CS 471: Software Engineering
Spring 2018
Assignment-based Midterm 1 (7.5% of the final grade)

Due date: Wednesday, April 4, 2018 at end of day

1. Brief Description

The first midterm consists of a few practical assignments emphasizing advanced git features/concepts (e.g., rebase, "squash", 3-way-merge conflicts) and development workflows, as discussed in the lectures.

All assignments require:

- basic familiarity with git (e.g., initialize repository, create/checkout branches, submit commits, etc.), which was not taught in CS471
- understanding of the advanced git/workflow concepts discussed in class (see `CS471_S18_L03_AllParts.pdf` on Piazza)

2. Submission Details

For each assignment you should submit a report containing screenshots that focus on:

- the visualization of the output of a git command (e.g., "`git rebase master`") in the command line (see **Figure 1** below for an example). In the grading rubric, this type of screenshot will be referred to as GIT_COMMAND_LINE_OUTPUT

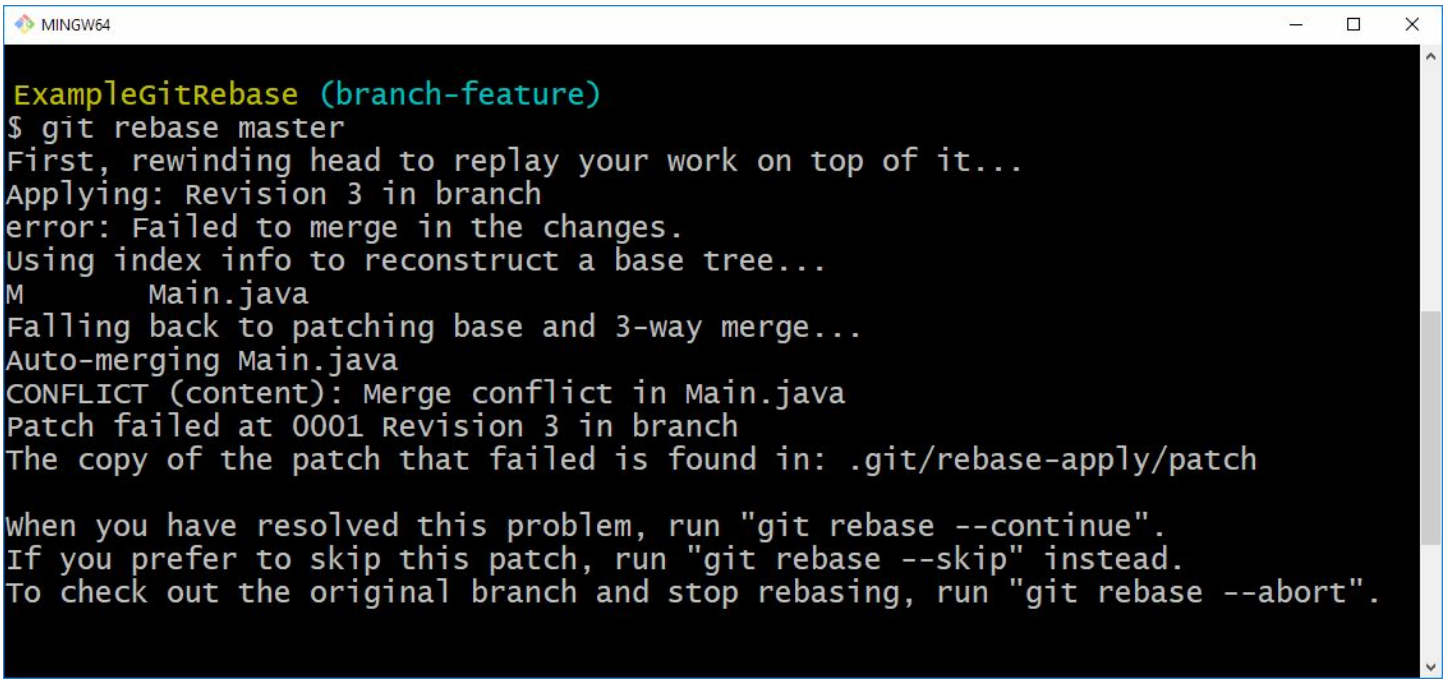

Figure 1: Example of visualizing the output of a git command in the command line

- the visualization of the current status of **all** branches (see **Figure 2** below for an example) using a Git GUI such as Sourcetree or equivalent (do not use `gitk` for visualizing the branches). In the grading rubric, this type of screenshot will be referred to as GIT_VISUALIZATION_ALL_BRANCHES
  - NOTE: **do not use git log visualizations** such as:

```
git log --oneline --graph --all
--pretty=format:'%C(yellow)%h%C(cyan)%d%C(white) %s%C(green) (%cr)
%C(bold blue)%an <%ae>%C(reset)'
```

