

Subject Name: Source Code Management

Subject Code: CS181

Cluster: Beta

Department: CSE

CHITKARA
UNIVERSITY



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G01

Submitted To:

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Experiment No. 1

Aim: Setting up of Git Client

Theory:

GIT → It is basically used for pushing and pulling of code. We can use git and git-hub parallelly to work with multiple members or individually. We can make , edit , recreate ,copy or download any code on git hub using git.

What is GIT ? → It's a Version Control System(VCS) → It is a software or we can say a server by which we are able to track all the previous changes in the code.

Advantages of GIT →

Procedure:

We can install Git on Windows, using the most official build which is available for download on the GIT's official website or by just typing (s c m git) on any search engine . We can go on <https://git-scm.com/download/win> and can select the platform and bit-version to download. And after clicking on your desired bit-version or ios it will start downloading automatically.

snapshot

About

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Community

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](#).

Download for Windows

[Click here to download](#) the latest (**2.35.1**) **64-bit** version of **Git for Windows**. This is the most recent [maintained build](#). It was released **about 2 months ago**, on 2022-02-01.

Other Git for Windows downloads

Standalone Installer

[32-bit Git for Windows Setup.](#)

[64-bit Git for Windows Setup.](#)

Portable ("thumbdrive edition")

[32-bit Git for Windows Portable.](#)






[64-bit Git for Windows Portable.](#)

