Experiment -2.1

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Section/Group: 22BCD-1/A
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Subject Name: Git and Hub
Subject Code: 22CSH-293

1. **Aim/Overview of the practical:** Editing a file and committing changes on GitHub.

2. **Software Used:** Git Bash, GitHub.

3. **Steps for experiment/practical:**

- Create or clone a repository on your local machine and open GIT BASH.
- Move to the directory using the **cd** command.

```
chaya@Chayan MINGW64 ~ (master)
$ git init
Reinitialized existing Git repository in C:/Users/chaya/.git/

chaya@Chayan MINGW64 ~ (master)
$ mkdir exp-2.1

chaya@Chayan MINGW64 ~ (master)
$ cd exp-2.1

chaya@Chayan MINGW64 ~/exp-2.1 (master)
$ git clone https://github.com/Chayan-12/new-github.git
Cloning into 'new-github'...
remote: Enumerating objects: 22, done.
remote: Counting objects: 100% (22/22), done.
remote: Compressing objects: 100% (16/16), done.
remote: Total 22 (delta 4), reused 9 (delta 2), pack-reused 0
Receiving objects: 100% (22/22), 18.20 KiB | 152.00 KiB/s, done.
Resolving deltas: 100% (4/4), done.

chaya@Chayan MINGW64 ~/exp-2.1 (master)
$ cd new-github
```

- Create or open a file in the master or main branch, eg, **exp. c** and add some text to the file.

```
chaya@Chayan MINGW64 ~/exp-2.1 (master)
$ cd new-github

chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ vi exp.c
```

- Add the file to the staging area using **git add** and then commit the changes using the **git commit** command.

```
chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git add exp.c

chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git commit -m "Commited exp.c"
[main 093c449] Commited exp.c
 1 file changed, 6 insertions(+)
 create mode 100644 exp.c
```

- Push the changes to the remote repo using the command **git push**.

```
chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 347 bytes | 347.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/Chayan-12/new-github.git
   6a18de4..093c449  main -> main

chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
```

- You will be able to see the changes in the remote repository.

- Now, make some changes in the file in the remote repository and pull those changes in the local repository.
- Create a new branch and check in using the **git checkout -b** command, eg, **change1**.

- Open the **exp. c** on the **vi** editor and make some changes.

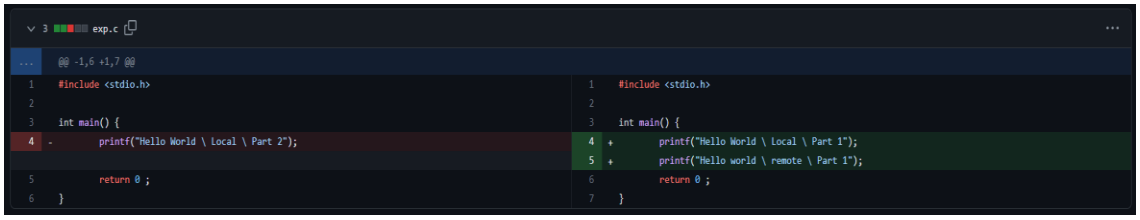
```
chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git checkout -b change1
Switched to a new branch 'change1'

chaya@Chayan MINGW64 ~/exp-2.1/new-github (change1)
$ vi exp.c

chaya@Chayan MINGW64 ~/exp-2.1/new-github (change1)
$ git add exp.c

chaya@Chayan MINGW64 ~/exp-2.1/new-github (change1)
$ git commit -m "changed exp.c in change1 branch"
[change1 d2efe64] changed exp.c in change1 branch
 1 file changed, 2 insertions(+), 1 deletion(-)
```

- Merge the changes made in the **change1** branch with the **main** branch and resolve the conflicts manually if necessary.

- Push the **main** and **change1** branch onto the remote repository.

