

Git Hands-on Labs 1 to 5

Lab 1: Git Configuration and Setup

```
MINGW64/c/Users/SEC
SEC@VELAN-85131 MINGW64 ~ (master)
$ git --version
git version 2.50.1.windows.1
SEC@VELAN-85131 MINGW64 ~ (master)
$ git config --global user.name "VELANDHANANJAYAN"
SEC@VELAN-85131 MINGW64 ~ (master)
$ git config --global user.email "aappuvelan@gmail.com"
SEC@VELAN-85131 MINGW64 ~ (master)
$ git config --global --list
user.name=Velan
user.email=aappuvelan@gmail.com
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
filter.lfs.clean=git-lfs clean -- %f
SEC@VELAN-85131 MINGW64 ~ (master)
$
```

Lab 2: Create .gitignore and ignore files/folders

```
SEC@VELAN-85131 MINGW64 ~ (master)
$ which notepad++
which: no notepad++ in (/c:/Users/SEC/bin:/c:/Users/SEC/bin:/usr/local/bin:/usr/bin:/bin:/mingw64/bin:/usr/bin:/c:/Users/SEC/bin:/c:/Program Files/Google/Chrome/Application:/c:/Program Files/Common Files/Oracle/Java/javapath:/c:/Program Files (x86)/VMware/VMware Workstation/bin:/c:/WINDOWS/system32:/c:/WINDOWS:/c:/WINDOWS/System32/wbem:/c:/WINDOWS/System32/windowsPowerShell/v1.0:/c:/WINDOWS/System32/openssh:/c:/Program Files/PUTTY:/cmd:/c:/Program Files/nodejs:/c:/ProgramData/chocolatey/bin:/c:/Program Files/dotnet:/c:/Program Files/Microsoft SQL Server/150/Tools/Binn:/c:/Program Files/Microsoft SQL Server/Client SDK/ODBC/170/Tools/Binn:/c:/Program Files/MySQL/MySQL Shell 9.4/bin:/c:/Users/SEC/AppData/Local/Programs/Python/Python313/Scripts:/c:/Users/SEC/AppData/Local/Programs/Python/Python313:/c:/Users/SEC/AppData/Local/Programs/Python/Python311/Scripts:/c:/Users/SEC/AppData/Local/Programs/Python/Python311:/c:/Users/SEC/AppData/Local/Microsoft/WindowsApps:/c:/intelFPGA_lite/21.1/questa_fse/win64:/c:/intelFPGA_lite/21.1/questa_fe/win64:/c:/Users/SEC/AppData/Local/Programs/Microsoft VS Code/bin:/c:/Program Files/CodeBlocks/MingW/bin:/c:/Users/SEC/AppData/Local/Microsoft/WinGet/Packages/Schmiz.frm_Microsoft.Winget.Source_8wekyb3d8bbwe:/c:/Users/SEC/AppData/Roaming/npm:/c:/Users/SEC/.dotnet/tools:/c:/Users/SEC/AppData/Local/GitHubDesktop/bin:/usr/bin/vendor_perl:/usr/bin/core_perl)
SEC@VELAN-85131 MINGW64 ~ (master)
$ git config --global core.editor '"C:/Program Files/Notepad++/notepad++.exe' -multiInst -nosession"
SEC@VELAN-85131 MINGW64 ~ (master)
$ git config --global core.editor
'C:/Program Files/Notepad++/notepad++.exe' -multiInst -nosession
SEC@VELAN-85131 MINGW64 ~ (master)
$ |
```

Lab 3: Branching and Switching

```
MINGW64/c/Users/SEC/GitDemo
SECURELAN-85131 MINGW64 ~ (master)
$ mkdir gitDemo
SECURELAN-85131 MINGW64 ~ (master)
$ cd gitDemo
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ git init
Initialized empty Git repository in C:/Users/SEC/gitDemo/.git/
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ echo "welcome to GitDemo" > welcome.txt
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ git status
On branch master
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    welcome.txt

nothing added to commit but untracked files present (use "git add" to track)
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ git add welcome.txt
warning: in the working copy of 'welcome.txt', LF will be replaced by CRLF the next time Git touches it
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ git commit
[master (root-commit) 150c42c] commit
1 file changed, 1 insertion(+)
create mode 100644 welcome.txt
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ git log --oneline
150c42c (HEAD -> master) commit
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$ ^C
SECURELAN-85131 MINGW64 ~/GitDemo (master)
$
```

