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PROFESSIONAL
UNIVERSITY

Registration: 12415355

Section: 324KDV

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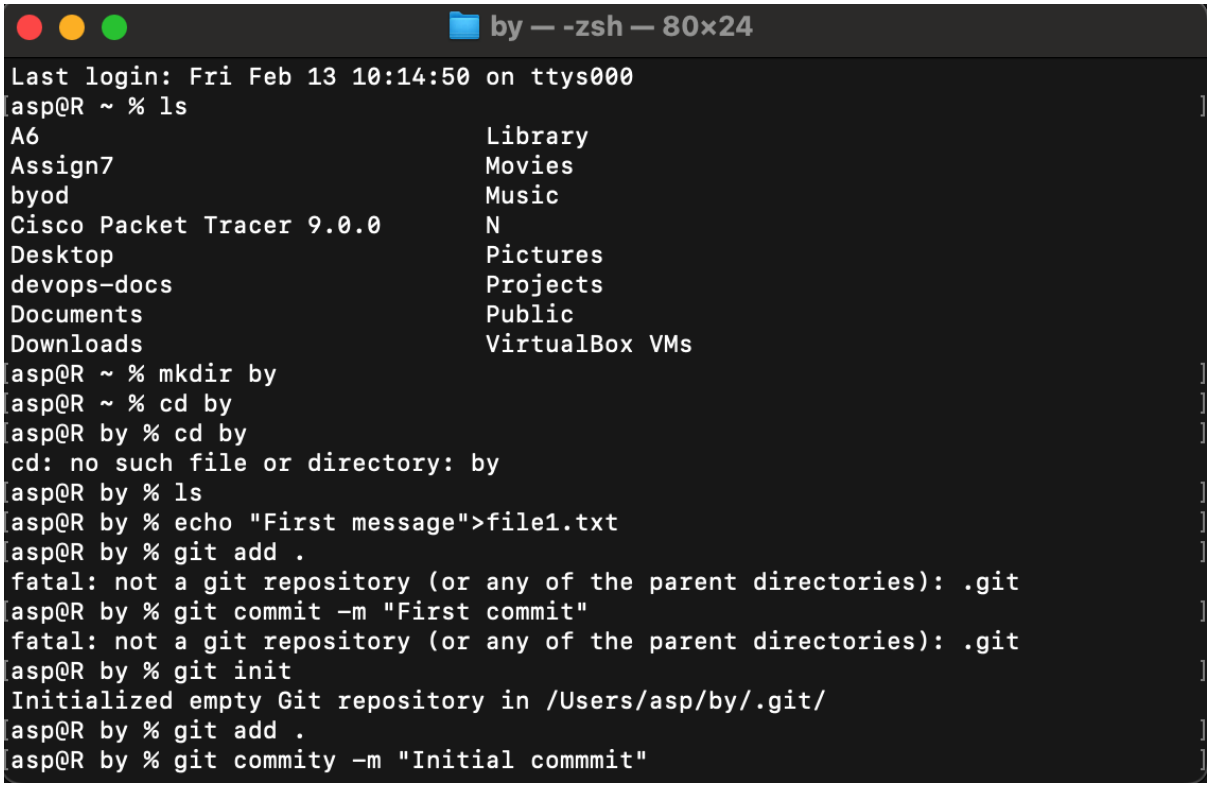
Dept. -: School of Computing and Engineering

