Laboratory Report

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Atlantic Technological University

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Module:	INFS_IT903

Please refer to the Institute's Quality Assurance Handbook, Version 3.0, September 2018

1. Practical work, forming part of the CA of a module, will only be assessed if the student has attended the relevant practical classes.
2. CA work must be completed within the schedules and specifications (specified in the CA brief). Students who submit CA late may forfeit some or all the marks for that work.
    a. The total marks available for an assessment be reduced by 15% for work up to one week late.
    b. The total marks available be reduced by 30% for work up to two weeks late.
    c. Assessment work received more than two weeks late will receive a mark of zero.

Work is deemed late when an unauthorised missing of a deadline has occurred.

3. CA must be the student's own work, refer to Plagiarism Policy, in section 5.7 of the QA manual.

Contents

Description

This lab report describes the practical work completed during weeks 7 through 9 of the Infrastructure as Code modules. The walkthroughs in weeks 7, 8, and 9 primarily describe the steps for installing Git and GitHub and exploring their additional features. First, in Walkthrough 1, the student demonstrated the method mentioned in the lecturer's notes for installing Git on the student's local machine. The installation was carried out by the student on a Windows machine. In Walkthrough 2, the student demonstrated how to create a GitHub account on github.com. The student had signed up for github.com as a "Student" in order to create a free account. After that, the student moved on to creating a repository in order to store the files. In Walkthrough 3, the student created logs and was able to comprehend the terminologies contained in the logs. Furthermore, the student had created a "Cheat Sheet" that included the git commands and descriptions and will be used as a reference in the future. The "Cheat Sheet" is included in the zip folder as a separate PDF file. In Walkthrough 4, the student demonstrated how to create a repository, then how to create a branch architecture locally and on GitHub.

Aims

This section explains the goals of the practical work for weeks 7, 8, and 9. On a Windows machine, the student will work on the following goals. The student tested each of the objectives in the ATU workstations during class, but the objectives were repeated in the student home workstation.

1. Install and test Git on the student's Windows machine. To put basic Git commands like Git add, Git restore, Git commit, Git diff, Git blame, Git ignore, and viewing the Git log to the test.
2. Create a GitHub student account and upload data from your local machine. To use GitHub in VSCode as well.
3. To test additional Git and GitHub functionality. Examining GitHub logs and undoing local changes before, after staging and after Committing.
4. After creating a repository, create a branch architecture locally and a branch architecture on GitHub. To copy changes from GitHub to your local machine and vice versa.

Methodology

This section of the report describes the steps taken to achieve the goals outlined in the previous section. Each step was clearly indicated, and this section allows any of the student's colleagues to replicate the exact steps by referring to this lab report.

For goal number one, the student used the lecture notes to install and test Git on the student's Windows machine. When the installation was finished, the student created a local repository to practice basic Git commands like Git add and Git restore.

For goal number two, the student used the lecture notes to create a GitHub account and push data from the local machine. The student had signed up for github.com as a "Student" in order to create a free account.

For goal number three, the student used the lecture notes to test the additional functionality in Git and GitHub. Aside from that, the student examined the GitHub logs and undid the local changes before, after staging and after committing.

For goal number 4, the student first created a repository, then a branch architecture locally, and then a branch architecture on GitHub using the lecture notes.

Results and Testing

This section describes the student's findings and testing based on the methodology described above. The student had successfully installed Git on the local Windows machine for goal number one [1]. As stated in the methodology, the student had set up a repository called Git on his or her local machine [2].

For goal number two, the student created a GitHub repo on the student's local machine. The student then successfully completed the GitHub account setup. The student had signed up for github.com as a "Student" in order to create a free account. After that, the student set up the authentication and pushed the local files to the newly created GitHub account. The student had also completed the Exercise to rewrite the simple Linux shell script for Windows as a batch file with success [3] .

For goal number three, the student was able to examine the GitHub logs and undo the local changes before, during, and after staging. The student forked the repo from the lecturer's GitHub account [4].

For goal number four, the student was able to create a branch architecture both locally and on GitHub. Finally, the student had merged the changes from GitHub to the local machine, as well as the changes from the local machine to GitHub.

Conclusions

This section depicts the key takeaways from walkthroughs 7, 8, and 9 of the practical work. All of the objectives stated above were met because the student completed all of the steps and exercises. The student currently has a basic understanding of how to set up and perform tasks in Git and GitHub. The lecturer's demonstrations in the notes had been clearly replicated by the student with no errors.

To summarize goal number one, the student successfully installed Git and validated the installation on the local Windows machine without any errors. When installing Git on Windows, it is best to select the "Use Git from the Windows Command Prompt" option. This allows you to use all git commands from the terminal rather than Git's personal terminal, Git Bash. According to the student's independent research there are several advantages to using a GIT through its GUI rather than the GIT CLI. To begin, the CLI requires the user to memorize a large number of commands. The GUI, on the other hand, groups multiple commands under a single key press [5].

In terms of goal number two, the student created a GitHub account and completed several tasks such as pushing and pulling files from the local repository to the remote location. According to the student's independent research there are several benefits to using GitHub [6]. To begin, GitHub makes it simple to contribute to projects being worked on at college or at work. GitHub is now used to manage development tasks in nearly every IT project in the real world. If the project is open source, using GitHub is free, and it allows you to create trackers that make it easy to include more detailed information/documentation in order to get feedback from the development team. Aside from that, the Markdown feature in GitHub allows users to write formatted documents using a simple text editor. GitHub has changed the way people write by grouping everything through Markdown, primarily from the issue tracker and user comments.

To summarize goal number three, the student extracted the GitHub logs in order to examine and comprehend them. According to the student's independent research, the git log is essentially a command that displays the commits made by the project's contributors. It can, however, be changed by passing various parameters to the git log [7].

To summarize goal number 4, the student demonstrated how to create a branch both locally and on GitHub. According to the student's independent research git branching essentially allows contributors/developers to go out from the production version of code to fix a bug or add a new feature. Contributors/Developers create branches to work with a copy of the code rather than the original. Contributors/Developers create branches to isolate code changes that they test before merging to the main branch. The main branch offers nothing particularly noteworthy. It is simply the first branch created when a Git repository is created with the git init command. When a commit is made, Git assigns a unique SHA-1 hash to the snapshot of files [4].

In conclusion, GiHub is deemed to be the ideal tool for use in project collaboration tasks. JIRA can also be linked to GitHub, allowing the PMO team to create tickets and assign them to the development team. It also increases visibility into what the development teams are working on and allows the PMO team to report back to higher management on project progress more efficiently.

References

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