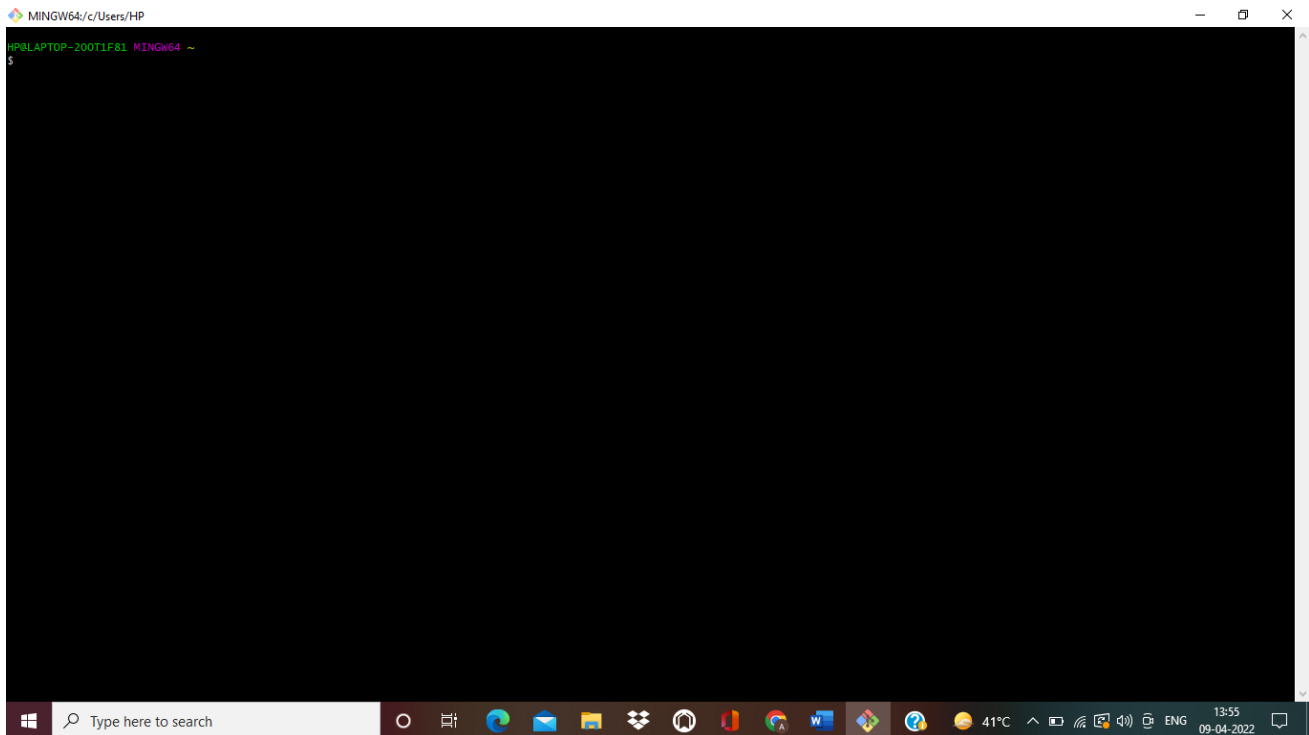
Using winget tool

Install [winget tool](#) if you don't already have it, then type this command in command prompt or Powershell.

```
winget install --id Git.Git -e --source winget
```

The current source code release is version **2.35.1**. If you want the newer version, you can build it from [the source code](#).

Name	Date modified	Type	Size
 Git Bash	16-03-2022 08:51	Shortcut	2 KB
 Git CMD	16-03-2022 08:51	Shortcut	2 KB
 Git FAQs (Frequently Asked Questions)	16-03-2022 08:51	Internet Shortcut	1 KB
 Git GUI	16-03-2022 08:51	Shortcut	2 KB
 Git Release Notes	16-03-2022 08:51	Shortcut	2 KB



Experiment No. 02

Aim: Setting up GitHub Account

Theory:

What is GitHub -> GitHub is a website and cloud-based service (client) that helps an individual or a developers to store and manage their code. We can also track as well as control changes to our or public code.

Advantages of GitHub -> GitHub's has a user-friendly interface and is easy to use .We can connect the git-hub and git but using some commands shown below in figure 001. Without GitHub we cannot use Git because it generally requires a host and if we are working for a project we need to share it will our team members, which can only be done by making a repository . Additionally , anyone can sign up and host a public code repository for free, which makes GitHub especially popular with open-source projects.

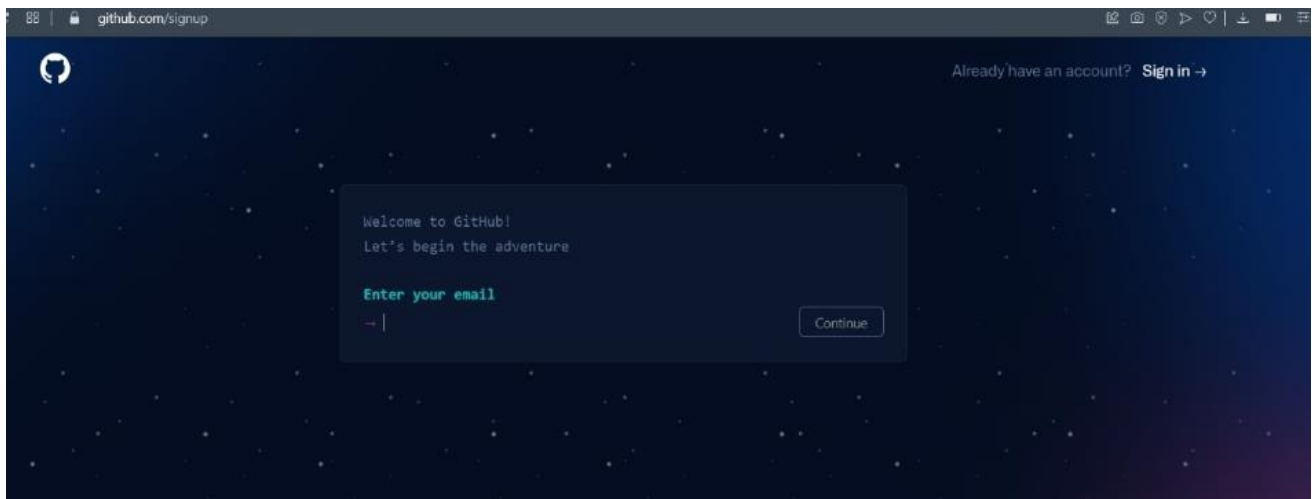
Procedure:-

Step1 :-

Google (any search engine)
Search for git-hub or (<https://github.com/signup>).

