

Experiment -1.3

Creating branches with GitHub

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Branch:	CSE(DEVOPS)	Section/Group:	22BCD-1/B
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Subject Name:	Git and GitHub	Subject Code:	22CSH-293

- 1. Aim/Overview of the practical:** To create and explore pull and push request.
- 2. Task to be done:** Examine the Git configurations, how to create branches, resolve conflicts, resetting, commits, merge techniques etc.
- 3. Steps for experiment:**
 - 1) Open Git Bash on your system.
 - 2) Using **cd** command move to the directory where you want to work on existing repository or create new one.
 - 3) Initialize the repository using **git init** command.

```
Last login: Wed Feb 21 13:09:30 on console
tarushchauhan@Tarushs-MacBook-Air ~ % git init
Reinitialized existing Git repository in /Users/tarushchauhan/.git/
tarushchauhan@Tarushs-MacBook-Air ~ % git config --global user.name "Tarushchauhan73"
```

- 4) Login using **git config** and enter your credentials.

```
tarushchauhan@Tarushs-MacBook-Air ~ % git init
Reinitialized existing Git repository in /Users/tarushchauhan/.git/
tarushchauhan@Tarushs-MacBook-Air ~ % git config --global user.name "Tarushchauhan73"
tarushchauhan@Tarushs-MacBook-Air ~ % git config --global user.email "tarushchauhan19@gmail.com"
tarushchauhan@Tarushs-MacBook-Air ~ % git clone https://github.com/Tarushchauhan73/experiment3.
git
Cloning into 'experiment3'...
remote: Enumerating objects: 4, done.
```

5) Using **git clone** and link to your repository on GitHub make a local copy of repository in current directory.

```
tarushchauhan@Tarushs-MacBook-Air ~ % git clone https://github.com/Tarushchauhan73/experiment3.git
Cloning into 'experiment3'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 12.74 KiB | 12.74 MiB/s, done.
```

6) Using **ls** command check the contents of the local repository created using clone command.

7) Now using **git pull** command check to if local repository is up to date or not and also connect remote repository to local repository.

```
tarushchauhan@Tarushs-MacBook-Air ~ % cd experiment3
tarushchauhan@Tarushs-MacBook-Air experiment3 % git pull origin main
From https://github.com/Tarushchauhan73/experiment3
* branch      main      -> FETCH_HEAD
Already up to date.
tarushchauhan@Tarushs-MacBook-Air experiment3 % touch f1 f2 f3
tarushchauhan@Tarushs-MacBook-Air experiment3 % vi f1
```

8). Create text files using **touch** command; Enter text in any file using **vi** command.

9) Check the contents of file using **cat** followed by name of file.

```
tarushchauhan@Tarushs-MacBook-Air experiment3 % touch f1 f2 f3
tarushchauhan@Tarushs-MacBook-Air experiment3 % vi f1
tarushchauhan@Tarushs-MacBook-Air experiment3 % cat f1
hello i am tarush
```

10) Create a new branch using **git checkout -b** command and switch current working directory.

11) Using **ls** command to check and match the contents of file with main branch.

```
tarushchauhan@Tarushs-MacBook-Air experiment3 % git checkout -b test_exp3
Switched to a new branch 'test_exp3'
tarushchauhan@Tarushs-MacBook-Air experiment3 % ls
LICENSE          README.md        f1              f2              f3
```

12) Now checkout to main branch to add and commit the file along with the contents using **git add** and **git commit**.

```
tarushchauhan@Tarushs-MacBook-Air experiment3 % git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
tarushchauhan@Tarushs-MacBook-Air experiment3 % git add .
tarushchauhan@Tarushs-MacBook-Air experiment3 % git commit -m "version1"
[main 0e1f3fb] version1
3 files changed, 1 insertion(+)
create mode 100644 f1
create mode 100644 f2
create mode 100644 f3
```

13) Now switch back to branch and make changes to the same text file as used in main branch using **vi** command.

```
create mode 100644 f3
tarushchauhan@Tarushs-MacBook-Air experiment3 % vi f1
tarushchauhan@Tarushs-MacBook-Air experiment3 % ls
LICENSE          README.md        f1              f2              f3
tarushchauhan@Tarushs-MacBook-Air experiment3 % cat f1
hello i am tarush
my name is tarush
tarushchauhan@Tarushs-MacBook-Air experiment3 % git pull
```

14) You can check if the contents have been updated or not using **cat** command.

