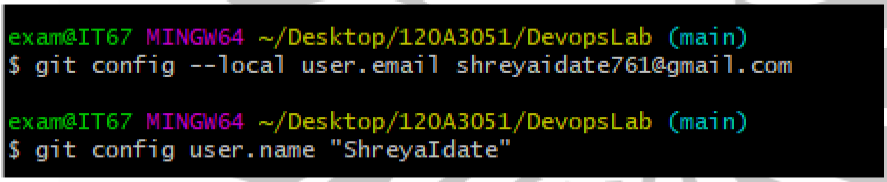
Get suggestions for lines of code and entire functions in real-time

PRIVACY STATEMENT UPDATES

Adding web cookies for enterprise users

In order to better reach and improve the web experience for enterprise users, we are adding non-essential web cookies to certain subdomains that specifically market our products to businesses. This change is only on subdomains that reach enterprise customers, and all other GitHub subdomains will continue to operate as-is.

- Open a Command Prompt (or Git Bash if during installation you elected not to use Git from the Windows Command Prompt).
- Run the following commands to configure your Git username and email using the following commands, replacing Emma's name with your own. These details will be associated with any commits that you create:



```
exam@IT67 MINGW64 ~/Desktop/120A3051/DevopsLab (main)
$ git config --local user.email shreyaidate761@gmail.com

exam@IT67 MINGW64 ~/Desktop/120A3051/DevopsLab (main)
$ git config user.name "ShreyaIdate"
```

CONCLUSION: Successfully learned about Version Control Systems, git and GitHub.