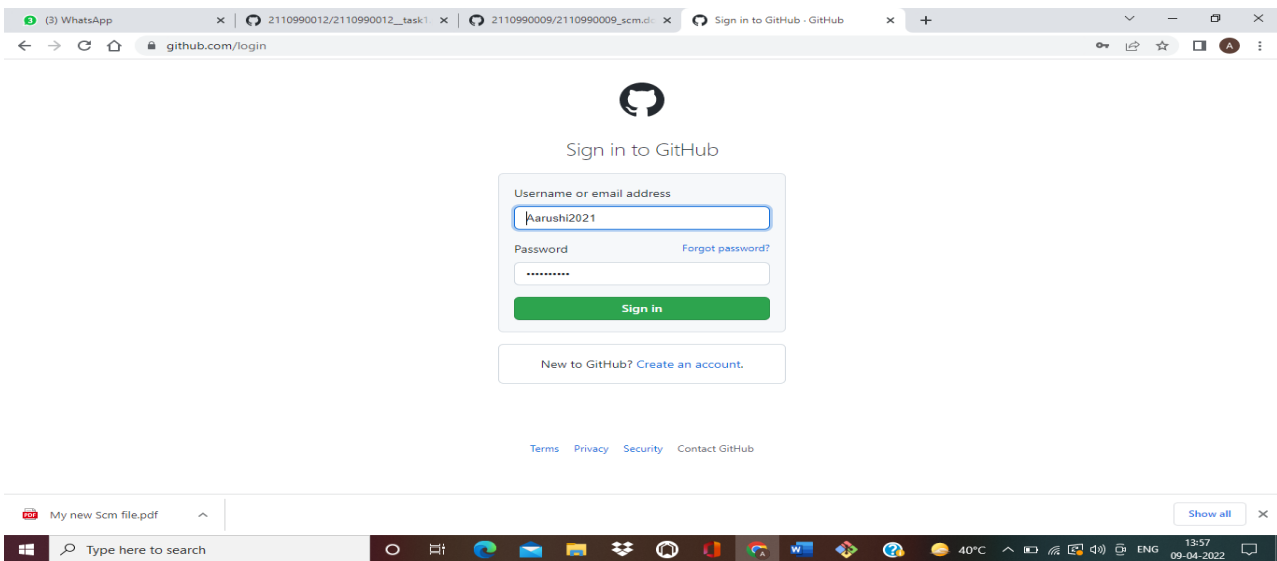
Step2 :-

Snapshots –

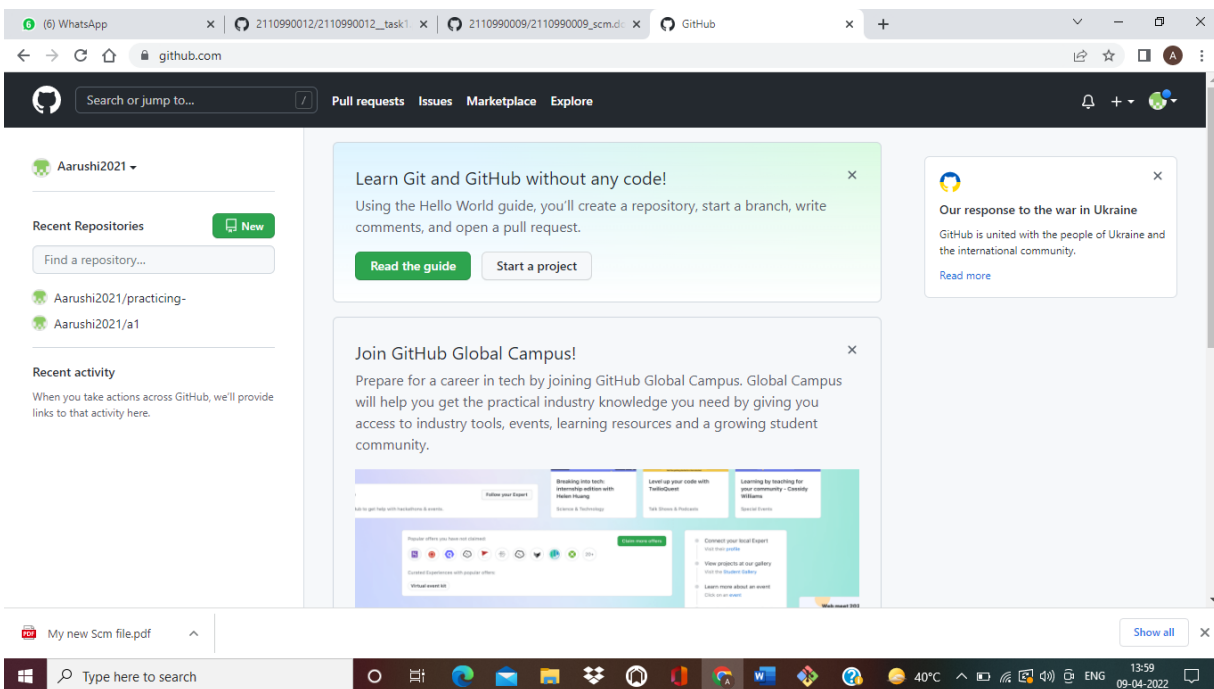


After visiting the link this type of interface will appear, if you already have account you can sign in and if not you can create.

Sign in into GIT-HUB :-