15) Now add the file to staging area and commit the file in branch.

```
tarushchauhan@Tarushs-MacBook-Air experiment3 % git add .
tarushchauhan@Tarushs-MacBook-Air experiment3 % git commit -m "version2"
[main ea8ba77] version2
1 file changed, 1 insertion(+)
tarushchauhan@Tarushs-MacBook-Air experiment3 % git checkout main
Already on 'main'
Your branch is ahead of 'origin/main' by 2 commits
```

16) Now switch back to the main branch and merge the changed file contents into main branch using **git merge**.

```
merge: test - not something we can merge
tarushchauhan@Tarushs-MacBook-Air experiment3 % git merge test_exp3
Already up to date.
tarushchauhan@Tarushs-MacBook-Air experiment3 % cat f1
hello i am tarush
my name is tarush
tarushchauhan@Tarushs-MacBook-Air experiment3 % git push origin main
Username for 'https://github.com': Tarushchauhan73
Password for 'https://Tarushchauhan73@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/en/get-started/getting-started-with-git/about-remote
```

17) Now check the contents of file in main branch using **cat** command to see the changes after merging.

```
merge: test - not something we can merge
tarushchauhan@Tarushs-MacBook-Air experiment3 % git merge test_exp3
Already up to date.
tarushchauhan@Tarushs-MacBook-Air experiment3 % cat f1
hello i am tarush
my name is tarush
tarushchauhan@Tarushs-MacBook-Air experiment3 % git push origin main
Username for 'https://github.com': Tarushchauhan73
Password for 'https://Tarushchauhan73@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/en/get-started/getting-started-with-git/about-remote
```

18) Now we have to push these changes from local repository to remote repository using git pull command.

```
tarushchauhan@Tarushs-MacBook-Air experiment3 % cat f1
hello i am tarush
my name is tarush
tarushchauhan@Tarushs-MacBook-Air experiment3 % git push origin main
Username for 'https://github.com': Tarushchauhan73
Password for 'https://Tarushchauhan73@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/en/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Tarushchauhan73/experiment3.git/'
tarushchauhan@Tarushs-MacBook-Air experiment3 % git push origin main
Username for 'https://github.com': Tarushchauhan73
Password for 'https://Tarushchauhan73@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/en/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Tarushchauhan73/experiment3.git/'
tarushchauhan@Tarushs-MacBook-Air experiment3 % git pull
Already up to date.
tarushchauhan@Tarushs-MacBook-Air experiment3 % git push origin main
Username for 'https://github.com': Tarushchauhan73
Password for 'https://Tarushchauhan73@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/en/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Tarushchauhan73/experiment3.git/'
tarushchauhan@Tarushs-MacBook-Air experiment3 %
```

19) Now authenticate git bash access to GitHub to push changes to the repository.

20) Now type git pull on git bash to get the updated repository in your cloned local repository.

```
tarushchauhan@Tarushs-MacBook-Air experiment3 % git pull
Already up to date.
tarushchauhan@Tarushs-MacBook-Air experiment3 % git push origin main
Username for 'https://github.com': Tarushchauhan73
Password for 'https://Tarushchauhan73@github.com':
```

21) Now using ls command check if the files in local and remote repository are same.

22) Using cat command check to see if the contents of file updated in GitHub remote repository are showing in local repository also.

23) In Mac there Is an ssh certificate permission occur while pushing file to remote repo.(in SSH we cant push our file).

Learning outcomes (What I have learnt):

1. Learnt about GitHub and Git.
2. Learnt about commit, merge and add commands.
3. Learnt about various git commands that can be applied on Git Bash.
4. Learnt about repositories, branches and local and remote repository.
5. Learnt about how to pull request and push in git bash.

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.			