

Assignment Submission for ECEN 5813-001 (Principles of Embedded Software)

Topic: Version Control

Name: RUSHI JAMES MACWAN (Fall 2018 student)

Problem: 1

After running the said commands, the following output was observed which has been further briefly explained:

1. git log

By running this command on the Git command prompt window, the following output was observed:

```
C:\WINDOWS\system32\cmd.exe - git log
Microsoft Windows [Version 10.0.17134.285]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\rualjim\Documents\GitHub\ecen5813>git log
commit 451c844a6baf421e1330942349e542fb7a52264 (HEAD -> develop, origin/develop)
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 23:12:19 2018 -0600

    add my name.

commit c64a823afd4ceb094d6d9ccb7409a7e238d0af59
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 23:11:32 2018 -0600

    Add my .json file

commit db803cfffcb206e2a7871c4159c31565b9bc97d1
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 23:10:18 2018 -0600

    Changes made accordingly

commit 81483654320b0f21ec0457e36e2b1d0f3f33a3cd
Merge: 7469926 710aee0
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 22:51:45 2018 -0600

    Merge branch 'vigneshiyer' into develop

    This merge is done as per the assignment requirement.

commit 710aee0ab4620c247b17d5422a8fdb3f4726d500
Author: Vignesh Iyer <viyy1398@colorado.edu>
: ...skipping...
commit 451c844a6baf421e1330942349e542fb7a52264 (HEAD -> develop, origin/develop)
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 23:12:19 2018 -0600

    add my name.

commit c64a823afd4ceb094d6d9ccb7409a7e238d0af59
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 23:11:32 2018 -0600

    Add my .json file

commit db803cfffcb206e2a7871c4159c31565b9bc97d1
Author: Vignesh Iyer <viyy1398@colorado.edu>
Date: Fri Sep 14 23:10:18 2018 -0600

    Changes made accordingly

commit 81483654320b0f21ec0457e36e2b1d0f3f33a3cd
Merge: 7469926 710aee0
Author: Vignesh Iyer <viyy1398@colorado.edu>
```

This command execution shows all the latest data which contains the name of the authors who have committed to the repository along with the corresponding date & time of their submission. Furthermore, it also carries a small comment from each of them after the “Author:” and “Date:” heading. For example, “Changes made accordingly” which is written at the bottom is one such comment.

2. `git log --oneline`

By running this command on the Git command prompt window, the following output was observed:

```
C:\WINDOWS\system32\cmd.exe - git log --oneline
C:\Users\rualjim\Documents\GitHub\ecen5813>git log --oneline
451c844 (HEAD -> develop, origin/develop) add my name.
c64a823 Add my .json file
db803cf Changes made accordingly
8148365 Merge branch 'vigneshiyer' into develop
710aee0 This is a test message only
7469926 Final Commit
514a60c Updated by Deepesh
0fea502 Last test : Kiyasul
f90a8d7 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
6acb321 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
cd9395c Changes made by SIDDHANT JAJOO
626c934 Changes by mato2277
4450692 Changes made by Satya Mehta
c0db52b Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
b3bd2e7 Patched with fictional charecter details
4bc4011 Patched with identikey and name
ed2b63f This file has been patched with the favorite movie, tv show and game
0010d36 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
9d6391e updated favourites.json file
c1e9391 Merge branch 'feat-alexs_additions' into develop
742cd93 Added dast3095 info
c47c2de Resolved merge conflicts
c8ab235 Added favorites movie, TV show and game
b1a311b Added identikey and name to the json file
7cc28fd Created new json file with identikey as the file name and added superhero details to it
37c20f0 Adding my info in favorites.json
cfec3f0 Changes made by Sarthak Jain
2698296 Changes by Sarthak Jain
4a3bee5 Resolved conflicts in students.json file
7013c71 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
5597cd8 resolved conflict in students.json
3b80abb Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
ac22ce5 Modified 2 files, added 1 file
894297a Modified 2 files, added 1
2cbcb93 Added 1 new file and modified 2 files
8a9558e Required changes made for the case of swarupa de
35965b8 Updated students.json file
3abca16 adding stxal234.json and modifing favorites.json
991c3b3 Added my name
c37430c Modified students.json,favorites.json; Added new file: tach9916.json
e575630 adding steve to students.json
c2f3302 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
24e98b5 Adding Victor's changes
1298e44 Version control HW by Sanju Prakash Kannioth
1918c23 Bug Fix: JSON file clean up
47d4c6f Cleaning the json files to remove unresolved merge conflicts
639669f Adding favorites.json, students.json, issa8525.json
88bd7c3 Adding favorites.json, students.json, issa8525.json
cd29c52 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
2ce9e6f Version control assignment
36131c7 Updating Local Database
7496307 Adding my file
6652b89 Puneet's Changes to Files
fb4d3eb Changed by Vatsal Sheth
```

This command execution shows all the latest data which contains all the data regarding the subsequent modifications into the repository corresponding to a set of time instances. This log shows the online log/history of the repository which in other words depicts all the changes to the repository along with the names of the people who have made the changes. This data also includes the number of the files that have been

added/modified/deleted or have been merged/changed/updated by any individual. It thus provides a real-time view of the repository status.

