

Experiment 03 - Git Commands

Roll No.	70
Name	MAYURI SHRIDATTA YERANDE
Class	D15-B
Subject	DevOps Lab
LO Mapped	<p>LO1: To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements</p> <p>LO2: To obtain complete knowledge of the “version control system” to effectively track changes augmented with Git and GitHub</p>

Aim: To Perform various GIT operations on local and Remote repositories using GIT
Cheat-Sheet

Introduction:

Git Commit: Takes the staged snapshot and commits it to the project history.

Git Pull: The term Pull is used to receive data from GitHub. It fetches and merges changes on the remote server to your working directory.

Git Push: The push term refers to upload local repository content to a remote repository. Pushing is an act of transfer commits from your local repository to a remote repository.

Git Branch: A branch is a version of the repository that diverges from the main working project. It is an essential feature available in most modern version control systems. A Git project can have more than one branch.

Git Clone: The git clone is a Git command-line utility. It is used to make a copy of the target repository or clone it.

Git Fetch: It is used to fetch branches and tags from one or more other repositories, along with the objects necessary to complete their histories. It updates the remote-tracking branches.

Git Fork: A fork is a rough copy of a repository. Forking a repository allows you to freely test and debug with changes without affecting the original project.

Git checkout: In addition to checking out old commits and old file revisions, git checkout is also the means to navigate existing branches.

Git add: Moves changes from the working directory to the staging area. This gives you the opportunity to prepare a snapshot before committing it to the official history.

Git init: Initializes a new Git repository.

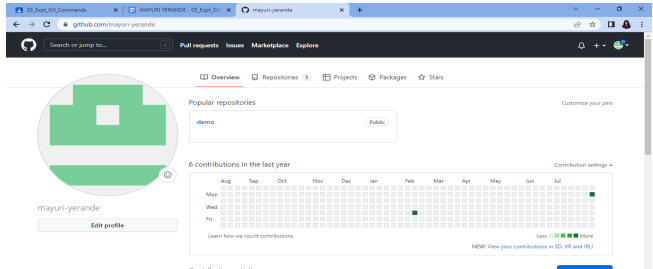
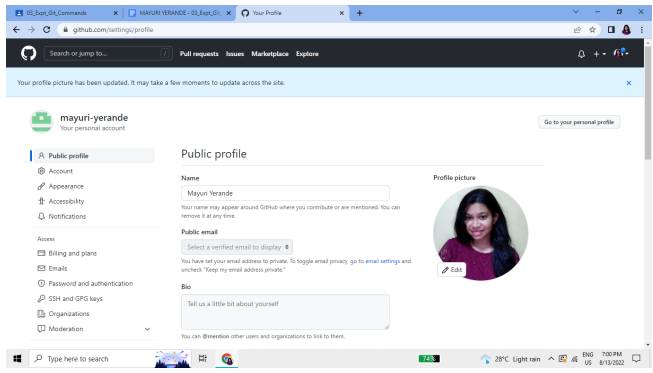
Git log: Lets you explore the previous revisions of a project. It provides several formatting options for displaying committed snapshots.

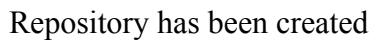
Git merge: A powerful way to integrate changes from divergent branches.

Git status: Displays the state of the working directory and the staged snapshot.

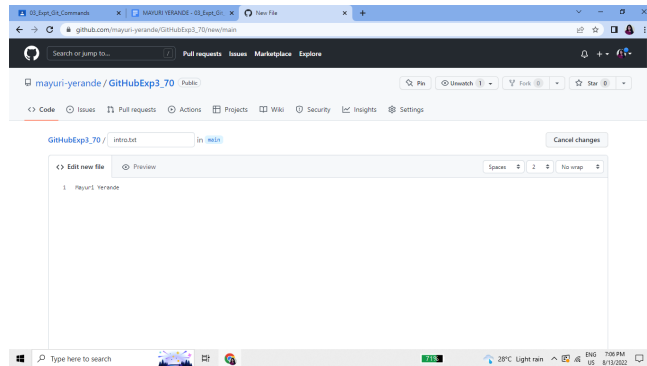
Just getting started – GitHub

Just using GitHub, please complete each task below. This requires that you have already set up an account.

