CS 520
Theory and Practice of Software Engineering
Spring 2022

In-class exercise 1: Advanced uses of Git

February 10, 2022
Types of VCS -- Distributed

- Each developer has their own repository.
  - Created by the developer, or
  - Cloned from an existing (remote) repository
- Developers work on their own repos
  - They can commit, branch, etc.
  - Activity is local unless it is pushed to remote repo
  - Remote activity is not seen until developer fetches from the remote repo
- Examples: Mercurial (hg), git
https://github.com/
Git -- Three Main Stages

1. **Committed**: Everything in the file is currently in the database
2. **Modified**: Changed the file but have not committed to the database
3. **Staged**: Marked the file for addition to the database in the next commit

Note that all of the above pertain to *tracked* files.
Git -- Git repo abstraction
Git -- Git Commit Object

basic functionality with sanity check done

Rico Angell committed on Oct 2, 2017

Showing 2 changed files with 108 additions and 64 deletions.

Initially entire file then diffs

```
29     def test_get_test_result():
    
    + from itertools import chain, combinations
    
    + for f in t._all_relevant_subclass():
    +     p = t.group_discrimination(i_fields=f)
    +     print f, "\--\", p
    
    - def test_group_discrimination():
    -     t = themis.Themis(xml_fname="settings.xml")
    -     print "Sex and Race: ", p
    -     print "Race: ", p
    -     print "Sex: ", p
    
    - def test_causal_discrimination():
    -     t = themis.Themis(xml_fname="settings.xml")
    -     p = t.causal_discrimination(i_fields=["Sex", "Race"])
```

Message

Parent

Hash

Author or committer along with date
Today’s in-class exercise

• Instructor: Heather Conboy

NOTE) May also get help from git man pages, lecture materials, and other on-line resources

https://people.cs.umass.edu/~hconboy/class/2022Spring/CS520/in-class1.pdf
Group selection

- Form 2-, 3-, or 4-person teams
  - If you need more members in your team, raise your hand and ask the instructor
- Use Moodle to self-select a team

- Select a team member responsible for submitting the completed exercise by next Thursday
Set up

1. Check if you are using a newer version of git (version >= 2.7.4)

2. Clone the basic-stats git repository:
   
git clone https://github.com/LASER-UMASS/basic-stats basic-stats

3. Create a (second) local fork by locally cloning again, this time from the first local clone:
   
git clone basic-stats basic-stats-fork


NOTE) Recommend taking notes as you go for writing up the answers to the seven (7) questions as well as capturing some of the git logs along the way