AMITY INSTITUTE OF ENGINEERING

AND TECHNOLOGY

Course Code : CSE2015

"SOURCE CODE MANAGEMENT"

LABORARTORY RECORD

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SUBMITTED TO:SUBMITTED BY:

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S.N	Exercise
1.	Git Installation, Installation verification, Project setup, Git Configuration
2.	link GitHub and create a file
3.	creating file with committing
4.	pushing file to git hub

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INDEX

5.	creating a file with branch and pushing to git
6.	merging of branch

01. Git Installation, Installation verification,Project setup, GitConfiguration.

 1. Git Installation :

   # Steps used for installation

     Step1 : Download Git for Windows from the official site:

https://git-scm.com/downloads

     Step 2 : Once the Git is downloaded ensure that Git Bash is installed.

Step 3 : After installing open Git bash in search option of the laptop. Then the window

will open.

1. Installation verification :

Command

$ git --version

Output

git version 2.48.1.windows.1

2. Project setup:
#commands
$ mkdir scm_lab_1
$ cd desktop
$git init

#output

```
Admin@LAPTOP-F2LN4P88 MINGW64 ~/YashwanthReddy
$ git init
Initialized empty Git repository in C:/Users/Admin/YashwanthReddy/.git/
```

3. Git Configuration :

Commands

$ git config user.name "Tejaswini1983"

$ git config user.email "tejaswini.s1@s.amity.edu"

 # Verification Commands and Outputs

$ git config user.name

11Yashwanth

$ git config user.email

Yashwanth.c@s.amity.edu

02.link GitHub andcreate a file

 #   Command

$pwd $cd ..

$ls $cd file

$mkdir file

$git init

$vi file

text something press I and text something and then enter :wq

$cat file

#output
$ls --- to see list of files

```
$ ls
'$RECYCLE.BIN'/            'Important Documents'/          file/
'Admission - Amity CS'/  'System Volume Information'/
```

$cat file --- to display

```
Admin@LAPTOP-F2LN4P88 MINGW64 ~/YashwanthReddy
$ cat file
 Yashwanth Reddy C
```

03. creating file with committing

Command $pwd
$cd ..
$ls
$cd file
$mkdir file
$git init
$vi file
text something press I and text something and then enter :wq
$cat file
$vi file
$git add .
$git commit -m"commit"
$cat file

#output
$ls --- to see list of files

```
$ ls
'$RECYCLE.BIN'/            'Important Documents'/          file/
'Admission - Amity CS'/  'System Volume Information'/
```

$cat file --- to display

```
Admin@LAPTOP-F2LN4P88 MINGW64 ~/YashwanthReddy
$ cat file
 Yashwanth Reddy C
```

$git add .

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'h', LF will be replaced by CRLF the next time Git touches it
```

$git commit -m"commit"

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git commit -m "Change in Readme file"
[master 1e6617c] Change in Readme file
 2 files changed, 140 insertions(+), 1 deletion(-)
 create mode 100644 h
```

04.pushing file to git hub

Command $pwd
$cd ..
$ls
$cd file
$mkdir file
$git init
$vi file
text something press I and text something and then enter :wq
$cat file
$vi file
$git add .

   $git commit -m"commit"

$cat file
$git remote
$git remote add file https://github.com/Tejaswini1983/FINA.git
$git push -u file master

   #output
   $ls --- to see list of files

```
$ ls
'$RECYCLE.BIN'/           'Important Documents'/        file/
'Admission - Amity CS'/   'System Volume Information'/
```

$cat file --- to display

```
Admin@LAPTOP-F2LN4P88 MINGW64 ~/YashwanthReddy
$ cat file
 Yashwanth Reddy C
```

$git add .

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'h', LF will be replaced by CRLF the next time Git touches it
```

$git commit -m"commit"

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git commit -m "Change in Readme file"
[master 1e6617c] Change in Readme file
 2 files changed, 140 insertions(+), 1 deletion(-)
 create mode 100644 h
```

$cat file

```
Admin@LAPTOP-F2LN4P88 MINGW64 ~/YashwanthReddy
$ cat file
 Yashwanth Reddy C
```

$git push -u file1 master

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git push -u origin master
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 2 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1.65 KiB | 564.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/22Yashwanth/Project-
   2ef20df..1e6617c  master -> master
branch 'master' set up to track 'origin/master'.
```

05.creating a file with branch and pushing to git

Command

$pwd

$cd .. $ls

$cd file2

$mkdir file

$git init
$vi file2
text something press I and text something and then enter :wq
$cat file2
$vi file2
$git add .
$git commit -m"commit"

$cat file2

$vi file2

$git add .

$git commit -m"commit1"
$cat file2
$git branch
$git branch test
$git checkout test
$git remote
$git remote add file2https://github.com/Tejaswini1983/project-final.git
$git push -u file2 master

#output
$ls --- to see list of files

```
$ ls
file1
```

$cat file2amity --- to display

```
$ cat file1
amity
cse
```

$git add .

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'h', LF will be replaced by CRLF the next time Git touches it
```

$git commit -m"commit"

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git commit -m "Change in Readme file"
[master 1e6617c] Change in Readme file
 2 files changed, 140 insertions(+), 1 deletion(-)
 create mode 100644 h
```

$cat file2