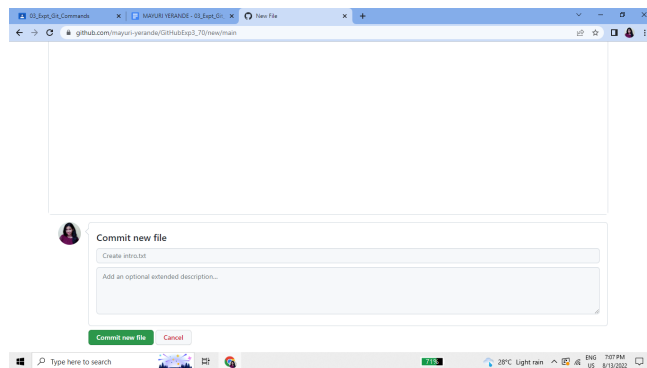
<p>Change your profile picture and name</p>	<p><i>Before changing:</i></p>  <p><i>Click on “Edit profile” and edit the profile pic and name from that section</i></p> <p><i>After changing:</i></p> 
<p>Create a repository named GitHubExpt03_gno</p>	<p>Go to “Repositories” and click on “new”</p> <p>Name your repository</p>



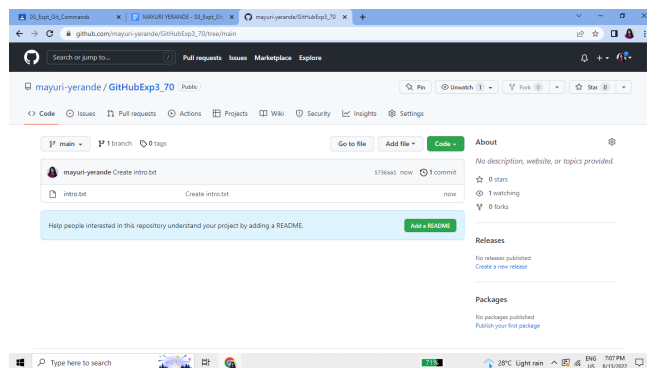
Create a file in the above directory named “intro.txt” with your name on the first line.



Commit the file



File has been created

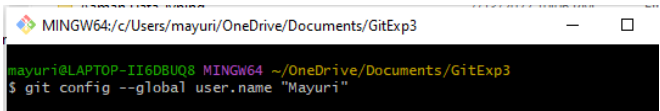


To show ALL of above in one screen, you should be able to go to the URL (or close):

https://github.com/<your username>/GitHubExpt03_grno

Just getting started – Git Bash

Just using Git, please complete each task below and write the answer in the blank box beside the question. This requires that you have already installed Git.

setup user name (Please use your given name)	<p>Open Git Bash. Type the command ‘git config –global user.name “username”’. This will set up your username. You can check by the command ‘git config –global user.name’.</p> 
setup user email (Please use your ves account)	<p>Type the command ‘git config –global user.email “email-id”’. This will set up your email. You can check by the command ‘git config –global user.email’</p> 
Create your local repository named GitExpt03_grno	<p>Go to the directory where you want to create a local repository. Type the command ‘git init “repository_name”’. This will create an empty repository.</p> 

