Unix and Linux

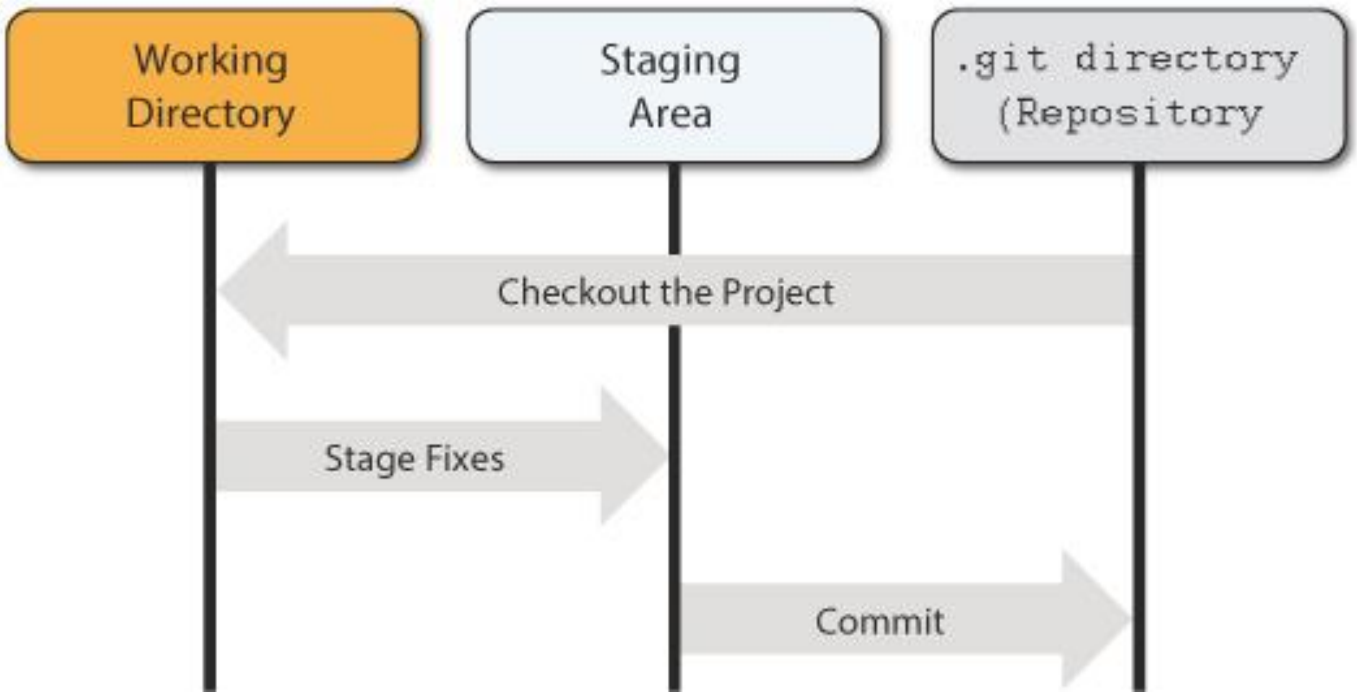
More Git and Github

Review of Git Basics

To get a copy of a project from a Git repository, you use a process called cloning. Cloning doesn’t just create a copy of all the files from the repository; it actually performs three primary functions:

- Creates a local repository of the project under the project_name/.git directory in your home directory. The files of the project in this location are considered to be “checked out” from the central repository.
- Creates a directory where you can directly see the files. This is called the working area. Changes made in the working area are not immediately version controlled.
- Creates a staging area. The staging area is designed to store changes to files before you commit them to the local repository.

Git Stages


Working Directory
Staging Area
.git directory (Repository
Checkout the Project
Stage Fixes
Commit

Review the username project

We did this last week, but here is a review

Login to your github account and go to

`https://github.com/chapman-cpsc-298/username`

Fork a copy of the project to your personal github account by clicking the button in the upper right hand corner,

Clone your fork by:

- Clicking the button

- Copying the URL of the repo
- In your home directory on your terminal, type `git clone` and paste in the URL of the repo

This will create a directory named `username` in your home directory

Creating the `username.sh` script

Change to your username directory

Copy the `zip.sh` file to a file named `username.sh`

Edit the `username.sh` file by updating the filename and adding the user prompts that display the rules.

Add the `username.sh` file to the staging area by typing:

```
git add username.sh
```

Commit your change to the local repository by typing

```
git commit –m “Adds username.sh”
```

Push your change to github by typing

```
git push –u origin master
```

Continue working on the project

Whichever computer you use, you should push your changes to github so that the version on github is the official, latest version.

To continue working, change to your project directory (in this case the “`username`” directory) and type

```
git fetch
```

Which will download the code from github, and

```
git merge
```

Which will let you merge any changes you might have made on another computer with the version on your current computer

Regular Expressions

We covered regular Expressions on Day 7

Recall:

{x} means find x number of occurrences

Something new:

{x,y} means find at least x but not more than y occurrences

Finish the `username.sh` script

Finish the `username.sh` script so that it will check to see if the string typed by the user obeys the rules for a username.

When it is working properly:

- Add it to your staging area
- Commit to your local repository
- Push it to your github account
- Post a link in Blackboard to your github repository

The numbers.sh script

The next programming assignment is to create a bash script named “numbers.sh” that will prompt a user to type a positive integer and will then print all the numbers from 1 up to and including that number with the word "odd" or "even" on the same line as the number.

For example, if the user were to enter the number 5, the program would print

```
1 Odd
2 Even
3 Odd
4 Even
5 Odd
```

Instructions for the numbers.sh project

- Login to your github account and create a new repository named "numbers" in your personal account
- Clone your repository to your computer
- Change into the repository directory and create a new script named `numbers.sh`
- The first line of the script should be "`#! /bin/bash`"
- The second line should be a comment with the name of the script
- The third line should be a comment with your name
- Prompt the user to enter a positive number
- Read the number typed by the user
- Use a while loop to loop through the numbers from 1 up to the number typed by the user
- Determine whether the current number is even or odd and print the required information on a new line
- Save the edited script
- Add it to your staging area
- Commit it to your local repository
- Push your updated local repository to github.
- Post a link to your github numbers repository on Blackboard.

Code you can use

Suppose you use the variable N to go from 1 to the number typed by the user. At the end of each pass through the loop you want to increment N by 1. You can do this with:

```
N=$[$N+1]
```

Or

```
N=$((N+1))
```

To check whether N is even or odd, you can use

```
$((N%2)) -eq 0
```

Quiz 7 and review quiz

If you have created and successfully tested the `numbers.sh` script, pushed it to github, and posted the link in Blackboard, take Quiz #7 until you get a perfect score.

After you get a perfect score on Quiz #7, take the Review Quiz as many times as you can.