3. `git log --oneline --graph`

By running this command on the Git command prompt window, the following output was observed:

```
C:\WINDOWS\system32\cmd.exe - git log --oneline --graph
C:\Users\rualjim\Documents\GitHub\ecen5813>git log --oneline --graph
* 451c844 (HEAD -> develop, origin/develop) add my name.
* c64a823 Add my .json file
* db803cf Changes made accordingly
* 8148365 Merge branch 'vigneshiyer' into develop

* 710aee0 This is a test message only
* 7469926 Final Commit
* 514a60c Updated by Deepesh
* 0fea502 Last test : Kiyasul
* f90a8d7 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop

* 6acb321 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
* 626c934 Changes by mato2277
* cd9395c Changes made by SIDDHANT JAJOO

* 4450692 Changes made by Satya Mehta
* c0db52b Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
* 0010d36 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
* 9d6391e updated favourites.json file

* b3bd2e7 Patched with fictional charecter details
* 4bc4011 Patched with identikey and name
* ed2b63f This file has been patched with the favorite movie, tv show and game

* c1e9391 Merge branch 'Feat-alexs_additions' into develop
* 742cd93 Added dast3095 info
* c47c2de Resolved merge conflicts
* 37c20f0 Adding my info in favorites.json
* c8ab235 Added favorites movie, TV show and game
* b1a311b Added identikey and name to the json file
* 7cc28fd Created new json file with identikey as the file name and added superhero details to it
* cfec3f0 Changes made by Sarthak Jain
* 4a3bee5 Resolved conflicts in students.json file
* 7013c71 Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
* 3b80abb Merge branch 'develop' of https://github.com/progrow/ecen5813 into develop
* 8a9558e Required changes made for the case of swarupa de
* 5597cd8 resolved conflict in students.json
* ac22ce5 Modified 2 files, added 1 file
```

This command execution shows all the operations that were carried out on the Git platform in real-time. The graph on the left side shows the various layers/check-ins over time which reflects the changes made to the repository. For an example, at the starting of the command execution, “Vigneshiyer” has added a .json file and the changes are made accordingly. Further, he has merged his own local branch into the develop branch or otherwise called as the master branch with access to the Git account of the professor.

4. `git show-ref`

By running this command on the Git command prompt window, the following output was observed:


```
C:\Users\rualjim\Documents\GitHub\ecen5813>
C:\Users\rualjim\Documents\GitHub\ecen5813>git show-ref
451c844a6baf421e1330942349e542fb7a52264 refs/heads/develop
e44b55644cfc4716c2b79845b0ca12e910233a78 refs/heads/master
e44b55644cfc4716c2b79845b0ca12e910233a78 refs/remotes/origin/HEAD
451c844a6baf421e1330942349e542fb7a52264 refs/remotes/origin/develop
e44b55644cfc4716c2b79845b0ca12e910233a78 refs/remotes/origin/master
C:\Users\rualjim\Documents\GitHub\ecen5813>
```

This command shows the reference branch of the repository or otherwise the 'develop' or 'master' branch of the repository. The various checksum codes on the left show the exact entries of this references into the repository which is stored and is readily accessible to all the clients.

5. gitk

By running this command on the Git command prompt window, the following output was observed:

```
C:\Users\rualjim\Documents\GitHub\ecen5813>gitk
C:\Users\rualjim\Documents\GitHub\ecen5813>
```

The screenshot displays the gitk graphical user interface. At the top, the title bar reads 'ecen5813: All files - gitk'. The menu bar includes 'File', 'Edit', 'View', and 'Help'. The left sidebar shows a commit history graph with nodes and branches. The main window is divided into two panes. The top pane shows a list of commits with columns for author, email, and date. The bottom pane shows a diff view of the file 'git-assignment/students_fa2018/students.json'. The diff shows changes made by Vignesh Iyer, including adding a new entry for 'Vignesh Iyer' to the JSON array.

| Author | Email | Date |
|----------------------------------|------------------------------|---------------------|
| Vignesh Iyer | <viy1398@colorado.edu> | 2018-09-14 23:12:19 |
| Vignesh Iyer | <viy1398@colorado.edu> | 2018-09-14 23:11:32 |
| Vignesh Iyer | <viy1398@colorado.edu> | 2018-09-14 23:10:18 |
| Vignesh Iyer | <viy1398@colorado.edu> | 2018-09-14 22:51:45 |
| Vignesh Iyer | <viy1398@colorado.edu> | 2018-09-14 22:50:36 |
| SumanHosmane | <suman.hosmane@colorado.edu> | 2018-09-14 16:21:10 |
| deepesh | <deso6761@colorado.edu> | 2018-09-14 15:54:01 |
| Kiyasul | <kiab6020@colorado.edu> | 2018-09-14 15:32:02 |
| SumanHosmane | <suman.hosmane@colorado.edu> | 2018-09-14 14:54:28 |
| jajoosiddhant | <sija6678@colorado.edu> | 2018-09-14 14:29:07 |
| Madhumitha Tolakanahalli Pradeep | <mato2277@c | 2018-09-14 14:06:31 |

