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## Assignment 0 – Due Thursday, September 1

*Note: This is a “test assignment” to try out a new process using Bitbucket to manage assignments and submissions. You will receive a grade, but it will only be out of 20 points instead of the usual 100 points.*

**Context:** Version control systems (like git, subversion, and mercurial) are one of the most important kinds of tools that a professional developer uses on a daily basis. There are several online services, like GitHub and Bitbucket, that enhance a basic version control system with various other tools for effective teamwork, such as issue trackers and communication tools. We are going to experiment with using Bitbucket and git in this class to manage assignments and student submissions. Use of git will be somewhat simplistic since we don't have team assignments, but there are several benefits to this approach for CSC 330. First, this gives you some experience with a very powerful tool, even if we only use a small part of it. Second, git is designed for managing multi-file programming projects, and so is a much better way to manage and submit programming work than Canvas. Third, we will talk a little about features that are useful even in a single-developer setting, such as the use of branches to test out ideas that may or may not work. And finally, git support is integrated into NetBeans, so after you initialize your project through the Bitbucket web site your work (including assignment submission) is done directly in NetBeans.

This is an experiment for this semester, and we haven't tried this before. The main goal of this assignment is to test out the ideas and see if they are promising enough to use throughout the semester.

1. First, you need to create a free account at <https://bitbucket.org>. At the web site, click the green “Get started” button to sign up for an account, which will bring up a screen asking for your email address. *Use your UNCG email here, not a personal email.* After entering your email, you will go through a standard process for creating an online account, which includes entering your full name (use your real name!), selecting a password, and solving a CAPTCHA. The system will send you an email, and you will need to use the link in that email to confirm your account before your account is enabled. In confirming your email, you will pick a username for your account – it isn't all that important what you pick here, but use something that isn't too long and is easy to remember.
2. Once you have completed the previous steps and your account is created, send me an email to let me know that you created your account. I will add you to a team named “UNCG CSC 330” as soon as possible — definitely within 24 hours.
3. Once you are a member of the “UNCG CSC 330” team, log in to the Bitbucket web site, and you will see your “Dashboard” with recently-updated repositories listed. While the “Assign0” repository that you need for this assignment is probably visible, explore a little to see what is possible. Click on the “Repositories” tab at the top of the Dashboard, and you'll see that you can filter repositories by Owner and Project. “Owner” will allow you to just see the “UNCG

CSC 330” repositories, and “Project” will allow you to filter by in-class examples or assignments. Filter by project “Assignments” and you’ll see that at this time the only repository is “Assign0.” Now click “Assign0,” which will take you to the “Overview” screen for the repository.

Depending on how wide your browser window is, you’ll either see a menu on the left of the page with actions and navigation options, or you’ll see a bar with icons that you can expand to the full menu by clicking the double arrow at the bottom of the window. Expand the menu if you need to, and then click “Fork” to make your own personal copy of the “Assign0” repository. It will ask you for a name, which defaults to “Assign0” — I want you to add a dash and your UNCG username after the name. For example, mine would be “Assign0-srtate.” Once you have made that change click the “Fork repository” button.

4. After forking, the web site will take you to the Overview page for your new repository. Click the “Settings” command from the left menu, and then select “Access management.” Under groups, click the “Select a group” dropdown menu and choose “ClassAdmin” and click the “Add” button to give read access to the instructor and grader. Finally, go back to the “Overview” screen and make a note of the URL at the top – this is how you will access the repository from NetBeans.
5. Start NetBeans, and from the “Team” menu at the top select “Git” and “Clone...” This will bring up a window that asks for a “Repository URL,” and you should enter the URL from the previous step. Enter your Bitbucket username and password below that, and then click “Finish” at the bottom (you can also click through options screens using “Next” if you prefer). A window should pop up saying the project was cloned, and give you an option to open the project, which you should do.
6. At this point your project should appear in the NetBeans “Projects” pane, and you can work with it like you would any other project. For this assignment, if you go down into the source code, there is a single Java source file that includes a comment with instructions on what to change in the file. In addition to that change to the code, put a comment with your name at the top of the file.
7. Once you have successfully made your changes, select the main project entry (“Assignment0”) in the project pane, right click on it, and go down to “Git” and “Commit...” It is vital that you do this from the project name in the project pane, and *not* from the “Team” menu! They may look the same, but the “Commit” in the “Team” window will only commit a single file rather than the entire project. In your commit window, type a brief commit message describing what you have changed, and then click “Commit” at the bottom.
8. From the Team menu, select “Remote” and “Push to Upstream” to update your files on Bitbucket.
9. Finally, on the Bitbucket web site, go to your repository (the one with your username in the repository name) and click “Create pull request” under “Actions” in the left menu. You can add a note under “Description,” but that isn’t necessary.