Interface of GitHub :-



To link GitHub account with Git bash –

For username:-

git config --global user.name “username in git-hub”

For user email:-

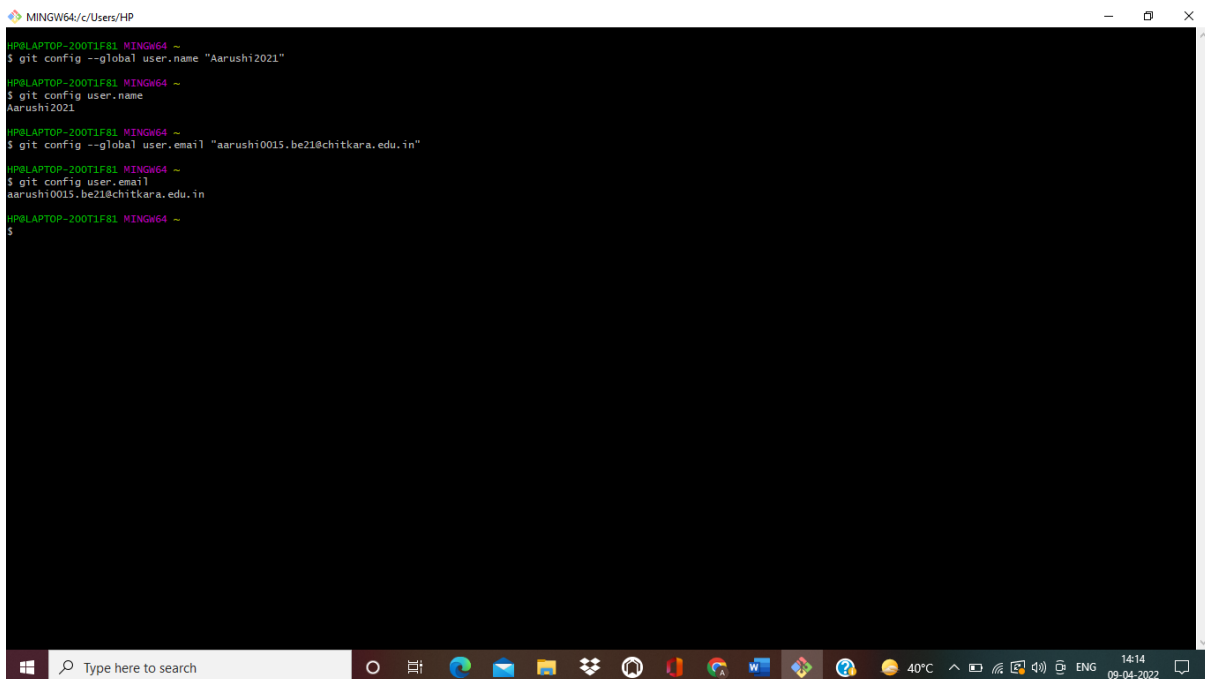
git config --global user.email “your email in git-hub”