SHA1 ID: 451c844a6baf421e1330942349e542fb7a52264

Find: commit containing: Search

Diff Old version New version Lines of context: 3 Ignore space change Line diff

Author: Vignesh Iyer <viy1398@colorado.edu> 2018-09-14 23:12:19
 Committer: Vignesh Iyer <viy1398@colorado.edu> 2018-09-14 23:12:19
 Parent: c64a823afd4ceb094d6d9ccb7409a7e238d0af59 (Add my .json file)
 Branches: develop, remotes/origin/develop
 Follows:
 Precedes:

add my name.

```
----- git-assignment/students_fa2018/students.json -----
index d645b5d..29e4ee8 100644
@@ -28,5 +28,6 @@
  "mato2277":{"file":"mato2277.json","name":"Madhumitha Tolakanahalli Pradeep"},
  "kiab6020":{"file":"kiab6020.json","name":"Riyasul Arif Abdul Majeeth"},
  "deso6761":{"file":"deso6761.json","name":"Deepesh Sonigra"},
+ "viy1398":{"file":"viy1398.json","name":"Vignesh Iyer"},
>>>>>> 6acb3210478920b2763e9109d42d4487ac39efb13
}
```

This command shows all the changes that are made to the repository. On selecting any of the changes, the bottom of the image shows the differences in the data file that was submitted. It provides the different versions: old, new as well as the differences in the data/code file. It also provides the number of lines that the difference/old/new version of the file contains. On the right hand side at the top, it shows the real-time details about the author who made relevant changes to the repository along with the date and time. The right side bottom shows the comment in the form of a patch file where it could even be a tree.

Problem: 2

After running the said commands, the following output was observed which has been further briefly explained:

1. git status

By running this command on the Git command prompt window, the following output was observed:

```
MINGW64/c:/Users/ruaijim/ecen5813/git-assignment/students_fa2018/hw-simple-change
Rushi James Macwan@LAPTOP-16PC6KNA MINGW64 ~/ecen5813/git-assignment/students_fa
2018/hw-simple-change (ruma2254branch)
$ git status
On branch ruma2254branch
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   favorites.json
    modified:   ../students.json
    new file:   ../students/ruma2254.json
Rushi James Macwan@LAPTOP-16PC6KNA MINGW64 ~/ecen5813/git-assignment/students_fa
```

Here the git status command shows the files that I have modified and have entered to the local branch of the repository. The said branch is 'ruma2254branch' which contains the two modified files named 'favorites.json', 'students.json' and the 'ruma2254.json' file that I created for the 'students_fa' folder. It shows the status of the files as modified or being added as a new file which helps explain the status of the local branch.

2. git status

By running this command on the Git command prompt window, the following output was observed:

```

C:\Users\rualjim\Documents\GitHub\ecen5813>git diff
diff --git a/git-assignment/students_fa2018/hw-simple-change/favorites.json b/git-assignment/students_fa2018/hw-simple-change/favorites.json
index dai8231..fc81ba3 100644
--- a/git-assignment/students_fa2018/hw-simple-change/favorites.json
+++ b/git-assignment/students_fa2018/hw-simple-change/favorites.json
@@ -152,6 +152,11 @@
     "show": "Walking Dead",
     "game": "Far Cry 4"
   },
+   "ruma2254": {
+     "movie": "Harry Potter and the Half Blood Prince",
+     "show": "The Big Bang Theory",
+     "game": "Age of Empires - The Age of Kings"
+   },
 }

>>>>>> 6acb3210478920b2763e9109d42d487ac39efb13
diff --git a/git-assignment/students_fa2018/students.json b/git-assignment/students_fa2018/students.json
index 29e4ee8..5bc771a 100644
--- a/git-assignment/students_fa2018/students.json
+++ b/git-assignment/students_fa2018/students.json
@@ -29,5 +29,6 @@
  "kiab6020": {"file": "kiab6020.json", "name": "Kiyasul Arif Abdul Majeeth"},
  "deso6761": {"file": "deso6761.json", "name": "Deepesh Sonigra"},
  "viyy1398": {"file": "viyy1398.json", "name": "Vignesh Iyer"},
+ "ruma2254": {"file": "ruma2254.json", "name": "Rushi James Macwan"},
 }

>>>>>> 6acb3210478920b2763e9109d42d487ac39efb13
}

C:\Users\rualjim\Documents\GitHub\ecen5813>

```

This command has been run on the GitHub desktop version and this particular command shows all the differences that I have made to the local branch which yet remains to be staged and committed to the repository as per the guidelines provided in the assignment. The above screenshot shows the movie, show and game values that I have entered and stored to my ruma2254.json file. It also shows the concurrent activities which portrays the data that other members have entered just before my entry. It depicts the file assignments that are done as part of the change. Finally, it also shows some other values that have been concurrently added to the repository which has been fetched by the local repository in real-time which is one of the primary features of Git.