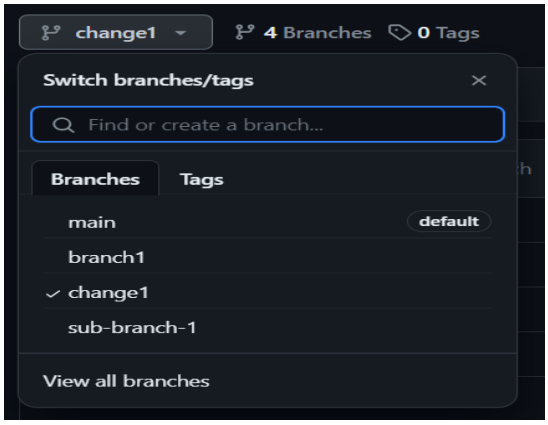
```
chaya@Chayan MINGW64 ~/exp-2.1/new-github (change1)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git merge change1
Updating 093c449..d2efe64
Fast-forward
 exp.c | 3 ++-
 1 file changed, 2 insertions(+), 1 deletion(-)

chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 363 bytes | 363.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/Chayan-12/new-github.git
   093c449..d2efe64  main -> main

chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git push origin change1
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'change1' on GitHub by visiting:
remote:      https://github.com/Chayan-12/new-github/pull/new/change1
remote:
To https://github.com/Chayan-12/new-github.git
 * [new branch]      change1 -> change1
```

- You will be able to see the new changes in the remote repository.

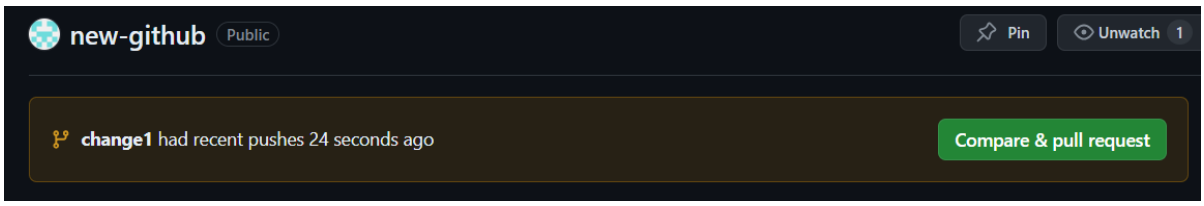


(local) (remote)

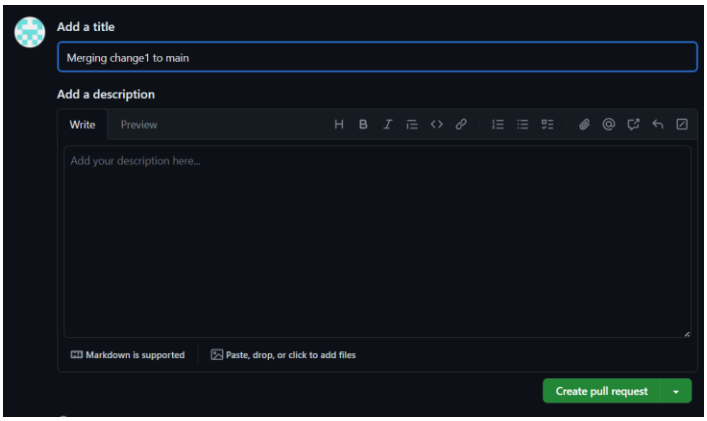
- Now, Go to Git Hub, open the repository move to the **change1** branch and make some changes in a file.

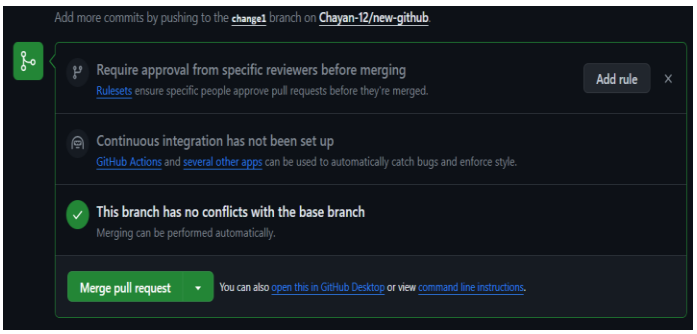


- Commit the changes and move to the **main** branch. Click on the **Compare & Pull request**.