To verify:-

git config user.name

git config user.email

Snapshot :-



```
MINGW64/c/Users/HP
HP\LAPTOP-200T1F81 MINGW64 ~
$ git config --global user.name "Aarushi2021"
HP\LAPTOP-200T1F81 MINGW64 ~
$ git config user.name
Aarushi2021
HP\LAPTOP-200T1F81 MINGW64 ~
$ git config --global user.email "aarushi0015.be21@chitkara.edu.in"
HP\LAPTOP-200T1F81 MINGW64 ~
$ git config user.email
aarushi0015.be21@chitkara.edu.in
HP\LAPTOP-200T1F81 MINGW64 ~
$
```

Experiment No. 03

Aim: Program to Generate log

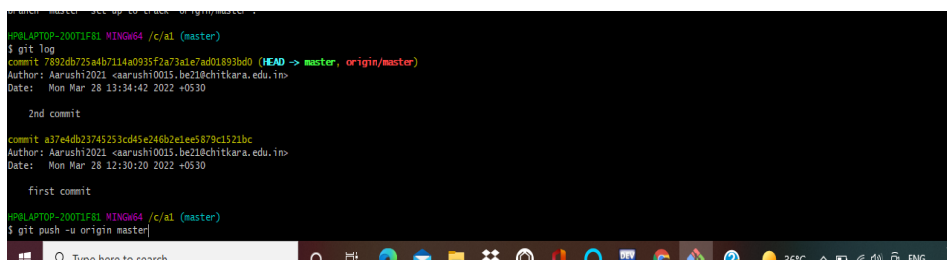
Theory:-

Logs -> Logs are nothing but the history which we can see in git by using the code git log.

It contains all the past commits, insertions and deletions in it which we can see any time.

Why logs -> Logs helps to check that what were the changes in the code or any other file and by whom. It also contains the number of insertions and deletions including at which time it was changed.

Snapshots –

A screenshot of a Windows terminal window with a dark background. The prompt is 'HPM\LAPTOP-20071F81 MINGW64 /c/al (master)'. The user has entered '\$ git log'. The output shows three commits in reverse chronological order. The top commit is 'commit 7892db725a4b714e0939f7a78a67ad01893bd0 (HEAD -> master, origin/master)' by 'Aarushi2021' on 'Mon Mar 28 13:34:42 2022 +0530'. Below it is '2nd commit' and then 'commit a37e4db23745253cd45c24462ee5879c1521bc' by 'Aarushi2021' on 'Mon Mar 28 12:30:20 2022 +0530'. The bottom entry is 'first commit'. At the bottom of the terminal, the user has entered '\$ git push -u origin master'. The Windows taskbar is visible at the bottom with various icons and a search bar.

Experiment No. 04

Aim: Create and visualize branches

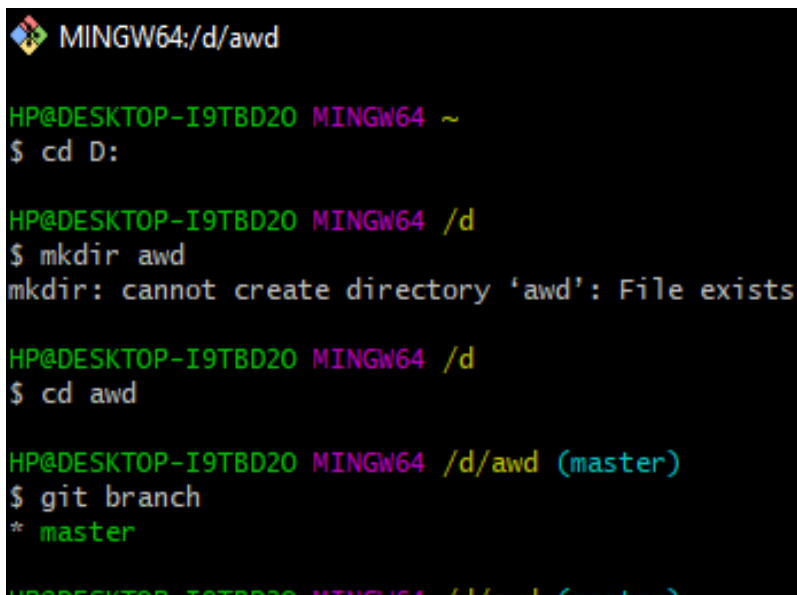
Create branches :-

The main branch in git is called as master branch. But we can make branches out of this main master branch. All the files present in master can be shown in branch but the file which are created in branch are not shown in master branch. We can also merge both the parent (master) and child (other branches).

