Ex4 - Branches of the same tree

Please read the instructions carefully before completing this exercise.

In this exercise we will learn how to work with branches. As a reminder, Git branches are independent streams of work that can be created and merged at any point in time. Branches are usually used to separate different features development processes, keep the production environment away from other versions of the code and more.

Note: This exercise uses the terms “repo A” and “repo B” as defined in the previous exercise.

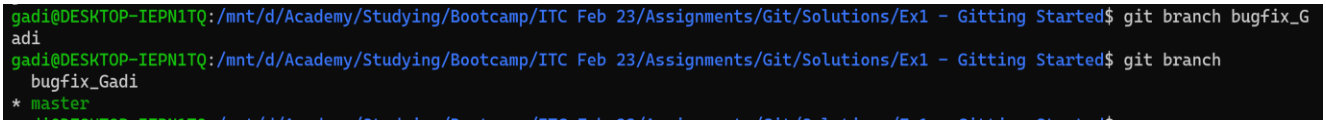
Please submit your answer as a PDF file. For each question, include in your answer the question number, the command(s) you used to solve the question, and the output of the command(s) (text or screenshot).

Part 1: Making a New Branch

Questions:

1. Using `git --version`, report the version number of Git that you are using to solve this exercise.
   git version 2.25.1

2. In repo A, use a Git command to create a new branch named `bugfix_[NAME]`, where in place of `_[NAME]` you should write your first name.



3. Use a Git command to list all branches in your repository. Which branch is currently active? Which one does HEAD point to?

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git branch bugfix_G
adi
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git branch
  bugfix_Gadi
* master
```

Master ntach is currently active

4. Use a Git command to check out the new branch.

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git checkout bugfix
_Gadi
Switched to branch 'bugfix_Gadi'
```

5. Repeat question 3 now that the new branch is checked out.

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git branch
* bugfix_Gadi
  master
```

The bugfix_Gadi branch is active

6. On your new branch, make some changes to the file `hello_world.txt`. Commit your changes but do not push them yet.

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ vim hello_world.txt

gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git add hello_world
.txt
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git commit -m "1st
commit of bugfix_Gadi btanch"
[bugfix_Gadi 457f18d] 1st commit of bugfix_Gadi btanch
 1 file changed, 4 insertions(+), 4 deletions(-)
```

7. Check out the main branch and open the file. What do you see? Are you changes from the last question visible in the file?

From the main branch file hello_world.txt wasn't edited. Do not see the changes were maded in question 6.

8. Check out the new branch again and push it to GitHub.

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ git push origin bug
fix_Gadi
Username for 'https://github.com': Gadi-G-Ezer
Password for 'https://Gadi-G-Ezer@github.com':
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 309 bytes | 51.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'bugfix_Gadi' on GitHub by visiting:
remote:      https://github.com/Gadi-G-Ezer/Git_HW/pull/new/bugfix_Gadi
remote:
To https://github.com/Gadi-G-Ezer/Git_HW.git
 * [new branch]      bugfix_Gadi -> bugfix_Gadi
```

Advanced note: Remember that you checked out different commits of the same branch (the `master` branch) in previous exercises? Now you are using the exact same Git command for checking out different branches. Actually, checking out different commits of the same branch is like creating a new imaginary branch without a name that points to the checked out commit.

Part 2: Pulling Your Colleague's Branch

Questions:

9. **Once your colleague from the previous exercises has finished Part 1 above,** navigate to repo B and fetch all remote changes with `git fetch --all`. Use a Git command to list the branches in repo B, and notice the new branch that was created by your colleague. Document the command and explain its output in your answer.

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/Ex1 - Gitting Started$ cd ../clone_gadiasi
a7/
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ ls
g_copy_hello_world.txt  g_hello_world.txt
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ vim g_hello_world.txt
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git fetch --all
Fetching origin
remote: Enumerating objects: 13, done.
remote: Counting objects: 100% (13/13), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 9 (delta 5), reused 8 (delta 4), pack-reused 0
Unpacking objects: 100% (9/9), 1.04 KiB | 10.00 KiB/s, done.
From https://github.com/Gadiasia/HOME_WORK_ITC
   06c1286..7fd129b  master           -> origin/master
 * [new branch]      bugfix_gadiasia7 -> origin/bugfix_gadiasia7
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git branch
* master
```

Can see that fetch command downloaded remote repo new file and branches however it was not yet merged into the local repo. Therefore git branch command doesn't show the new branch locally.

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git branch -r
  origin/HEAD -> origin/master
  origin/bugfix_gadiasia7
  origin/master
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git switch bugfix_gadiasi
a7
Branch 'bugfix_gadiasia7' set up to track remote branch 'bugfix_gadiasia7' from 'origin'.
Switched to a new branch 'bugfix_gadiasia7'
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git branch
* bugfix_gadiasia7
  master
```

Using "git branch -r" command shows us the branches on the remote repo so we can switch to the new repo locally and see it using "git branch" command that shows us the branches in local repo we are at.

10.Use a Git command to inspect the difference between the two branches in repo B

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git diff master bugfix_ga
diasia7
diff --git a/g_hello_world.txt b/g_hello_world.txt
index 2324999..74b6195 100644
--- a/g_hello_world.txt
+++ b/g_hello_world.txt
@@ -1,8 +1,9 @@
-Lorem ipsum dolor sit amet, consectetuer adipiscing elit.
-Aerfgdet5-7nean commodo ligula eget dolor.
-Aeneadfgb90-hnn massa.
-Cum sociis natoque aaazzzaaazzzaaazzz penatibus et magnis dis parturient montes, nascetur ridiculus mus.
-Donec quam felis, ultricies nec, pellentesque eu, pretium quis, sem.
-Nulla consequat massa quis enim.
-Donec pede justo, fringilla vel, aliquet nec, vulputate eget, arcu.
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```

11.Merge the new branch in repo B **into** the main branch, and push this change to GitHub. Make sure that you updated the correct branch – which branch should be updated, and why?

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git checkout master
Switched to branch 'master'
Your branch is behind 'origin/master' by 2 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git branch
  bugfix_gadiasia7
* master
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git merge bugfix_gadiasia
7
Updating 06c1286..cc905df
Fast-forward
 g_hello_world.txt | 15 ++++++++-------
 1 file changed, 8 insertions(+), 7 deletions(-)
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git branch
  bugfix_gadiasia7
* master
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ vim g_hello_world.txt
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git add g_hello_world.txt

gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```

```
gadi@DESKTOP-IEPN1TQ:/mnt/d/Academy/Studying/Bootcamp/ITC Feb 23/Assignments/Git/Solutions/clone_gadiasia7$ git push origin master
Username for 'https://github.com': Gadiasia
Password for 'https://Gadiasia@github.com':
Total 0 (delta 0), reused 0 (delta 0)
To https://github.com/Gadiasia/HOME_WORK_ITC.git
   7fd129b..cc905df  master -> master
```

the master branch should be updated to have the last and most updated version of g_hello_word.txt file (i.e. the version that is on the branch bugfix_gadiasia7).

Good luck!