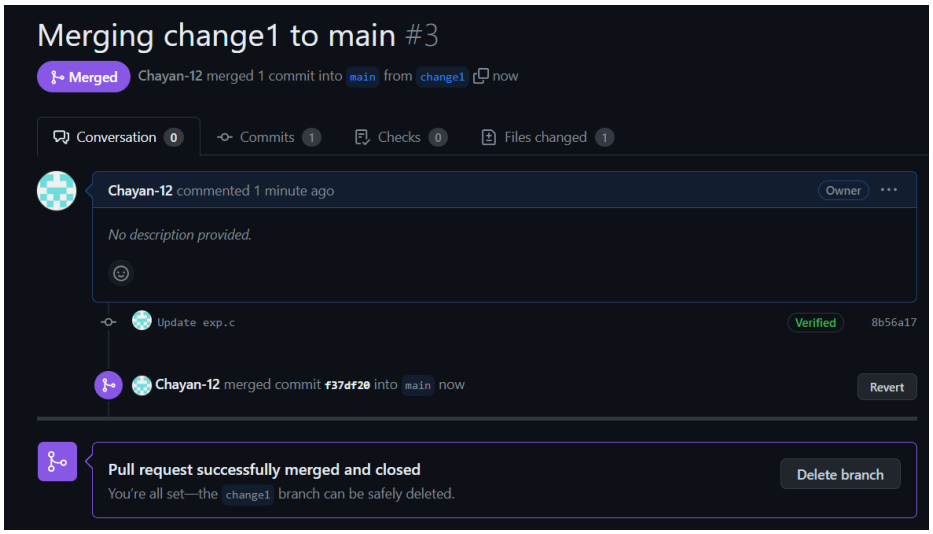


- **Create the pull request,** resolve the merge conflicts (if any) and then **merge pull request**.





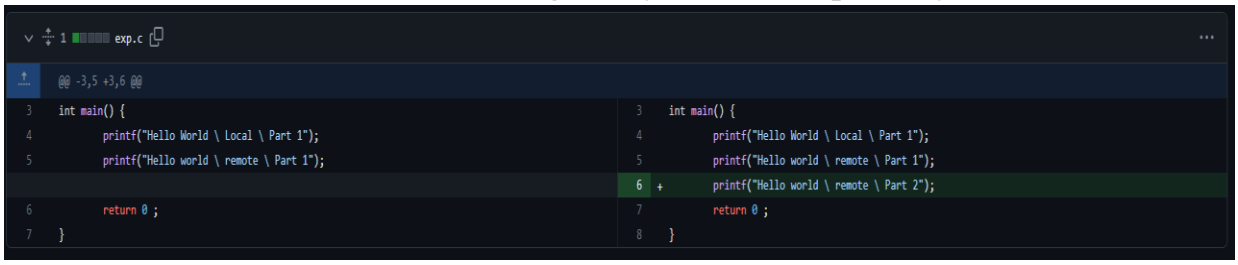
- After the merging, you may choose to delete your branch, i.e, **change1**



- Now, pull the changes to the local repository using **git pull**.

```
chaya@Chayan MINGW64 ~/exp-2.1/new-github (main)
$ git pull origin main
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (4/4), 1.80 KiB | 230.00 KiB/s, done.
From https://github.com/Chayan-12/new-github
 * branch            main       -> FETCH_HEAD
   d2efe64..f37df20  main       -> origin/main
Updating d2efe64..f37df20
Fast-forward
 exp.c | 1 +
 1 file changed, 1 insertion(+)
```

- You will be able to see the changes in your local repository.



(remote) (local)

4. Result/Output/Writing Summary:

In this experiment, we have edited a file in the local repository and shown the changes on the remote repository and vice versa. For this purpose, we have made use of both Git and GitHub.

Learning outcomes (What I have learnt):

1. Learnt how to create a branch.

2. Learnt how to push the changes to the remote repository.

3. Learnt how to pull the changes from the remote repository.

4. Learnt to merge two branches.

5. Learnt how to resolve merge conflicts.

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.			