Syntax:-

1. For creating a new branch git branch name of branch , by default it is master branch

Snapshots —



```
MINGW64:/d/awd
HP@DESKTOP-I9TBD20 MINGW64 ~
$ cd D:

HP@DESKTOP-I9TBD20 MINGW64 /d
$ mkdir awd
mkdir: cannot create directory 'awd': File exists

HP@DESKTOP-I9TBD20 MINGW64 /d
$ cd awd

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ git branch
* master
```

2. To change the present working branch.
git checkout name of branch.

```

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ git branch feature

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ git branch
  feature
* master

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ git checkout feature
Switched to branch 'feature'

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (feature)
$ git branch
* feature
  master

```

Visualizing branches :-

```

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (feature)
$ git log --oneline
50baca7 (HEAD -> feature, origin/master, master) object
6f58a90 static dec
6937fc7 constructors
d564cf4 class
7351c2a code
8c47134 use of strict
2d943bf code added
b5c488a func
5a49d63 to display prop of obj
fb9cd4b functions
c79caf9 alert
2da0f98 sum n avg of given series of nos.
02df71f comment
53c387f code added
031cc4f sum of odd nos.
715c172 code added
f5dd341 display the sum of series
bc0b07c code added
8a3cbf9 code
279f41e print odd nos. from 1 to 20
c938e1d code added
21ae6e8 print nos. from 1 to 20
bcb4cfe total bill
6ec9c64 code added
22e1faa let var
7be5958 index of array
5ee9e36 code added
8e26823 swaping of two nos.
1d2293b swaping two nos.
a5da5be to display grades
f95025d reverse a number

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (feature)
$

```

```
MINGW64/c:/a1
HPBLAPTOP-200TIF81 MINGW64 /c/a1
$ git add .
fatal: not a git repository (or any of the parent directories): .git

HPBLAPTOP-200TIF81 MINGW64 /c/a1
$ git init
Initialized empty Git repository in C:/a1/.git/

HPBLAPTOP-200TIF81 MINGW64 /c/a1 (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        first.cpp

nothing added to commit but untracked files present (use "git add" to track)

HPBLAPTOP-200TIF81 MINGW64 /c/a1 (master)
$ git add .
warning: LF will be replaced by CRLF in first.cpp.
The file will have its original line endings in your working directory

HPBLAPTOP-200TIF81 MINGW64 /c/a1 (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   first.cpp

HPBLAPTOP-200TIF81 MINGW64 /c/a1 (master)
$ git commit -m "first commit"
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.
```

```
MINGW64/c/a1
git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.
Fatal: unable to auto-detect email address (got 'HP@LAPTOP-200T1F81.(none)')

HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git config --global user.name "Aarushi2021"

HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git config --global user.email "aarushi0015.be21@chitkara.edu.in"

HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git commit -m "first commit"
[master (root-commit) a37e4db] first commit
1 file changed, 16 insertions(+)
create mode 100644 First.cpp

HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git log
commit a37e4db23745253cd45e246b2e1ee5879c1521bc (HEAD -> master)
Author: Aarushi2021 <aarushi0015.be21@chitkara.edu.in>
Date: Mon Mar 28 12:30:20 2022 +0530

    first commit

HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git add origin master
Fatal: pathspec 'origin' did not match any files

HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git remote origin master https://github.com/Aarushi2021/a1.git
error: Unknown subcommand: origin
usage: git remote [-v | --verbose]
or: git remote add [-t <branch>] [-m <master>] [--tags | --no-tags] [--mirror=<fetch|push>] <name> <url>
or: git remote rename <old> <new>
or: git remote remove <name>
or: git remote set-head <name> [-a | --auto | -d | --delete | <branch>]
or: git remote [-v | --verbose] show [-n] <name>
or: git remote prune [-n | --dry-run] <name>
or: git remote [-v | --verbose] update [-p | --prune] [(<group> | <remote>)...]
or: git remote set-branches [--add] <name> <branch>...
or: git remote get-url [--push] [--all] <name>
or: git remote set-url [--push] <name> <newurl> [<oldurl>]
or: git remote set-url --add <name> <newurl>
or: git remote set-url --delete <name> <url>

-v, --verbose    be verbose; must be placed before a subcommand
```

```

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (feature)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ git log --oneline
50baca7 (HEAD -> master, origin/master) object
6f58a90 static dec
6937fc7 constructors
d564cf4 class
7351c2a code
8c47134 use of strict
2d943bf code added
b5c488a func
5a49d63 to display prop of obj
fb9cd4b functions
c79caf9 alert
2da0f98 sum n avg of given series of nos.
02df71f comment
53c387f code added
031cc4f sum of odd nos.
715c172 code added
f5dd341 display the sum of series
bc0b07c code added
8a3cbf9 code
279f41e print odd nos. from 1 to 20
c938e1d code added
21ae6e8 print nos. from 1 to 20
bcb4cfe total bill
6ec9c64 code added
22e1faa let var
7be5958 index of array
5ee9e36 code added
8e26823 swaping of two nos.
1d2293b swaping two nos.
a5da5be to display grades
f95025d reverse a number

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ vi day3.html

HP@DESKTOP-I9TBD20 MINGW64 /d/awd (master)
$ git commit -m "console.log"
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:

