Experiment -3.1

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Branch: CSE-DevOps   **Section/Group: 22BCD-1/A**

Semester: 4TH   **Date of Performance: 06/03/2024**

Subject Name: Git & Hub   **Subject Code: 22CSH-293**

1. Aim/Overview of the practical: Compare the changes in the Git Repository.

2. Software used: Git Bash and GitHub.

3. Hardware Used: Computer system.

4. Steps for experiment:

1. Create a file on local and open with Git Bash.

2. Create a repository on GitHub and copy the http link.

3. Now open the file "checkdiff1.cpp" using "vi filename" and edit the file.

```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ vi checkdiff1.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ cat checkdiff1.cpp
#include <iostream>

int main() {
    std::string name = "Alice";
    std::cout << "The name is: " << name << std::endl;

    return 0;
}
```

4. Now add and commit the file using "git add" and "git commit -message".

```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git add checkdiff1.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git commit -m "Diff file 1"
[main ffbc04d] Diff file 1
 1 file changed, 9 insertions(+)
 create mode 100644 checkdiff1.cpp
```

5. Now open the file "checkdiff2.cpp" using "vi filename" and edit the file.

```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ vi checkdiff2.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ cat checkdiff2.cpp
#include <iostream>

int main() {
    std::string firstName = "Alice";
    std::string secondName = "Bob";

    std::cout << "The first name is: " << firstName << std::endl;
    std::cout << "The second name is: " << secondName << std::endl;

    return 0;
}
```

6. Now add and commit this file.

```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git add checkdiff2.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git commit -m "Diff file 2"
[main 7221284] Diff file 2
 1 file changed, 12 insertions(+)
 create mode 100644 checkdiff2.cpp
```

7. Now show the git log and draw git diff using "git diff hash1 hash2"

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```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git log
commit 72212848e0d410d27dbea704482b5bb90ca1ed8f (HEAD -> main)
Author: Ayush Pandey <ayushpandey2442@gmail.com>
Date:   Tue Apr 2 23:04:32 2024 +0530

    Diff file 2

commit ffbc04dacb293685652c0c102ad8851496a7c200
Author: Ayush Pandey <ayushpandey2442@gmail.com>
Date:   Tue Apr 2 23:01:00 2024 +0530

    Diff file 1

commit fc8cc21d879e78bcd78af3535eb68993ceb3a354
Author: Ayush Pandey <ayushpandey2442@gmail.com>
Date:   Tue Apr 2 22:55:59 2024 +0530

    Commit for git diff

commit 6e6700d6194a03f7b0dd5492282662411ffee44a (origin/main, origin/HEAD)
Merge: be69847 b6d5ede
Author: Ayush Pandey <ayushpandey2442@gmail.com>
Date:   Tue Apr 2 21:38:25 2024 +0530

    Merge branch 'change'

commit b6d5ede87414363f28760ad87b52be0c1f11b243 (origin/change, change)
Author: Ayush Pandey <ayushpandey2442@gmail.com>
Date:   Tue Apr 2 21:37:20 2024 +0530

    Minor change

commit be69847fbc742c7ba7dafdd853414281eac2e2ab
Author: Ayush Pandey <ayushpandey2442@gmail.com>
Date:   Tue Apr 2 21:32:37 2024 +0530

    Print single number
```

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```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git diff ffbc04dacb293685652c0c102ad8851496a7c200 72212848e0d410d27dbea704482b5bb90ca1ed8f
diff --git a/checkdiff2.cpp b/checkdiff2.cpp
new file mode 100644
index 0000000..e35b45a
--- /dev/null
+++ b/checkdiff2.cpp
@@ -0,0 +1,12 @@
+#include <iostream>
+
+int main() {
+    std::string firstName = "Alice";
+    std::string secondName = "Bob";
+
+    std::cout << "The first name is: " << firstName << std::endl;
+    std::cout << "The second name is: " << secondName << std::endl;
+
+    return 0;
+}
+
```

7. Now edit the file and don't add this file to staging area and use git diff.

```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ vi checkdiff1.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git diff checkdiff1.cpp checkdiff2.cpp
diff --git a/checkdiff1.cpp b/checkdiff1.cpp
index 8d1be7a..289c58a 100644
--- a/checkdiff1.cpp
+++ b/checkdiff1.cpp
@@ -1,3 +1,5 @@
+// This is the extra change done in Diff file 1
+
 #include <iostream>

 int main() {
```

8. Now create a branch using "git checkout -b diffbranch".

9. Now edit file and add it to stagging area and commit this file using "git add" and "git commit -m message".

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```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git checkout -b diffbranch
Switched to a new branch 'diffbranch'

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (diffbranch)
$ vi checkdiff1.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (diffbranch)
$ git add checkdiff1.cpp

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (diffbranch)
$ git commit -m "Commit in diff brach"
[diffbranch 404c48f] Commit in diff brach
 1 file changed, 4 insertions(+)
```

9. Now Move to main branch by "git checkout main" and run the git diff command.

```
Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (diffbranch)
$ git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 3 commits.
  (use "git push" to publish your local commits)

Ayush Pandey@Ayush MINGW64 /d/Git/Prac_Class (main)
$ git diff main diffbranch
diff --git a/checkdiff1.cpp b/checkdiff1.cpp
index 8d1be7a..9002b31 100644
--- a/checkdiff1.cpp
+++ b/checkdiff1.cpp
@@ -1,3 +1,7 @@
+// This is the extra change done in Diff file 1
+
+// This changes are made in Diff Branch
+
 #include <iostream>

 int main() {
```

5. Result/Output/Writing Summary:

In this experiment we have learn about diff and associated commands with git diff.

Learning outcomes (What I have learnt):

1. Learnt the difference between git merge and pull request.

2. Learnt how to make the merge

3. Learnt about type of merging.

4. Learnt about merge conflict.

5. Also learnt about ort merging.

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.			