Lab #4: Git Exercises

Part 1: Individual Exercises

To complete this Lab you should have access to the Local Git Repository and to a registered GitHub account. You should have a remote Repository on GitHub called **Lab4_Semester3.** Link this repository to Git.

1. Go to the ~/Project-Semsester3 directory in Git Bash

You have already initialised a git repo in this directory. Check git log command output in that directory

$ cd ~/Project-Semsester3

$ git log

2. Create a new branch named “Lab4”. And make sure to **checkout** the branch.

4. Using **echo** command, create 4 files: Hello1.txt, Hello2.txt, Hello3.txt, Hello4.txt. Use any text that you wish.

5. Add and commit all files to the repository. Check the log after the commit.

6. Create the following text file “LionAndMouse.txt” using the Nano editor.

The Lion and the Mouse

A lion, resting in the forest, woke to the tiny scuttling of a mouse running across his nose. The lion, roused from his nap, angrily grabbed the mouse, intending to crush it. The mouse begged for its life, promising to repay the lion's kindness one day. The amused lion, though skeptical, spared the mouse.

$ nano LionAndMouse.txt

7. Add and commit this file to the Repository

$ git add .

$ git commit -m "Added the lion and mouse story – Part 1"

8. Check git log command output.

9. Add the following text to the file “LionAndMouse.txt”. Then add and commit the file to the Repository with the commit comment **"Added the lion and mouse story – Part 2"**

Later, the lion was caught in a hunter's net. Unable to free himself, he roared for help. The mouse, hearing his distress, remembered the lion's kindness. Running to the net, she gnawed through the ropes, freeing the lion. The lion was amazed that the small mouse could help him and the mouse reminded him that even the smallest can make a difference.

10. Check **git log** command output

11. Rename Hello1.txt to Hello1A.txt

12. Add one extra line ("NUIST is the best!") to each of the .txt files. Add and commit to the repository.

13. Check git log command and redirect (>) the output to a file **myCurrentLog.txt**

14. List the changed files using the --name-only option with the git log command

    $ git log --name-only

15. Execute the git log command to display the logs in compact way (one log per line)?

    $ git log --oneline

16. Run the **git status** and **git log** commands

17. List the last few commits alone using the **--max-count** option

    $ git log -n 3

    $ git log --max-count 3

18. Run **git log -n 1** command

    $ git log -n 1

    $ git log --max-count 1

19. Submit the **myCurrentLog.txt** file to Moodle

20. Merge the **Lab4** branch in master branch

21. Update the Remote Repository and delete branch (from local and remote).

Part 2: Group Exercises

You will complete these exercises in a group of 3.

1. Setup

a) Create a new Repository directory for your group. Eg **Group1_Semester3**, **Group2_Semester3** , ... **GroupN_Semester3**.

b) Initialise a git repo for your group in this directory

c) Create a new branch for your group (example: "Lab4_Group1). And make sure to **checkout** the branch.

d) Using **echo** command, create 3 files: Test1.txt, Test2.txt, Test3.txt. Each file should contain the NAME and STUDENT ID of one member of the group.

e) Add and commit all files to the repository. Check the log after the commit.

f) Edit the .txt files and include the heading "LAB 4 - GROUP EXERCISES" in each file.

g) Add and commit all files to the repository.

h) Get each user to add a message to each of the files in the repository. Add and commit all files to the repository. Check the log after the commit.

i) Create a Remote repository for your group on GitHub (Select **<u>one</u>** group members GitHub account for this task). Link each of the teams local Git repository to this Remote origin source.

j) Push your local Repository to the origin.

k) Execute a **Pull** command on the remote repository on GitHub. Report on the status of the Repository and the Git Log. Explain the output.

2. Push & Pull

a) Each member of the team will begin by executing a **Pull** command on the remote repository on GitHub

b) Copy the file "LionAndMouse.txt" to your repository. Add and Commit.

c) Each member of the team will add their Name and Student ID to the start of the file "LionAndMouse.txt".

d) Each member of the team will **commit** and then **push** their file to the remote repository.

e) Repeat a **Pull** command on the remote repository on GitHub. Report on the status of the Repository and the Git Log. Explain the output.