INTRODUCTION TO GIT AND GITHUB

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Lab report 1

Abstract: The research delves into the imperative need for version control systems and collaborative platforms in coding endeavors. It addresses the challenge of code management, introducing Git as a distributive version control system designed to streamline the tracking and coordination of code changes. GitHub is pivotal platform in this ecosystem, is explored for it's role in hosting repositories and facilitating seamless collaboration among developers. The result of this exploration reveal a paradigm shift in code development, emphasizing the enhanced efficiency and transparency through Git and GitHub, ultimately advancing our understanding of contemporary software development practices.

Introduction: Git is a distributed version control system that enables collaboration among developers by tracking changes in source code during making a project in software development. On the other hand, Github is a web-based platform that provides hosting for Git repositories, facilitating collaborative work, code review and project management

Method and Materials:

During the lab, the main tools used ~~wee~~ were Git and Github. The following tools were conducted to understand the basics of version control and collaboration using Git:

Activity 1: Git Installation and configuration

1) Installation: Git was download

from https://git-scm.com/downloads.

2) Repository Setup: Local repository initialized with '$ git init', configured default branch to 'main' and users details are added in the Git terminal

Activity 2: Creating and Running Scripts

1) Creating a Repository: A new directory created, initialized as a repository and configured with user information.

2) Creating a script: A text file (e.g. 'helloWorld.txt') was created with a script to print "Hello world" in the terminal.

Activity 3: Adding, Committing and Tracking Changes

1) Adding and Comitting Files:
Changes made to the script were added to the staging area with '$ git add' and committed using '$ git commit'.

2) Viewing Changes: Differences between committed and staged files were viewed using '$ git diff'

Activity 1: Pushing to GitHub (Branch: lab 1)

1) Configure GitHub Remote:

- Establishing a connection to the GitHub repository by adding a remote named 'origin' using:
  $ git remote add origin url_link
- Ensuring If I am on the 'lab1' branch:
  $ git checkout lab 1

2) Push Local changes to GitHub (Branch: lab 1):

- Push all contents from the local repository to the GitHub repository on the 'lab 1' branch using:
  $ git push -u origin lab 1

3) Check GitHub Repository:

- Verifying and visit GitHub repository online and review

the pushed commits on the lab 1 branch.

Discussion:

If we make mistakes common command prompt such as incorrect branch names or misspelled commands they can be corrected by referencing Git documentation, using the 'git help' command or searching in google. During this lab I did not face such mistakes.

Conclusion: Git is a crucial tool in software development, providing version control and facilitating collaboration. Its usage ensures a systematic approach to managing code changes, enhances team collaboration and contributes to project stability. The future benefits include smooth development workflows, improved code quality and effecient collaboration.