



UNIVERSITY OF ENGINEERING AND TECHNOLOGY PESHAWAR

MAIN CAMPUS

DEPARTMENT OF CS&IT (DATA SCIENCE)

ASSIGNMENT NO # 02

COMPUTATIONAL INTELLIGENCE

SUBMITTED BY:

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7TH SEMESTER

SUBMITTED TO:

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Q1: Differentiate between GIT MERGE and GIT REBASE

Answer:

Feature	GIT MERGE	GIT REBASE
Definition	Combines changes from one branch into another by creating a new <i>merge commit</i> .	Moves or reapplies commits from one branch onto another, creating a linear commit history.
Commit History	Preserves the complete branch history, showing all merges.	Rewrites the commit history to make it appear as if changes were made sequentially.
New Commit Created	Yes, a merge commit is created.	No, existing commits are rewritten.
Use Case	Used when you want to keep the history of how branches diverged and merged.	Used when you want a clean, linear project history without extra merge commits.
Command Example	<code>git merge feature-branch</code>	<code>git rebase main</code>

- `git merge` combines histories.
- `git rebase` rewrites history.

Q2: Define what is GIT CHERRY-PICK and where can it be used

Answer:

Definition:

`git cherry-pick` is a Git command used to apply a specific commit from one branch to another without merging the entire branch.

Syntax:

```
git cherry-pick <commit-hash>
```

Example:

If a bug fix was committed on the `dev` branch and you want the same fix in `main`:

```
git checkout main  
git cherry-pick a1b2c3d
```

Uses:

- To copy a specific commit (like a bug fix or small feature) from one branch to another.
- To apply urgent fixes without merging all other changes.
- To selectively include commits during project maintenance or patching.