```

Experiment No. 05

Aim: Git lifecycle description

Theory:

Stages in GIT Life Cycle -> Files in a Git project have various stages like Creation, Modification, Refactoring, and Deletion and so on. Irrespective of whether this project is tracked by Git or not, these phases are still prevalent. However, when a project is under Git version control system, they are present in three major Git states in addition to these basic ones. Here are the three Git states:

- Working directory
- Staging area
- Git directory

Working Directory ->

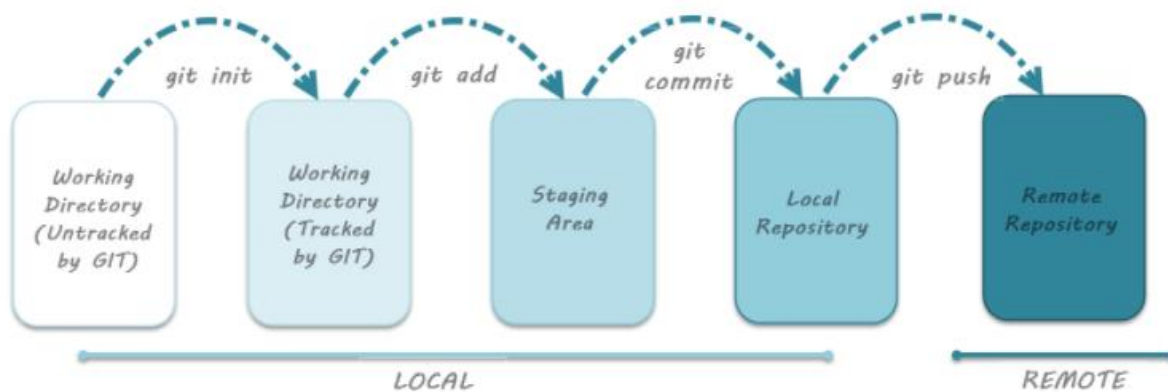
Consider a project residing in your local system. This project may or may not be tracked by Git. In either case, this project directory is called your Working directory.

Staging Area->Staging area is the playground where you group, add and organize the files to be committed to Git for tracking their versions.

Git Directory ->

Now that the files to be committed are grouped and ready in the staging area, we can commit these files. So, we commit this group of files along with a commit message explaining what is the commit about. Apart from commit message, this step also records the author and time of the commit. Now, a snapshot of the files in the commit is recorded by Git. The information related to this commit is stored in the Git directory.

