



Install Git and creating repository.

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1. Aim/Overview of the practical: Install Git and creating repository.

2. Task to be done: Download Git for Mac and, to make repositories.

3. Steps for experiment/practical:

1.Browse to the official Git website which is <https://git-scm.com/>.

2.click on the download option for Mac .

The screenshot shows the official Git website (<https://git-scm.com/>). The main navigation bar includes links for 'About', 'Documentation', 'Downloads' (which is highlighted), 'Community', and 'Logos'. The 'Downloads' section features a large image of a Mac computer displaying the latest source release (2.43.0) with a 'Download for Mac' button. Below this, there are sections for 'GUI Clients' (with links to 'View GUI Clients') and 'Logos' (with a link to 'View Logos'). At the bottom of the page, there are footer links for 'About this site', 'Privacy statement', and 'Software Freedom Conservancy'.



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3. In Mac we have to download we have to download three software.

- Homebrew .
- Macports.
- Installing git-gui

The screenshot shows the official Git website at git-scm.com. The main navigation menu includes 'About', 'Documentation', 'Downloads' (which is highlighted), 'GUI Clients', 'Logos', and 'Community'. On the right, there's a search bar and a link to 'Git - Downloading Package'. The central content area is titled 'Download for macOS'. It provides several methods to install Git on macOS:

- Homebrew**: Install `homebrew` if you don't already have it, then `$ brew install git`.
- MacPorts**: Install `MacPorts` if you don't already have it, then `$ sudo port install git`.
- Xcode**: Apple ships a binary package of Git with `Xcode`.
- Binary installer**: Tim Harper provides an `installer` for Git. The latest version is [2.33.0](#), which was released over 2 years ago, on 2021-08-30.
- Building from Source**: If you prefer to build from source, you can find tarballs on [kernel.org](#). The latest version is [2.43.0](#).
- Installing git-gui**: If you would like to install `git-gui` and `gitk`, git's commit GUI and interactive history browser, you can do so using `homebrew`: `$ brew install git-gui`.

4. We have to download the homebrew in Mac using this link in the terminal (or command prompt).The link is given below

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

The screenshot shows a Mac OS X terminal window with the title 'brew.sh'. The window displays the Homebrew installation script. At the top, it says 'Homebrew - The Missing Package Manager for macOS (or Linux)'. Below that is a search bar and language selection ('English'). The main content area has a heading 'Install Homebrew' and contains the following text:

```
#!/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

Paste that in a macOS Terminal or Linux shell prompt. The script explains what it will do and then pauses before it does it. Read about other [installation options](#).

If you're on macOS, try our new `.pkg` installer. Download it from [Homebrew's latest GitHub release](#).

What Does Homebrew Do?
MUST DOSE HOMEDEW DO

The bottom of the window features the 'egov' logo and the text 'A portal to e-governance, e-government and e-participation'.



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5.In terminal we paste the home-brew link and press Return .

After pressing Return it takes us the password for security purpose because this is the third party app.

```
Last login: Fri Jan 19 09:28:39 on ttys000
tarushchauhan@Tarushs-MacBook-Air ~ % /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
=> Checking for 'sudo' access (which may request your password)...
>Password:
Sorry, try again.
>Password:
=> This script will install:
/opt/homebrew/bin/brew
/opt/homebrew/share/doc/homebrew
/opt/homebrew/share/man/man1/brew.1
/opt/homebrew/share/zsh/site-functions/_brew
/opt/homebrew/etc/bash_completion.d/brew
/opt/homebrew

Press RETURN/ENTER to continue or any other key to abort:
=> /usr/bin/sudo /usr/sbin/chown -R tarushchauhan:admin /opt/homebrew
=> Downloading and installing Homebrew...
remote: Enumerating objects: 66, done.
remote: Counting objects: 100% (66/66), done.
remote: Compressing objects: 100% (48/48), done.
remote: Total 66 (delta 30), reused 58 (delta 24), pack-reused 0
Unpacking objects: 100% (66/66), 29.65 KiB | 446.00 KiB/s, done.
From https://github.com/Homebrew/brew
  b3751bca8c..0e0f5c28833 master    -> origin/master
HEAD is now at 0e0f5c28833 Merge pull request #16500 from p-linnane/add-virtualized-check
fatal: cannot force update the branch 'master' checked out at '/opt/homebrew'
To restore the stashed changes to /opt/homebrew, run:
 cd /opt/homebrew && git stash pop
Updated 2 taps (homebrew/core and homebrew/cask).
=> Installation successful!

=> Homebrew has enabled anonymous aggregate formulae and cask analytics.
Read the analytics documentation (and how to opt-out) here:
https://docs.brew.sh/Analytics
No analytics data has been sent yet (nor will any be during this install run).

=> Homebrew is run entirely by unpaid volunteers. Please consider donating:
https://github.com/Homebrew/brewdonations

=> Next steps:
- Run brew help to get started
- Further documentation:
https://docs.brew.sh

(tarushchauhan@Tarushs-MacBook-Air ~ % sudo port install git
>Password:
sudo: port: command not found
tarushchauhan@Tarushs-MacBook-Air ~ %
```



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6. After installing the home-brew we install the macports.

7. Use brew install git in terminal to install git.

