CS 520
Theory and Practice of Software Engineering
Spring 2020

In-class exercise 3
March 12, 2020

Git review: Tree

Each commit object (represented as a tree node) is associated with the following key attributes:

- Parent pointer (represented as an edge)
- Content (e.g., commit message)
- Meta-data (e.g., timestamp)
- Hash unique to this commit object

Git review: rebase and reset

- Two primary risks are:
  - Merge conflicts
  - Losing information permanently

Homework 1 (v1 and v2):
MVC evaluation criteria

- MVC architectural pattern where:
  - Model responsible for storing the current data and providing access to that data
  - View responsible for updating its visualization of the current model
  - Controller responsible for responding to the user’s commands (e.g., move) and updating the model (and perhaps its view) appropriately

- OO design (e.g., ThreeInARowBlock)
- Best practices (e.g., encapsulation, info hiding)
- Refactoring should generally move each original field/method into 1 new class
  - May need to split some methods into multiple new classes
Homework 1 (v2): Overview

- Can optionally submit a second version of homework 1
  - If so, you’ll have 3 homework grades to be averaged. If not, you’ll have only 2 grades.
- Homework 1 (v1) grades were posted Tuesday
- Due: Tuesday March 24, 2020, 9 AM EDT

Homework 1 (v2): More details

- Further redesign your application to support the MVC architectural pattern
- Reimplement the application to achieve that redesign
- Improve testing coverage
  - Add to or modify the v1 test cases targeting the MVC components
  - Add 4 more v2 test cases targeting the game rules

https://people.cs.umass.edu/~hconboy/class/2020spring/CS520/hw1-v2.pdf

Third in-class exercise

- On debugging
- Form 4-person teams
  - Use moodle to self-select a team; can do it before Thursday or on Thursday

Next class: Guest lecture

Title: “High-Quality Automated Program Repair”
Speaker: Manish Motwani is a PhD candidate in the CICS at the UMass Amherst, where he received the MS degree in 2018. His research involves studying large software repositories to learn interesting phenomena in software development and maintenance, and to use that knowledge to design novel automation techniques for testing and program repair.

http://people.cs.umass.edu/mmotwani