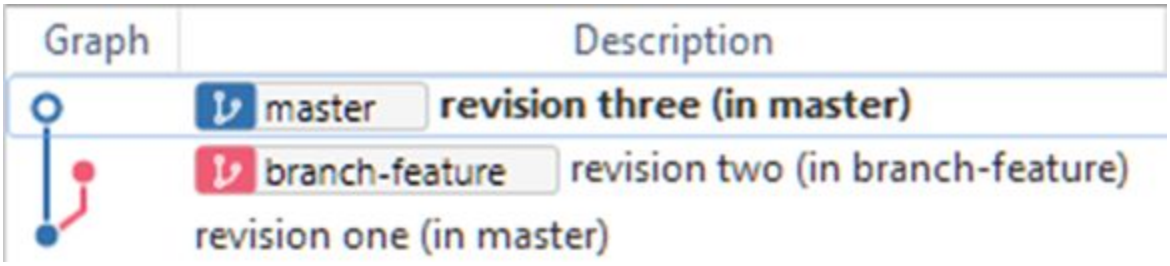

Figure 2: Example of visualizing all branches in a git repository

- the visualization of solving a merge conflict (see **Figure 3** below for an example) using a 3-way-merge conflict program such as Perforce P4Merge or equivalent. In the grading rubric, this type of screenshot will be referred to as GIT_MERGE_CONFLICT_VISUALIZATION