PART A:


by — -zsh — 80×24
Last login: Fri Feb 13 10:14:50 on ttys000
asp@R ~ % ls
A6
Assign7
byod
Cisco Packet Tracer 9.0.0
Desktop
devops-docs
Documents
Downloads
Library
Movies
Music
N
Pictures
Projects
Public
VirtualBox VMs
asp@R ~ % mkdir by
asp@R ~ % cd by
asp@R by % cd by
cd: no such file or directory: by
asp@R by % ls
asp@R by % echo "First message">file1.txt
asp@R by % git add .
fatal: not a git repository (or any of the parent directories): .git
asp@R by % git commit -m "First commit"
fatal: not a git repository (or any of the parent directories): .git
asp@R by % git init
Initialized empty Git repository in /Users/asp/by/.git/
asp@R by % git add .
asp@R by % git commity -m "Initial commmit"


by — -zsh — 80×24
asp@R by % git commit -m "Initial commit"
[main (root-commit) c78de05] Initial commit
1 file changed, 1 insertion(+)
create mode 100644 file1.txt
asp@R by % git log
commit c78de05535c3eb9196e103e1aacbf997e3d4766e (HEAD -> main)
Author: Zlan9 <archishmansingh805@gmail.com>
Date: Fri Feb 13 10:43:52 2026 +0530
Initial commit
asp@R by % git status
On branch main
nothing to commit, working tree clean

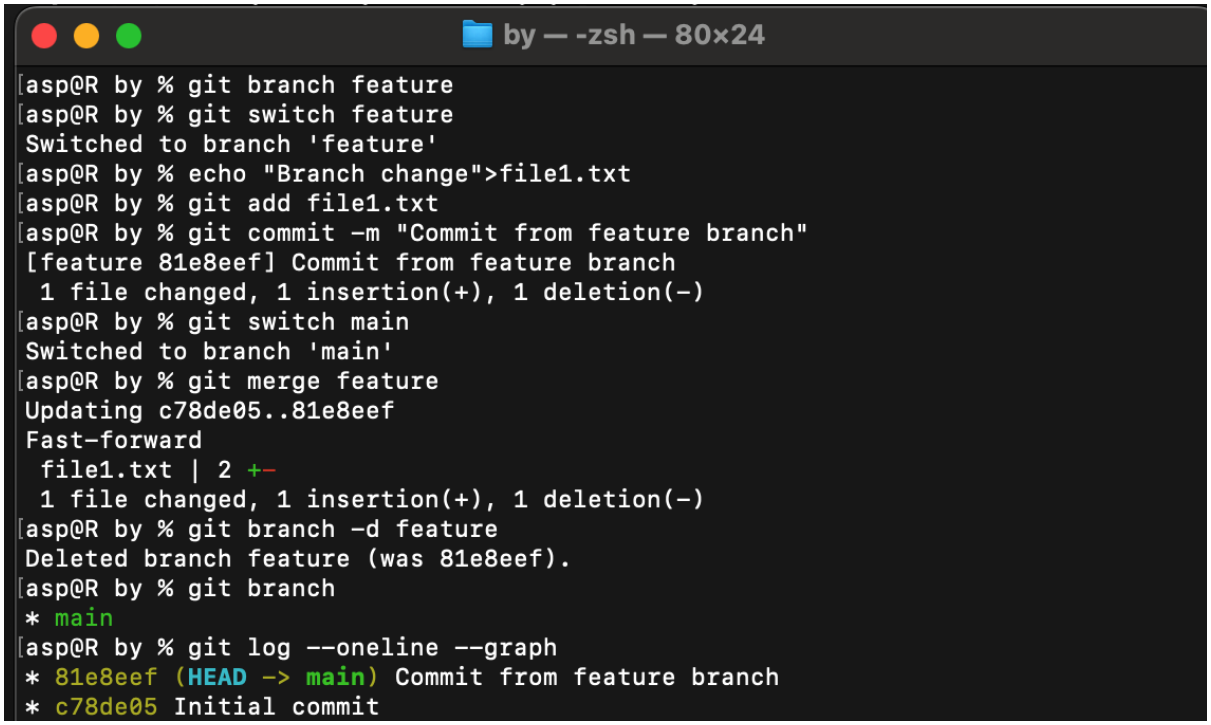
PART B:

Q. What a git branch represents internally?

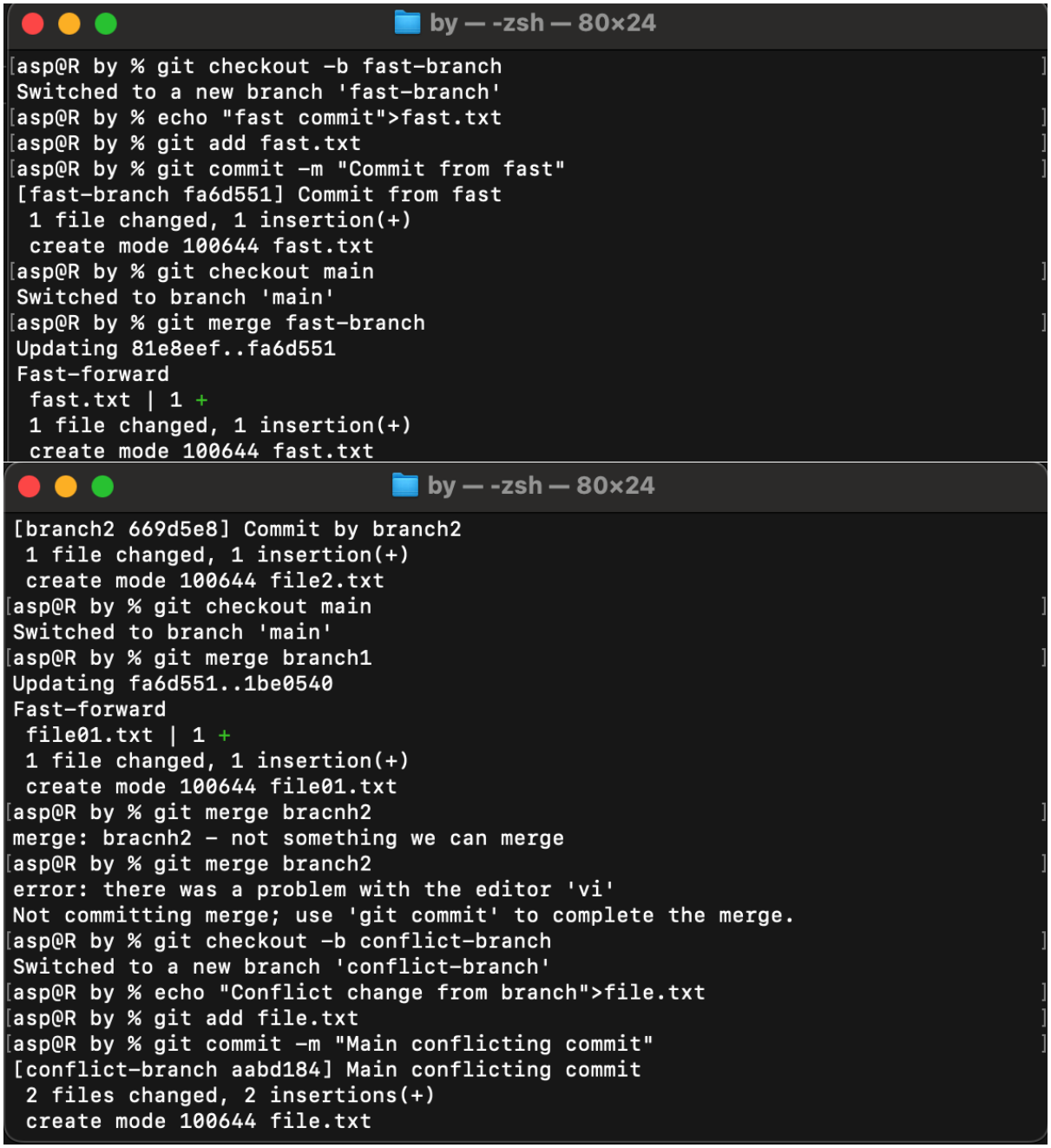
A. A branch represents a movable pointer to a commit chain.

