UNIVERSITY OF SOUTHERN MAINE

Department of Computer Sciences

Git & GitHub Commands

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Setup

```
git config --global user.name "[username]"
```
Set the Username Git will use to authenticate

```
git config --global user.email "[email]"
```
Set the Email Git will use to authenticate

```
git config --global color.ui auto
```
Set automatic command line coloring for Git

```
git init
```
Initialize the current directory as a git repository

```
git clone [url]
```
Download a local copy of a repository to the machine

Staging and Snapshots

```
git status
```
Show modified files that are staged for commit

```
git add [file/directory]
```
Stage a file for the next commit

```
git reset [file]
```
unstage a file for commit while keeping the changes

```
git diff
```
Changes in files that are not staged for commit

```
git diff --staged
```
Changes in files that are staged for commit but not yet committed

```
git commit -m "[commit message]"
```
Commit your staged content as a new commit snapshot

```
git commit --amend
```
Add staged content to a commit snapshot that already exists

Initializing a Repository

```
git init
```
Initialize the current directory as a git repository

```
git clone [url]
```
Download a local copy of a repository to the machine

File Path Changes

```
git rm [file]
```
Delete the file from the project and stage the removal for commit

```
git mv [existing-path] [new-path]
```
Change an existing file path and stage the move

```
git log -stat -M
```
Show all commit logs with an indication of any paths that changed

Branches and Merging

```
git branch
```
List all branches. The active branch is marked with a '*'

```
git branch [branch-name]
```
Create a new branch at the current commit

```
git branch -d [branch-name]
```
Delete the specified branch at the current commit

```
git remote add upstream URL.git
```
Add 'upstream' repository to sync changes made in a forked repo

```
git checkout [branch-name]
```
Switch branches and check it out into the working directory

```
git merge [branch]
```
Merge the selected branch's history into the current branch

Inspect and Compare

```
git log
```
Show all commits in the current branch's history

```
git log [branchB]..[branchA]
```
Show the commits on branchA that are not on branchB

```
git log --follow [file]
```
Show the commits that changed 'file', even accross renames

```
git diff [branchB]..[branchA]
```
Show the difference of what is in branchA but not in branchB

```
git show [SHA]
```
Show any object in Git in human-readable format

Share and Update

```
git remote add [alias] [URL]
```
Add a Git URL as an alias

```
git fetch [alias]
```
Fetch down all the branches from that Git remote

```
git merge [alias]/[branch]
```
Merge remote branch into your current branch

```
git push [alias] [branch]
```
Transmit local branch commits to the remote repository branch

```
git pull
```
Fetch and merge any commits from the tracking remote branch

Version Control

```
git rebase [branch]
```
Apply any commits of current branch ahead of the specified one

```
git reset --hard [commit]
```
Clear staging area, rewrite working tree from the specified commit

```
git checkout -- [file]
```
Discard the changes to 'file' in the working directory

```
git checkout [commit id]
```
Revert to a previous commit

```
git revert [commit id]
```
Undo the specified commit

Tokens

```
git remote set-url origin
https://<NEW_TOKEN>@github.com/username/repo.git
```
Set the remote repository using a Personal Access Token

Tokens can also be used to authenticate in the command line, for example:

```
$ git clone https://github.com/USERNAME/REPO.git
Username: YOUR-USERNAME
Password: YOUR-PERSONAL-ACCESS-TOKEN
```

Programs

BS Computer Science

MS Data Science

Cheat Sheet

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