```
$ cat file1
amity
cse
phy
c
c++
python
```

$git push -u file2 master

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git push -u origin master
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 2 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1.65 KiB | 564.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/22Yashwanth/Project-
   2ef20df..1e6617c  master -> master
branch 'master' set up to track 'origin/master'.
```

06.merging of branch

Commands :

$ pwd
$ mkdir demo
$ cd demo
$ git init
$ nano README.md
   1234
$ git add README.md
$ git commit -m "1234 to README"
$ git checkout
$ ls -al
$ cat README.md
$ nano README.md
   12345678
$ cat README.md
$ git add README.md
$ git commit -m "+5678 to README"
$ git checkout master
$ cat README.md
$ nano README.md
   1234910
$ cat README.md
$ git add README.md
$ git commit -m "+910 to README"
$ git log –oneline
$ git checkout b1

Output :

$ git init
```
Initialized empty Git repository in C:/Users/SAIAKSHAYA/.git/
```

$ git commit -m "1234 to README.md"
```
[master (root-commit) 0743c44] 1234 to README.md
 1 file changed, 2 insertions(+)
 create mode 100644 README.md
```

$ git checkout -b b1
```
Switched to a new branch 'b1'
```

$ git commit -m "+5678 to README.md"

```
[b1 9f1c5d7] +5678 to README.md
 1 file changed, 1 insertion(+), 1 deletion(-)
```

$ git checkout master
```
Switched to branch 'master'
```

$ git commit -m "+910 to README.md"
```
[master 3f30e0a] +910 to README.md
 1 file changed, 1 insertion(+), 1 deletion(-)
```

Potential Merge Conflict :

# Commands :
$ git branch
$ git checkout master
$ git merge b1

# Output :
$ git merge b1
```
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Automatic merge failed; fix conflicts and then commit the result.
```

Branches made

```
Raghu@Rocky MINGW64 /c/SCM (master)
$ git branch
* master
  y1
  y2
  y3
  y4
```

Resolving Conflicts :

# Commands :
$ nano README.md
<<<<HEAD
    1234910

    12345678
>>>>b1
$ cat README.md
$ git add README.md
$ git commit -m "resolve conflict : 12345678910 to README.md"
$ git branch
$ git merge b1
$ git branch -d b1
$ git branch
$ git log –oneline

# Output :
$ cat README.md

```
<<<<<<< HEAD
1234910
=======
12345678
>>>>>>> b1
```

$ git commit -m "resolve conflict : 12345678910 to README.md"

```
[master 60403cc] resolve conflict : 12345678910 to README.md
```

$ git log

```
MINGW64:/c/SCM                                                              —  □  ×
Raghu@Rocky MINGW64 /c/SCM (master)
$ git log
commit 1e6617c1ae20501706b3035269d3c4a269c2142d (HEAD -> master, origin/master)
Author: 22Yashwanth <yashwanth.c@s.amity.edu>
Date:   Wed Jun 4 18:06:38 2025 +0530

    Change in Readme file

commit 2ef20df68ef405dce0405cf51e8901cf46c8c0f3
Merge: cee0be1 c525ac9
Author: 22Yashwanth <yashwanth.c@s.amity.edu>
Date:   Mon Jun 2 12:35:14 2025 +0530

    Merge branch 'y4'

commit cee0be1154da148f13cf1e18b68ae9fc8456444c
Merge: 99c906e 7f295f8
Author: 22Yashwanth <yashwanth.c@s.amity.edu>
Date:   Mon Jun 2 12:35:06 2025 +0530

    Merge branch 'y3'

commit 99c906e2af80dfc4efd5e23e0c5096690a74b7cf
Merge: 5271f1a 9d1e9e4
Author: 22Yashwanth <yashwanth.c@s.amity.edu>
Date:   Mon Jun 2 12:34:58 2025 +0530

    Merge branch 'y2'

commit 5271f1a34ebbf6810f3a6e24d38e5106f84c4610
Merge: dba3762 4df6ac8
Author: 22Yashwanth <yashwanth.c@s.amity.edu>
Date:   Mon Jun 2 12:34:49 2025 +0530

    Merge branch 'y1'

commit c525ac9a654896a8c7119f296957859a754a34b5 (origin/y4, y4)
Merge: d396490 5e3135b
Author: Yashwanth Reddy C <yashwanth.c@s.amity.edu>
Date:   Mon Jun 2 12:24:15 2025 +0530

    Merge pull request #4 from 13chethan2006/y4

    modified contact.html

commit 5e3135b475f2bf67465929ef9cf512b4c3138a59
Author: sadeeq650 <shaik.sadeeq@s.amity.edu>
Date:   Mon Jun 2 12:23:47 2025 +0530

    modified contact.html

commit 7f295f83e2309b72bf168d779e8a9d8cdba45405 (origin/y3, y3)
Merge: a5f0604 ab31008
```

Learning Outcomes:
1. Understanding different Git merge strategies.
2. Practicing branch merging techniques.
3. Recognizing when different merge approaches are used.

Conclusion :

Merging is a fundamental Git operation that allows developers to combine work from different branches, enabling parallel development and collaborative workflows.