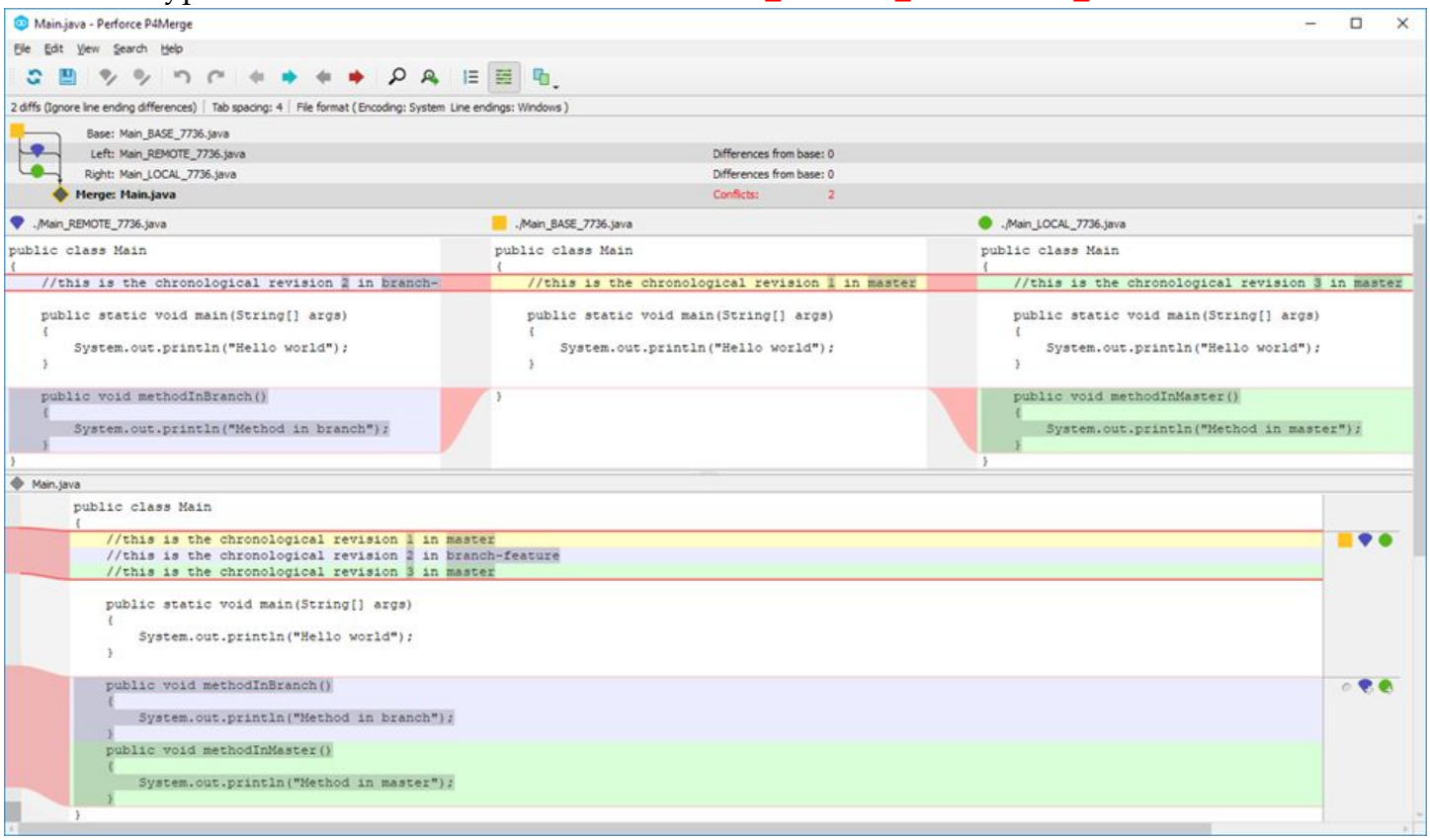

Figure 3: Example of solving a merge conflict for Main.java file using the 3-way-merge conflict tool

3. Assignments

Below is the link to the four assignments for this midterm and it is strongly recommended to complete them in the specified order (since new assignments build on the knowledge accumulated in the previous assignments).

1. CS471_Midterm1_Git_MergeConflict_3WayMerge.md //start with this one
2. CS471_Midterm1_Git_Rebase.md
3. CS471_Midterm1_Git_Squash.md
4. CS471_Midterm1_Git_TaskBranchWorkflow.md

4. Submission

Submit via Blackboard one report (pdf file) per assignment. There are 4 assignments on Blackboard with the name `Midterm1_[AssignmentName].`

Each report should be named `CS471_S18_Midterm1_[AssignmentName]_[LastName].pdf` and

should contain the information specified in the grading rubric below.

5. **Grading Rubric for Assignment 1 -** `CS471_Midterm1_Git_MergeConflict_3WayMerge.md`

The maximum points for this assignment representing 20% of the Midterm 1 grade is 100, and the points are distributed as follows:

Section	Points
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 3**	15
GIT_COMMAND_LINE_OUTPUT after completing **Step 4**	15
GIT_MERGE_CONFLICT_VISUALIZATION after completing **Step 5**	20
GIT_MERGE_CONFLICT_VISUALIZATION after completing **Step 6**	20
GIT_COMMAND_LINE_OUTPUT after completing **Step 8**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 8**	15
Penalty: Report does not clearly label each screenshot with the corresponding step in the assignment, or does not follow the specifications for the screenshots (up to -100 points)	

6. **Grading Rubric for Assignment 2 -** `CS471_Midterm1_Git_Rebase.md`

The maximum points for this assignment representing 20% of the Midterm 1 grade is 100, and the points are distributed as follows:

Section	Points
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 6**	15
GIT_COMMAND_LINE_OUTPUT after completing **Step 7**	5
GIT_MERGE_CONFLICT_VISUALIZATION after completing **Step 9**	10
GIT_COMMAND_LINE_OUTPUT after completing **Step 10**	5
GIT_COMMAND_LINE_OUTPUT after completing **Step 11**	10
GIT_MERGE_CONFLICT_VISUALIZATION after completing **Step 12**	15
GIT_COMMAND_LINE_OUTPUT after completing **Step 13**	5
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 14**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 15**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 16**	5
Penalty: Report does not clearly label each screenshot with the corresponding step in the assignment, or does not follow the specifications for the screenshots (up to -100 points)	

7. **Grading Rubric for Assignment 3 -** `CS471_Midterm1_Git_Squash.md`

The maximum points for this assignment representing 20% of the Midterm 1 grade is 100, and the points are distributed as follows:

Section	Points
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 5**	15
GIT_COMMAND_LINE_OUTPUT after completing **Step 7** (i.e., show the contents of the file where you specify which commits to pick/squash)	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 8**	15
GIT_MERGE_CONFLICT_VISUALIZATION after completing **Step 10**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 11**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 12**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 13**	10

Penalty: Report does not clearly label each screenshot with the corresponding step in the assignment, or does not follow the specifications for the screenshots (up to -100 points)	

8. **Grading Rubric for Assignment 4 -** `CS471_Midterm1_Git_TaskBranchWorkflow.md`

The maximum points for this assignment representing 40% of the Midterm 1 grade is 100, and the points are distributed as follows:

Section	Points
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 0**	5
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 1**	5
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 2**	10
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 3**	10
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 4**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 5**	10
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 6**	10
GIT_MERGE_CONFLICT_VISUALIZATION after completing **Step 7**	10
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 8**	15
GIT_VISUALIZATION_ALL_BRANCHES after completing **Step 9**	10
Penalty: Report does not clearly label each screenshot with the corresponding step in the assignment, or does not follow the specifications for the screenshots (up to -100 points)	