

# WIPRO PRE SKILLING TRAINING NOTES

## Java Programming and Core Java

### Day-1(24.07.2025)

#### PowerShell:

PowerShell or Git Bash lets you interact with the file system and Git easily.

Command	Description	Example
ls	Lists files/folders in the current directory	ls
pwd	Prints present working directory path	pwd
cd	Changes directory	cd Documents
mkdir	Creates a new folder	mkdir MyProject
rmdir	Deletes an empty directory	rmdir OldFiles
cat	Shows the content of the file	
Echo **>	Create a file	
Echo **>>	Appends the text to file	

#### Version Control System:

A VCS is a system used to record changes made to files over time so you can:

- Recall specific versions later
- Track who made what changes
- Restore lost files
- Collaborate with others

#### Key Features:

**Track Changes:** Monitor edits made to files

**History Maintenance:** View changes across time

**Manage Changes:** Keep stable and unstable versions separate

**Team Collaboration:** Helps teams work on different parts simultaneously

**Issue Resolution:** Quickly rollback to previous versions if something breaks

Term	Description
Snapshot	A saved state of your project at a specific time
Commit	The act of saving a snapshot
Repository	A folder where your project and its version history is stored

### Types:

#### 1. Centralized VCS

- **Description:** One central server contains all the versions.
- **Users:** Download files, edit, and upload back.
- **Example Tools:** SVN (Subversion), CVS
- **Disadvantage:** If the server crashes, history is lost.

#### 2. Distributed VCS (like Git)

- **Description:** Each developer has a **full copy** of the codebase including its history.
- **Example Tools:** Git, Mercurial

### GIT:

Git is a Distributed Version Control System (DVCS) used by developers to track changes in source code during software development. It helps you:

- Maintain a history of changes
- Collaborate with others without overwriting each other's code
- Switch between versions of the code safely

### Git Commands:

Command	Syntax	Explanation	Example
git init	git init	Initializes a new Git repository in the current directory. Creates a hidden .git folder to track version control.	git init
git status	git status	Displays the state of the working directory and staging area. Shows which files are staged, unstaged, or untracked.	git status

Command	Syntax	Explanation	Example
git add	git add <filename>	Adds a specific file to the staging area. This prepares the file to be committed.	git add index.html
git add .	git add .	Adds all modified and new files in the current directory to the staging area. Saves time by not needing to list each file.	git add .
git commit	git commit	Commits the staged changes to the repository. Without the -m flag, it opens an editor for commit message.	git commit
git commit -m	git commit -m "message"	Commits staged changes with a message describing the changes. The -m flag is used for inline commit messages.	git commit -m "Added homepage"
git --version	git --version	Displays the current version of Git installed on your system.	git -- version
git log	git log	Shows the complete history of commits in the current branch. Includes author, date, commit hash, and message.	git log
git log --oneline	git log --oneline	Shows the commit history in a compact format (1 line per commit), displaying the abbreviated hash and commit message.	git log -- oneline

Command	Syntax	Explanation	Example
git log --stat	git log --stat	Shows each commit with a summary of the files changed, number of lines added or deleted per file. Useful to track change size.	git log --stat

**Staging Area:** Temporary area where changes are listed before committing.

**Working Directory:** Where your current files live.

### Branching:

Action	Command	Result
See all branches	git branch	Lists all local branches
Create a new branch	git branch new-feature	Creates a new branch named new-feature
Switch to a branch	git checkout new-feature	Moves you to new-feature
Switch to master (new way)	git switch master	Moves you to master
Merge branch into current branch	git merge new-feature	Merges new-feature into current branch