```
switch  Switch branches
tag    Create, list, delete or verify a tag object signed with GPG
collaborate (see also: git help workflows)
fetch   Download objects and refs from another repository
pull    Fetch from and integrate with another repository or a local branch
push    Update remote refs along with associated objects

'git help -a' and 'git help -g' list available subcommands and some
concept guides. See 'git help <command>' or 'git help <concept>'
to read about a specific command or concept.
See 'git help git' for an overview of the system.
tarushchauhan@TaruShus-MacBook-Air ~ % git --version
git version 2.39.3 (Apple Git-145)
tarushchauhan@TaruShus-MacBook-Air ~ % brew install git
-> Downloading https://ghcr.io/v2/homebrew/core/git/manifests/2.43.0
#####
# Fetching dependencies for git: gettext and pcre2
-> Downloading https://ghcr.io/v2/homebrew/core/gettext/manifests/0.22.4
#####
# Fetching gettext
-> Downloading https://ghcr.io/v2/homebrew/core/gettext/blobs/sha256:43d9f547faa1836a642c8a4165fb483ff0054cd239ab4b9ca171563067c8db264
#####
# Fetching pcre2
-> Downloading https://ghcr.io/v2/homebrew/core/pcre2/manifests/10.42
#####
# Fetching pcre2
-> Downloading https://ghcr.io/v2/homebrew/core/pcre2/blobs/sha256:f9abacbf5d8f637449786d2bc3ed88c4d25963c814fcbb5bea5bc9e5828badef0
#####
# Fetching git
-> Downloading https://ghcr.io/v2/homebrew/core/git/blobs/sha256:2c321629c8d47c038addf23ff58a1edb3dbab93e594bce969d361e2229d9193
#####
# Installing dependencies for git: gettext and pcre2
-> Installing git dependency: gettext
-> Downloading https://ghcr.io/v2/homebrew/core/gettext/manifests/0.22.4
Already downloaded: /Users/tarushchauhan/Library/Caches/Homebrew/downloads/3ceb9457127eaa7378dd80ed256098ffb391e2350069becb25cf2e2a14f0b7d6d--gettext-0.22.4.bottle_manifest.json
-> Pouring gettext--0.22.4.arm64_sonoma.bottle.tar.gz
-> /opt/homebrew/Cellar/gettext/0.22.4: 2,042 files, 24.3MB
-> Installing git dependency: pcre2
-> Downloading https://ghcr.io/v2/homebrew/core/pcre2/manifests/10.42
Already downloaded: /Users/tarushchauhan/Library/Caches/Homebrew/downloads/6a53794fcaabc5cc5e05b19c02ca9c4c5f2cb9a4d65a5790a6841146465b040f--pcre2-10.42.bottle_manifest.json
-> Pouring pcre2--10.42.arm64_sonoma.bottle.tar.gz
-> /opt/homebrew/Cellar/pcre2/10.42: 230 files, 1.1MB
-> Installing git
-> Pouring git--2.43.0.arm64_sonoma.bottle.tar.gz
-> Caveats
The Tk/Tk GUIs (e.g. gitk, git-gui) are now in the `git-gui` formula.
Subversion interoperability (git-svn) is now in the `git-svn` formula.

zsh completions and functions have been installed to:
/opt/homebrew/share/zsh/site-functions
-> Summary
-> /opt/homebrew/Cellar/git/2.43.0: 1,638 files, 50.5MB
-> Running 'brew cleanup git'...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see `man brew`).
-> Caveats
-> git
The Tk/Tk GUIs (e.g. gitk, git-gui) are now in the `git-gui` formula.
Subversion interoperability (git-svn) is now in the `git-svn` formula.

zsh completions and functions have been installed to:
/opt/homebrew/share/zsh/site-functions
tarushchauhan@TaruShus-MacBook-Air ~ %

