

CSCI 3901 Winter 2021

Lab 5: Version Control

Due Friday Feb. 12th, 08:30 AST on Brightspace

Objective

In this lab, you will explore the version control system called Git.

Working alone or in a group of 2, you will apply your knowledge of version control, notably Git, to manage a set of files for a project.

You will be given an initial configuration of Git for a project and will be asked to effect a set of changes to the files, stored in Git, to achieve a target configuration for your Git repository.

Preparation

- Download and install Git. You may use your IDE if it supports git integration, or through the command line (on windows, you may want to install Git Bash alongside Git for this).

Resources

There are many Git tutorials online that can help you. Some examples are

- <https://git-scm.com/docs>
- <https://confluence.atlassian.com/bitbucketserver/basic-git-commands-776639767.html>
- <https://education.github.com/git-cheat-sheet-education.pdf>

Procedure

Set-up

1. Download and unzip the Git repository from Brightspace.

Lab steps

Part 1 - History Using `git status`, `git log`, `git diff`, and `git branch` answer the following questions:

1. How many commits are there?
2. What is the commit message associated with the most recent commit?
3. Which commit added the `basePrices` static variable?

4. How many branches are there?
5. Which is the last commit on the `coupons` branch?

Resources: `status`, `diff`, `log`, `branch`

Part 2 - Basic operations

1. Fix the 3 remaining bugs from the Debugging lab. In particular:
 - On lines 62, 64, and 66, `topping == str` should be `topping.equals(str)`
 - On lines 63, 65, and 67, `price =` should be `price +=`
 - The final price should be `price = price - price*coupon/100`
2. Commit these bug fixes with a suitable commit message

Resources: `add`, `commit`

Part 3 - Branching

1. Create a new branch called `burger`. Your new branch should be off the repository's master branch
2. Add a new menu option for a burger. A burger at `HfxDonairExpress` costs \$2.50
3. Commit this change on the `burger` branch
4. Finally, merge the `burger` branch into the main branch

Resources: `branch`, `checkout`, `add`, `commit`, `merge`

Questions

1. When working alone on a project, how frequently should you commit your code to a version control system? Explain why.
2. When working in a team, how frequently should you commit your code to a version control system? Explain why.
3. Why might you create branches for your project in your version control system?

Reporting

1. In one file, list
 - The members of your team.
 - The answers to the questions in part 1.
 - The final output of `git log` after parts 2 and 3 have been completed.
 - The answers to the Questions section of the lab
2. Generate a PDF from the document.

3. Create a `.zip` file of the git repository.
4. Submit the PDF and the zipped repository in Brightspace in the Lab/Lab 5 section.

Assessment

The assessment will be on a letter grade and will reflect how well you have used the version control system as well as how your answers to the broadening questions demonstrate that you have thought through how version control can help you in your software development.