Git With GitHub – 2 days

All examples & Lab exercises will be based on one of the cloud hosted Git Server – GitHub (https://github.com/)

Day 1:

- Version control, why, what, how
- Git Introduction, history, Git Server Flavors (GitLab, BitBucket, GitHub etc)
- Introduction to DVCS, difference between client server & distributed version control
- Server & Client set up – Registration on cloud hosted GitHub.com, installing Git Client (https://git-scm.com/download/win) on all participant's machine, SSH Key generation & updating it on Git server, sample repository set-up and basic commands
- Git Operations – Config, Add, Commit, log, status, tracking new files, ignoring file types, staging changes, removing files & directories, remote, reset (hard & soft differences) & revert, reflog
- Git workflow for a sample Java program, classpath & .project issues
- Git with IDE (VScode or any other IDE), running all exercises with IDE

Day 2:

- Working with branches, setting up remote tracking branches, fetch + merge, Submodules
- Advanced topics - Stashing, cherry pick, rebase, squash, interactive rebase, Tagging
- Fetching, pulling & merging, resolving merge conflicts, reviewing code changes & raising code merge/review (pull) requests
- Using IDE to work with Git – Demo & hands-on exercise with Git GUI tool and/or Visual Studio
- Git Working Model – Clone V/s Fork (pros & cons), GitHub Repository Organization Best practices, Overview of Typical Branching Models (GitFlow, Githubflow, trunk based etc)
- Introduction to GitHub Actions and demo of a simple Action
- Q&A

Pre-Requisite:

- Prior experience working on any other source code version control tool
- Knowledge about basic source code activities (developer level) would be desirable
- Linux/Command line experience will be helpful

Objectives: After completing this training, developers will:

- Understand basics of git distributed version control system and the fundamentals of using git while collaboratively working on software developments projects
- Be able to install git bash and use it for their version control tasks
- Know how to provision new users on GitHub server and also set up various Team structures for managing their source code repositories
- Get an insight into various branching models while using git distributed version control system and choose a suitable model based on their project need

Hardware Requirement:

- Any Windows desktop/laptop (Windows 7, Windows XP or Windows 10) with min 8 GB RAM and administrator permission (for installing software)

Software Requirement:

- Git Client for Windows (https://git-scm.com/downloads)
- VS Code (https://code.visualstudio.com/)