[REDACTED]
```



8. How to install git in Mac.

1. Check for Existing Installation:

Open the Terminal app (located in Applications > Utilities).

- git --version and press Enter.

- If Git is already installed, you'll see the version number. If not, proceed to the next step.

2. Choose Your Installation Method:

Method 1: Using the Official Installer

- Visit <https://git-scm.com/download/mac>.

- Download the latest Git for Mac installer.

- Run the installer and follow the on-screen instructions.

Method 2:

- Using Homebrew (Package Manager)

- If you don't have Homebrew, install it first: <https://brew.sh/>

- Open Terminal and type brew install git.

Press Enter and wait for the installation to complete.

Method 3: Using Xcode Command Line Tool



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- Open Terminal and type `xcode-select —install`
- Press Enter and follow the prompts to install the tools (this includes Git).

3. Verify Installation

- Open Terminal and type `git —version`.

4. Configure Git:

- Set your username and email:
 - - `git config --global user.name "Your Name"`
 - - `git config --global user.email "youremail@example.com"`

Additional Information:

MacPorts:

- o Another package manager option: <https://www.macports.org/>
 - o Install Git using `sudo port install git`.
-
- o Building from Source:
 - o Download source code from <https://kernel.org/pub/software/scm/git/>
 - o Build and install Git manually.

•

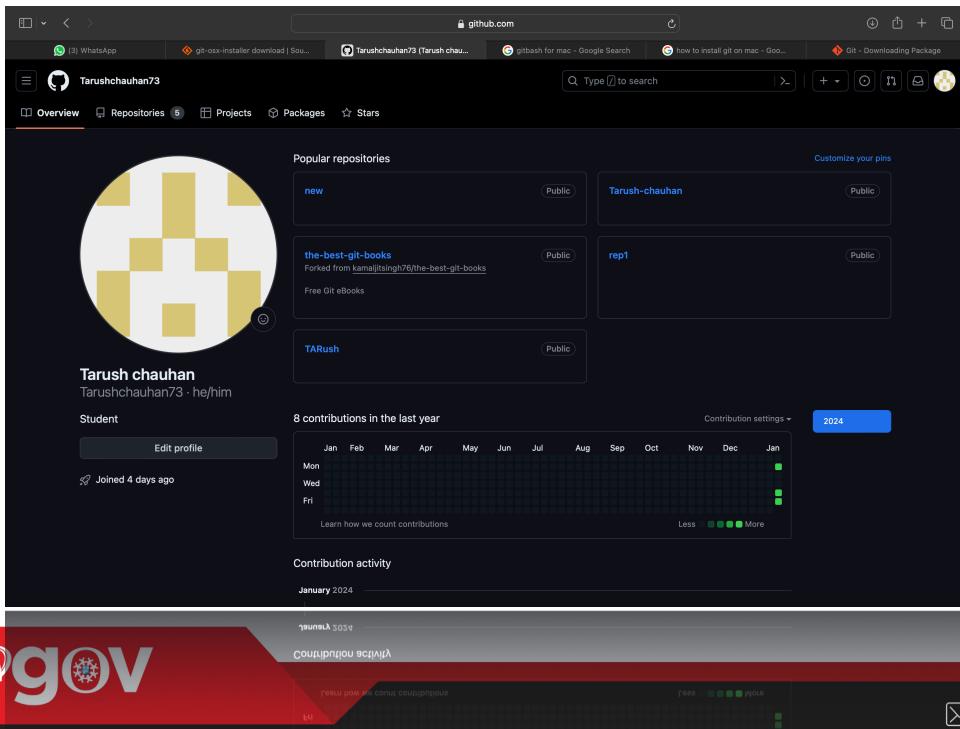
- Installing git-gui and gitk:
 - Graphical tools for Git:
 - Homebrew: brew install git-gui

```
[tarushchauhan@Tarushs-MacBook-Air ~ % mkdir git_welcome
[tarushchauhan@Tarushs-MacBook-Air ~ % cd git_welcome
[tarushchauhan@Tarushs-MacBook-Air git_welcome % git config --global user.name "Tarushchauhan73"
```

```
[tarushchauhan@Tarushs-MacBook-Air git_welcome % git config --list
credential.helper=osxkeychain
init.defaultbranch=main
```

Creating Repository on GitHub

1. After successful login into your account. Click on the option (+) to add new repository to your account.





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2. . After clicking new repository option, we will have to initialize some things like, naming our project, choosing the visibility etc. After performing these steps click Create Repository button.

The screenshot shows the GitHub interface for creating a new repository. The URL in the address bar is `github.com`. The main title is "Create a new repository". The "Repository name" field contains "Git_lab" with a note that it is available. The "Owner" dropdown is set to "Tarushchauhan73". The repository is set to "Public". Under "Initialize this repository with:", there is an unchecked checkbox for "Add a README file". The "Add .gitignore" section shows ".gitignore template: None". The "Choose a license" section shows "License: None". At the bottom, there is a note about selecting a GitHub plan and a "Create repository" button.



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After clicking the button, we will be directed to below page. Right now the only file we have is a readme file.

The screenshot shows a GitHub repository page for 'TARush'. The repository is public and has one branch ('main') and one commit ('Initial commit'). The commit was made by 'Tarushchauhan73' 46 minutes ago. The repository contains two files: 'LICENSE' and 'README.md'. The 'README' file is shown with its content: 'TARush'. The right sidebar provides information about the repository, including its description ('No description, website, or topics provided'), activity (0 stars, 1 watching, 0 forks), releases (no releases published), and packages (no packages published). The bottom of the page includes standard GitHub footer links like Terms, Privacy, Security, Status, Docs, Contact, Manage cookies, and a link to not share personal information.



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4. Result/Output/Writing Summary:

We have successfully created a repository and applied some commands on that.

- Learning outcomes (What I have learnt):

1. Learnt about GitHub.
2. Learnt about Git.
3. Learnt about various git commands that can be applied on Git Bash.
4. Learnt about repositories.
5. Learnt about how to pull request and push.



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Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			