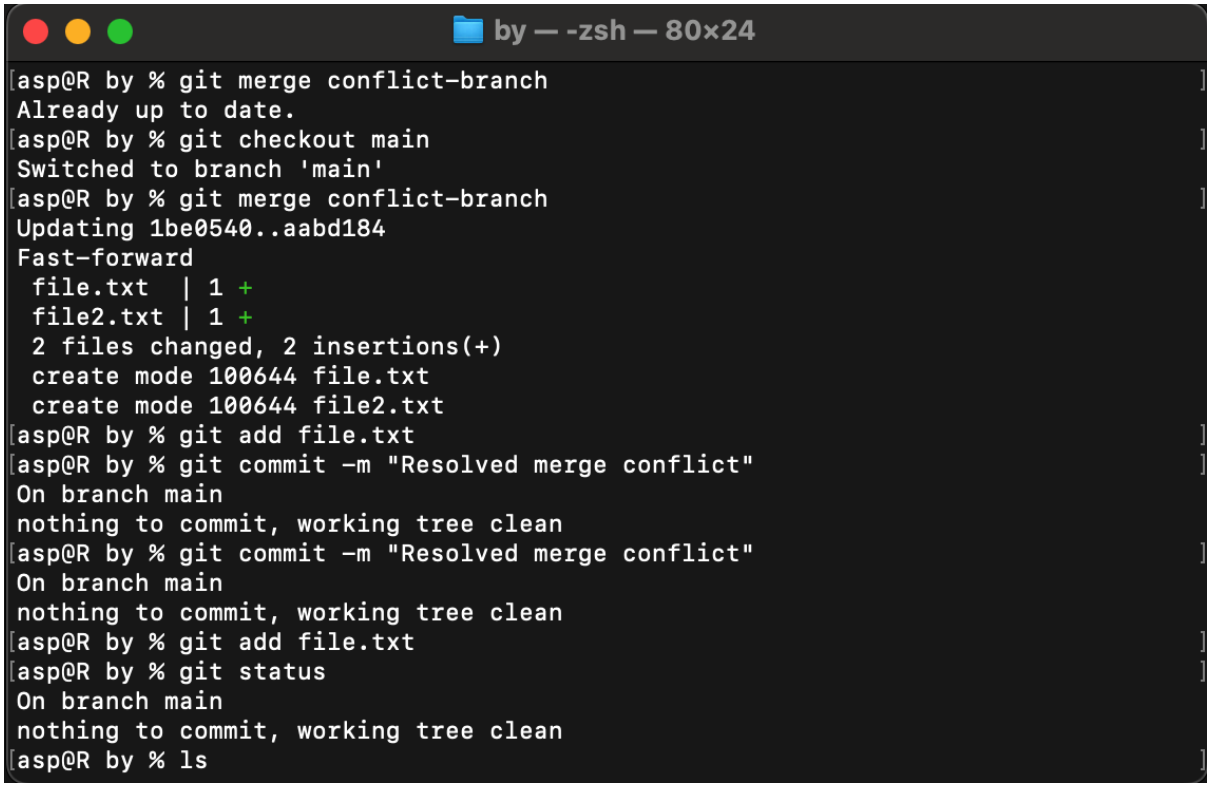
Q. Why git status is critical during development?

A. Git status is critical during development because it provides an immediate, real time snapshot of the working directory.