<p>Add a file in above local repository named file_grno_rollno and add some content to file</p> <p>Add it to staging state</p>	<pre> mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git status On branch master No commits yet Untracked files: (use "git add <file>..." to include in what will be committed) hello.txt nothing added to commit but untracked files present (use "git add" to track) mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git add hello.txt </pre>
<p>Commit the files</p>	<p>To commit the files, type ‘git commit -m “some message”</p> <pre> mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git commit -m "First Commit" [master (root-commit) 58eb4a8] First Commit 1 file changed, 1 insertion(+) create mode 100644 hello.txt </pre>
<p>Create a scenario for modifications/additions of the multiple files. Show the advantage of staging state.</p>	<p>Here, you can create multiple files. Add a few of them to the staging area with ‘git add’ and then look for the status using ‘git status’. Then make a Commit. You can keep a track using ‘git status’ and ‘git log’</p> <pre> mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git status On branch master Untracked files: (use "git add <file>..." to include in what will be committed) second.txt nothing added to commit but untracked files present (use "git add" to track) mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git add second.txt mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git status On branch master Changes to be committed: (use "git restore --staged <file>..." to unstage) new file: second.txt mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git commit -m "second" [master b80b517] second 1 file changed, 1 insertion(+) create mode 100644 second.txt mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git status </pre>
<p>Display the log</p>	<p>To see the log, just type the command ‘git log’</p> <pre> mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git log commit b80b517164347b74f0e2dd5ea5b4fcee5ebd8918 (HEAD -> master) Author: Mayuri <2020.mayuri.yerande@ves.ac.in> Date: Sat Aug 13 19:40:25 2022 +0530 second commit 58eb4a855bbb344777483f5bb283478119c01a9c Author: Mayuri <2020.mayuri.yerande@ves.ac.in> Date: Sat Aug 13 19:37:37 2022 +0530 First Commit </pre>

<p>Download your GitHub repository created in table-1 named GitHubExpt03_grno</p>	<p>To add your GitHub repository to the local machine, type command 'git remote add origin <i>link</i>'. The link you'll get on your GitHub repository section.</p> <pre>mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git remote add origin https://github.com/mayuri-yerande/GitHubExp3_70.git</pre>
<p>Make some changes in the GitHub file.</p> <p>Pull the latest files from your GitHub repository</p>	 <pre>mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git push -u origin master Enumerating objects: 6, done. Counting objects: 100% (6/6), done. Delta compression using up to 4 threads Compressing objects: 100% (3/3), done. Writing objects: 100% (6/6), 477 bytes 22.00 KiB/s, done. Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 remote: remote: Create a pull request for 'master' on GitHub by visiting: remote: https://github.com/mayuri-yerande/GitHubExp3_70/pull/new/master remote: To https://github.com/mayuri-yerande/GitHubExp3_70.git * [new branch] master -> master branch 'master' set up to track 'origin/master'.</pre>
<p>Make some changes in the local file of GitHub repository</p> <p>Update the changes back to Github Repository</p>	<p>Make some changes in the local file and commit the changes. Then type 'git push -u origin master'. Visit your GitHub, go into the commit history, you'll see the commit changes made.</p> <pre>mayuri@LAPTOP-II6DBUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70 (master) \$ git pull origin remote: Enumerating objects: 12, done. remote: Counting objects: 100% (12/12), done. remote: Compressing objects: 100% (7/7), done. remote: Total 12 (delta 0), reused 0 (delta 0), pack-reused 0 Unpacking objects: 100% (12/12), 2.60 KiB 3.00 KiB/s, done. From https://github.com/mayuri-yerande/GitHubExp3_70 * [new branch] main -> origin/main Already up to date.</pre>

Team set up in GitHub

The screenshot shows the GitHub repository page for 'VinitVV/Collab'. The repository is public and has 1 watch, 0 forks, and 0 stars. The main branch is 'main' with 1 branch and 0 tags. The repository contains a single commit by VinitVV, titled 'Initial commit', which includes a file named 'README.md'. The README content is 'Collab'. The right sidebar shows the repository's metadata: no description, 0 stars, 1 watching, 0 forks, no releases, and no packages.