Lab 4: Merging Branches

```
MINGW64/c/Users/PP/PPAGAVB/GitDemo
switched to branch 'Gitwork'
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (Gitwork)
$ echo "message:updated content on Gitwork branch</message>" > hello.xml
$ git status
On branch Gitwork
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    hello.xml

nothing added to commit but untracked files present (use "git add" to track)
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (Gitwork)
$ git add hello.xml
$ git commit -m "Added and updated hello.xml on Gitwork branch"
warning: in the working copy of 'hello.xml', LF will be replaced by CRLF the next time Git touches it
[Gitwork 499fede] Added and updated hello.xml on Gitwork branch
1 file changed, 1 insertion(+)
create mode 100644 hello.xml
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (Gitwork)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (main)
$ git checkout main
Already on 'main'
Your branch is up to date with 'origin/main'.
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (main)
$ echo "message:hello from main branch</message>" > hello.xml
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (main)
$ git add hello.xml
$ git commit -m "Added hello.xml with different content on main"
warning: in the working copy of 'hello.xml', LF will be replaced by CRLF the next time Git touches it
[main f2315c8] Added hello.xml with different content on main
1 file changed, 1 insertion(+)
create mode 100644 hello.xml
PPAGAVB-PPAGAVB MINGW64 ~/GitDemo (main)
$ git log --oneline --graph --decorate --all
* f2315c8 (HEAD -> main) Added hello.xml with different content on main
* 499fede (Gitwork) Added and updated hello.xml on Gitwork branch
/
* 6684407 (origin/main) Modified welcome.txt in GitNewBranch2
* f8c5374 Updated welcome.txt on GitNewBranch
* 1235878 Added newfile.txt on GitNewBranch
* 8add041 Added newfile.txt on GitNewBranch
1af30e2 Add .gitignore to ignore .log files and log folder
```

```

MINGW64/C:/Users/HP/GitDemo
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git diff main Gitwork
diff --git a/hello.xml b/hello.xml
index dc8ead..1a065a1 100644
--- a/hello.xml
+++ b/hello.xml
@@ -1,1 @@
-Hello from main branch/message
+message:updated content on gitwork branch/message
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git difftool main Gitwork
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git checkout main
git merge Gitwork
Already on 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use 'git push' to publish your local commits)
Auto-merging hello.xml
CONFLICT (add/add): Merge conflict in hello.xml
Automatic merge failed; fix conflicts and then commit the result.
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main/MERGING)
$ git mergetool
Merging:
hello.xml

Normal merge conflict for 'hello.xml':
{local}: created file
{remote}: created file
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main/MERGING)
$ git add hello.xml
git commit -m "Resolved merge conflict in hello.xml"
[main 8d8e056] Resolved merge conflict in hello.xml
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git status
echo "" .bak" >> .gitignore
git status
On branch main
Your branch is ahead of 'origin/main' by 3 commits.
(use 'git push' to publish your local commits)

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

nothing added to commit but untracked files present (use "git add" to track)
On branch main
Your branch is ahead of 'origin/main' by 3 commits.
(use 'git push' to publish your local commits)

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   .gitignore

```

Lab 5: Syncing with Remote Repository

```

* [new branch] Git-T03-HOL_002 -> Git-T03-HOL_002
branch 'Git-T03-HOL_002' set up to track 'origin/Git-T03-HOL_002'.
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (Git-T03-HOL_002)
$ git checkout main
git status
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
On branch main
Your branch is up to date with 'origin/main'.

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

nothing added to commit but untracked files present (use "git add" to track)
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git branch -a
* Git-T03-HOL_002
* main
remotes/origin/Git-T03-HOL_002
remotes/origin/main
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git branch
Git-T03-HOL_002
* main
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git push origin Git-T03-HOL_002

Everything up-to-date
HPBLAPTOP-PPAGAVB0 MINGW64 ~/GitDemo (main)
$ git fetch origin
git log origin/Git-T03-HOL_002 --oneline --graph --decorate
warning: redirecting to https://gitlab.com/rehannaveid83/GitDemo.git/
* afec831 (origin/Git-T03-HOL_002, Git-T03-HOL_002) Add work.txt with initial content on Git-T03-HOL_002
* 6a7b7d7 (HEAD -> main, origin/main) Added .bak files to .gitignore
* 8d8e056 Resolved merge conflict in hello.xml
\
* 499fe8e Added and updated hello.xml on Gitwork branch
* | f2315c8 Added hello.xml with different content on main
//
* 6684407 Modified welcome.txt in GitNewBranch2
* fb8c574 Updated welcome.txt on GitNewBranch
* 1235376 Added newfile.txt on GitNewBranch
* 8add041 Added newfile.txt on GitNewBranch
* 1af20e2 Add .gitignore to ignore .log files and log folder

```