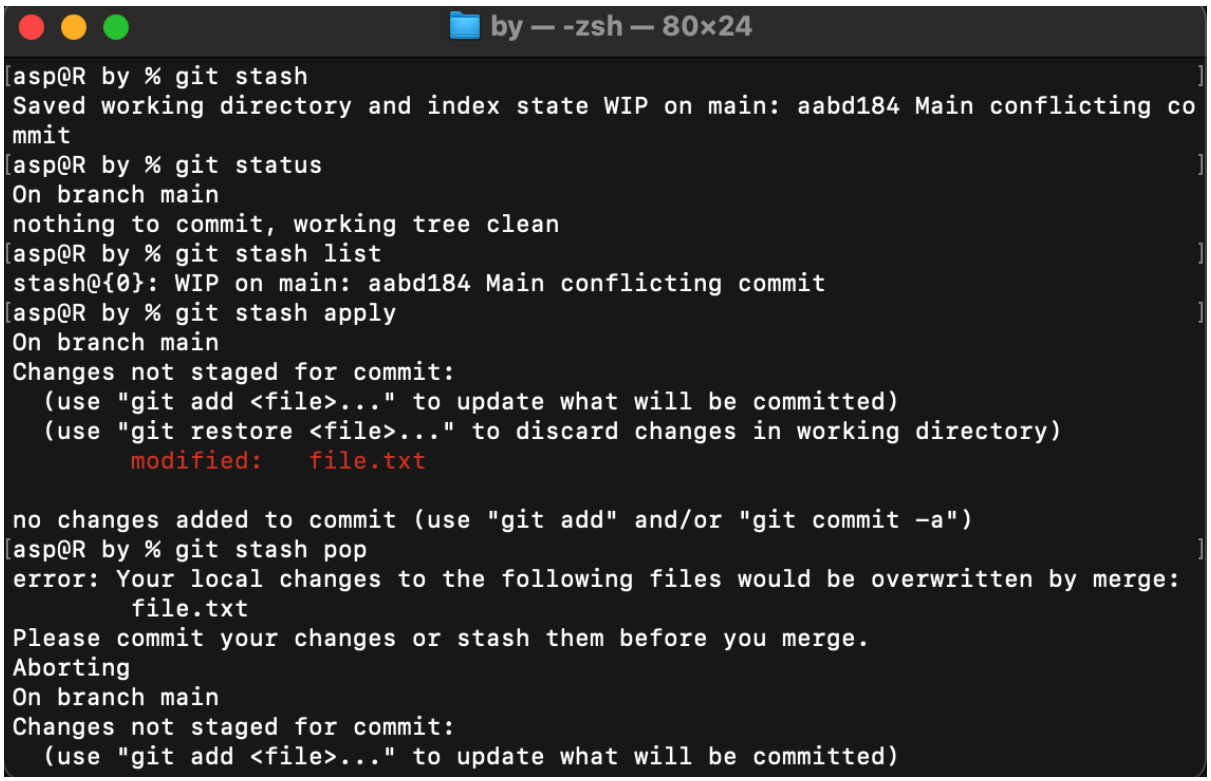


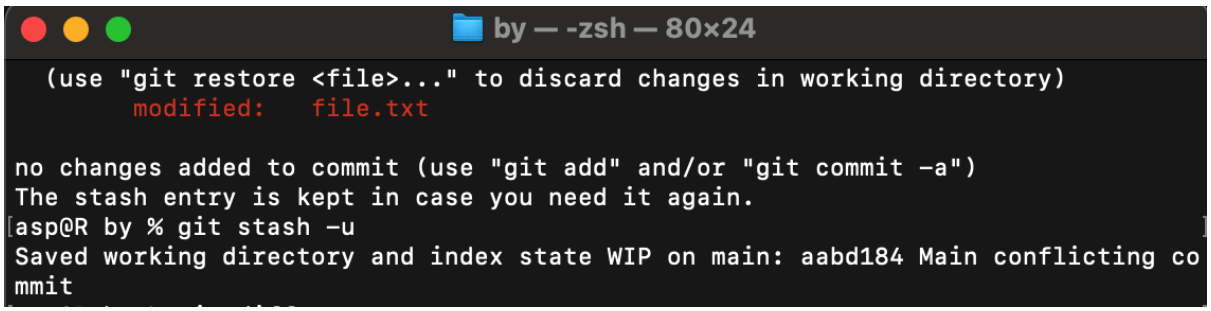
PART C:


by — -zsh — 80×24
asp@R by % git checkout -b fast-branch
Switched to a new branch 'fast-branch'
asp@R by % echo "fast commit">fast.txt
asp@R by % git add fast.txt
asp@R by % git commit -m "Commit from fast"
[fast-branch fa6d551] Commit from fast
1 file changed, 1 insertion(+)
create mode 100644 fast.txt
asp@R by % git checkout main
Switched to branch 'main'
asp@R by % git merge fast-branch
Updating 81e8eef..fa6d551
Fast-forward
fast.txt | 1 +
1 file changed, 1 insertion(+)
create mode 100644 fast.txt
by — -zsh — 80×24
[branch2 669d5e8] Commit by branch2
1 file changed, 1 insertion(+)
create mode 100644 file2.txt
asp@R by % git checkout main
Switched to branch 'main'
asp@R by % git merge branch1
Updating fa6d551..1be0540
Fast-forward
file01.txt | 1 +
1 file changed, 1 insertion(+)
create mode 100644 file01.txt
asp@R by % git merge bracnh2
merge: bracnh2 - not something we can merge
asp@R by % git merge branch2
error: there was a problem with the editor 'vi'
Not committing merge; use 'git commit' to complete the merge.
asp@R by % git checkout -b conflict-branch
Switched to a new branch 'conflict-branch'
asp@R by % echo "Conflict change from branch">file.txt
asp@R by % git add file.txt
asp@R by % git commit -m "Main conflicting commit"
[conflict-branch aabd184] Main conflicting commit
2 files changed, 2 insertions(+)
create mode 100644 file.txt


by — -zsh — 80×24
asp@R by % git merge conflict-branch
Already up to date.
asp@R by % git checkout main
Switched to branch 'main'
asp@R by % git merge conflict-branch
Updating 1be0540..aabd184
Fast-forward
file.txt | 1 +
file2.txt | 1 +
2 files changed, 2 insertions(+)
create mode 100644 file.txt
create mode 100644 file2.txt
asp@R by % git add file.txt
asp@R by % git commit -m "Resolved merge conflict"
On branch main
nothing to commit, working tree clean
asp@R by % git commit -m "Resolved merge conflict"
On branch main
nothing to commit, working tree clean
asp@R by % git add file.txt
asp@R by % git status
On branch main
nothing to commit, working tree clean
asp@R by % ls

PART D:


by — -zsh — 80×24
asp@R by % git stash
Saved working directory and index state WIP on main: aabd184 Main conflicting co
mmit
asp@R by % git status
On branch main
nothing to commit, working tree clean
asp@R by % git stash list
stash@{0}: WIP on main: aabd184 Main conflicting commit
asp@R by % git stash apply
On branch main
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: file.txt
no changes added to commit (use "git add" and/or "git commit -a")
asp@R by % git stash pop
error: Your local changes to the following files would be overwritten by merge:
file.txt
Please commit your changes or stash them before you merge.
Aborting
On branch main
Changes not staged for commit:
(use "git add <file>..." to update what will be committed)


by — -zsh — 80×24
(use "git restore <file>..." to discard changes in working directory)
modified: file.txt
no changes added to commit (use "git add" and/or "git commit -a")
The stash entry is kept in case you need it again.
asp@R by % git stash -u
Saved working directory and index state WIP on main: aabd184 Main conflicting co
mmit

PART E:
1.
2. Git diff reveals:
a. Line by line code changes
b. Which lines were added
c. Which lines were removed
d. Which lines were modified

e. Differences between working directory and staging area.

3. GitHub is a cloud based repository hosting platform.
It stores remote repositories.
Enables team collaboration.

Allows pull requests
Provides code review system.
Manages version history.

4. In a software company:

- Developer A pushes code to GitHub.
- Developer B pulls the latest changes.
- Code is reviewed using pull requests.
- Manager approves merge into main branch.

This ensures:

- Safe collaboration
- Code tracking
- Version control
- Backup and recovery