Remote Repository-> means mirror or clone of the local Git repository in GitHub. And pushing means uploading the commits from local Git repository to remote repository hosted in GitHub.



Snapshots –

```

MINGW64/c/a1
HPBLAPTOP-200TIF81 MINGW64 ~
$ pwd
/c/Users/HP

HPBLAPTOP-200TIF81 MINGW64 ~
$ ls
'3D Objects'/      Links/              PrintHood@          'VirtualBox VMs'/
AppData/           'Local Settings'@  Recent@             aar/
'Application Data'@ Music/              'Saved Games'/'    aaru/
Contacts/          'My Documents'@   Searches/           ntuser.dat.LOG1
Cookies@           NTUSER.DAT        SendTo@             ntuser.dat.LOG2
Desktop/           NTUSER.DAT{7ddc01ba-2ac8-11ec-ac47-c0b75782bfc0}.TM.blf 'Start Menu'@      ntuser.ini
Documents/         NTUSER.DAT{7ddc01ba-2ac8-11ec-ac47-c0b75782bfc0}.TMCContainer00000000000000000001.regtrans-ms Templates@         'practice of course.ipynb'
Downloads/         NTUSER.DAT{7ddc01ba-2ac8-11ec-ac47-c0b75782bfc0}.TMCContainer00000000000000000002.regtrans-ms Untitled.ipynb     sae/
Favorites/         NetHood@          Untitled1.ipynb     untitled.txt
HELLO/            OneDrive/         Untitled2.ipynb
IntelGraphicsProfiles/ Pictures/          Videos/
  
```

```

HPBLAPTOP-200TIF81 MINGW64 ~
$ cd

HPBLAPTOP-200TIF81 MINGW64 ~
$ cd C:

HPBLAPTOP-200TIF81 MINGW64 /c
$ mkdir a1

HPBLAPTOP-200TIF81 MINGW64 /c
$ cd a1

HPBLAPTOP-200TIF81 MINGW64 /c/a1
$ vi first.cpp

HPBLAPTOP-200TIF81 MINGW64 /c/a1
$ cat first.cpp
//to get factorial of a no.

#include <iostream>
using namespace std;
int main(){
    int n,x=1;
    cin>>n;
    for(int i=1;i<=n;i++)
    {x= x*i;
    }
    cout<<x<<endl;
    cout<<n;
    return 0;
  
```

```
HP@LAPTOP-200T1F81 MINGW64 /c/a1
$ git add .
fatal: not a git repository (or any of the parent directories): .git
HP@LAPTOP-200T1F81 MINGW64 /c/a1
$ git init
Initialized empty Git repository in C:/a1/.git/
HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        first.cpp

nothing added to commit but untracked files present (use "git add" to track)
HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git add .
warning: LF will be replaced by CRLF in first.cpp.
The file will have its original line endings in your working directory
HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   first.cpp
HP@LAPTOP-200T1F81 MINGW64 /c/a1 (master)
$ git commit -m "first commit"
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.
```

Snapshots of some of the repositories

Overview Repositories 2 Projects Packages Stars 1

Find a repository... Type Language Sort New

a1 Public Starred
C++ 1 Updated 12 days ago

practicing- Private Star
C++ Updated 7 days ago

Aarushi2021
Edit profile

0 followers · 1 following
Joined 27 days ago

My new Scm file.pdf Show all

Type here to search

41°C 14:47 09-04-2022

Snapshot of the forked repo

master 1 branch 0 tags Go to file Add file Code

This branch is 1 commit ahead of Aarushi2021/a1.

aanchalsharma1024 first commit 169f88 10 days ago 10 commits

File	Description	Updated
factorial.cpp	first commit	10 days ago
ifelse.cpp	nested if	18 days ago
inputOutput.cpp	original code	18 days ago
maximum.cpp	maximum from 3 numbers	18 days ago
sizeofdatatype.cpp	size of type modifiers	18 days ago

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

About
No description, website, or topics provided.
0 stars
0 watching
3 forks

Releases
No releases published
Create a new release

Packages
No packages published
Publish your first package

Languages
C++ 100.0%