The screenshot shows the GitHub invitation page for 'VinitVV/Collab'. The page displays the invitation from VinitVV to collaborate on the repository. It includes a list of permissions that will be granted to the invited user, such as public profile information, activity within the repository, country of request origin, access level for this repository, and IP address. The user is prompted to either 'Accept invitation' or 'Decline'.

```
MINGW64/c:/Users/mayuri/OneDrive/Documents/GitExp3/GitExp03_70/Collab
mayuri@LAPTOP-II60BUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70/Collab (
main)
$ git pull
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 2 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (2/2), 610 bytes | 4.00 KiB/s, done.
From https://github.com/VinitVV/Collab
c0d770f..1625297  main    -> origin/main
Updating c0d770f..1625297
Fast-forward
 ghanishtha.txt => ghanishtha | 0
1 file changed, 0 insertions(+), 0 deletions(-)
rename ghanishtha.txt => ghanishtha (100%)

mayuri@LAPTOP-II60BUQ8 MINGW64 ~/OneDrive/Documents/GitExp3/GitExp03_70/Collab (
main)
$ git log
commit 1625297a997f747c4caa18630a6a8a8be323566 (HEAD -> main, origin/main, orig
in/HEAD)
Author: Ghanishtha09 <100609374+Ghanishtha09@users.noreply.github.com>
Date: Sat Aug 13 23:14:15 2022 +0530

    Rename ghanishtha.txt to ghanishtha

commit c0d770fb6ec50ef21e3511c9668c20a7d61d421a
Author: Ghanishtha09 <100609374+Ghanishtha09@users.noreply.github.com>
Date: Sat Aug 13 23:04:34 2022 +0530

    Update ghanishtha.txt

commit d4079e179bf7fcef8d363f993b434cae37d645c1
Author: Vinit Variyani <96524088+VinitVV@users.noreply.github.com>
Date: Sat Aug 13 23:04:27 2022 +0530

    Exp added

commit 897c83d172f608a15cfc185e5c58d486aad53cea
Author: Mayuri Yerande <99879701+mayuri-yerande@users.noreply.github.com>
Date: Sat Aug 13 23:04:26 2022 +0530

    ...skipping...
commit 1625297a997f747c4caa18630a6a8a8be323566 (HEAD -> main, origin/main, origin/HEAD)
Author: Ghanishtha09 <100609374+Ghanishtha09@users.noreply.github.com>
Date: Sat Aug 13 23:14:15 2022 +0530

    Rename ghanishtha.txt to ghanishtha
```

```
MINGW64/c:/Users/mayuri/OneDrive/Documents/GitExp3/GitExp03_70/Collab
commit 1625297a997f747c4caa18630a6a8a8be323566 (HEAD -> main, origin/main, origin/HEAD)
Author: Ghanishtha09 <100609374+Ghanishtha09@users.noreply.github.com>
Date: Sat Aug 13 23:14:15 2022 +0530

    Rename ghanishtha.txt to ghanishtha

commit c0d770fb6ec50ef21e3511c9668c20a7d61d421a
Author: Ghanishtha09 <100609374+Ghanishtha09@users.noreply.github.com>
Date: Sat Aug 13 23:04:34 2022 +0530

    Update ghanishtha.txt

commit d4079e179bf7fcef8d363f993b434cae37d645c1
Author: Vinit Variyani <96524088+VinitVV@users.noreply.github.com>
Date: Sat Aug 13 23:04:27 2022 +0530

    Exp added

commit 897c83d172f608a15cfc185e5c58d486aad53cea
Author: Mayuri Yerande <99879701+mayuri-yerande@users.noreply.github.com>
Date: Sat Aug 13 23:04:26 2022 +0530

    Update mayuri.txt

commit 958d16519af9c7e54854f0c57e7ddd5e55dc942
Author: Vinit Variyani <96524088+VinitVV@users.noreply.github.com>
Date: Sat Aug 13 22:58:57 2022 +0530

    collab file

commit d908dd29c3c931433acc3b91733647ef787c0667
Author: pushkaraj007 <92093932+pushkaraj007@users.noreply.github.com>
Date: Sat Aug 13 22:58:44 2022 +0530

    Rename README.md to pushkaraj_09

commit c64c0ab7f06aa50f9d14321a2ac8540b683510cd
Author: Ghanishtha09 <100609374+Ghanishtha09@users.noreply.github.com>
Date: Sat Aug 13 22:58:35 2022 +0530

    Create ghanishtha.txt

commit 8a98e6af09481e618c2d82e111e63525ee51303
Author: Mayuri Yerande <99879701+mayuri-yerande@users.noreply.github.com>
Date: Sat Aug 13 22:58:25 2022 +0530

    Create mayuri.txt

commit 760e324f6fac9de3686bb91e897ce26296d992b
|
```

Conclusion : Commands like git add, git log, git status, git commit were used to perform operations on the files. Local and Remote repositories were connected and operations were performed using commands like git push, git pull. Collaboration for Projects was also performed using GitHub.