LAB ASSIGNMENT NO -03

Aim: To perform various Git operations.

➢ What is Git?

Git is an open source version control system that works locally to help developers work together on software projects that matter. This cheat sheet provides a quick reference to commands that are useful for working and collaborating in a Git repository (repo)

➢ Git commands:

Initializing

Starting up Git within a project and getting it connected.

- git init-Initializes (or starts) your current working directory (folder) as a Git repository (repo).
- git clone https://www.github.com/username/repo-name-Copies an existing Git repo hosted remotely.
- git remote o git remote-v : Shows your current Git directory's remote repo. Use the-v flag for more info.
- git remote add upstream: https://www.github.com/username/repo-name: Adds the Git upstream to a URL.

Staging

Creating files staged after modifying a file and marking it ready to go in the next commit.

- git status: Checks the status of your Git repo including files added that are not staged.
- git add . or git add my_script.js : Stages modified files. If you make changes that you want included in the next commit, you can run add again. Use "git add ." for all files to be staged, or specific files by name.
- git reset my_script.js :Removes a file from staging while retaining changes within yout working directory.

Committing

Recording changes made to the repo.

- git commit –m "commit message" : Commits stages files with a meaningful commit message so hat you and others can track

commits

- git commit –am “Commit message” : Condenses all tracked files by committing them in one step.
- git commit –amend –m “New commit message” : Modifies your commit message.

Branching

Isolating work and managing feature development in one place.

- git branch: Lists all current branches. An asterisk (*) will appear next to your currently active branch.
- git branch *new-branch:* Creates a new branch. You will remain on your currently active branch until you switch to the new one.
- git checkout *another –branch* : Switches to any existing branch and checks it out into your current working directory.
- git checkout –b *new-branch*: Consolidates the creation and checkout of a new branch.
- git branch –d *branch –name*: Deletes a branch

Collaborating and Sharing

Downloading changes from another repository or sharing changes with the larger codebase.

- git push *origin main*: Pushes or sends your local branch commits to the remote repo.

  Note: some repos use master instead of main in their commands.
- git pull : Fetches and merges any commits from the tracking remote branch.
- git merge *upstream/main* : Merges the fetched commits.

Showing changes

See changes between commits, branches and more.

- git diff --staged : Compares modified files that are in the staging area.
- git diff a-branch . . b-branch : Displays the diff of what is in ‘a-branch’ but is not in ‘b-branch’.
- git diff 61ce3e6 . . e221d9c : Uses commit id to show the diff between two specific commits.

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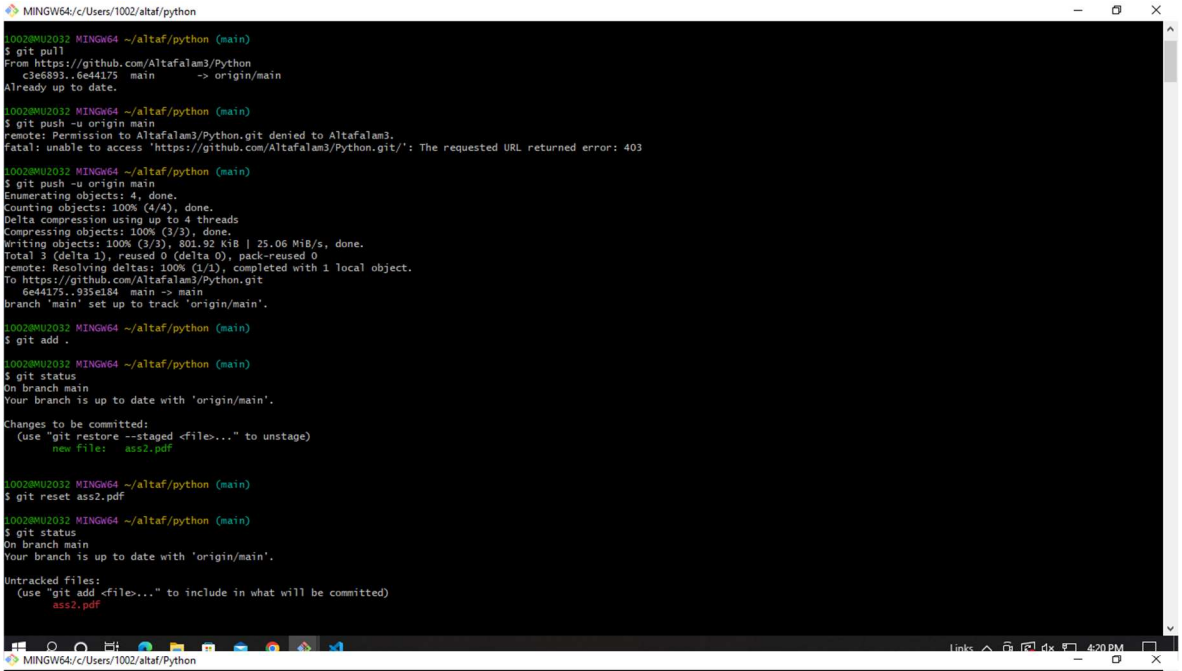

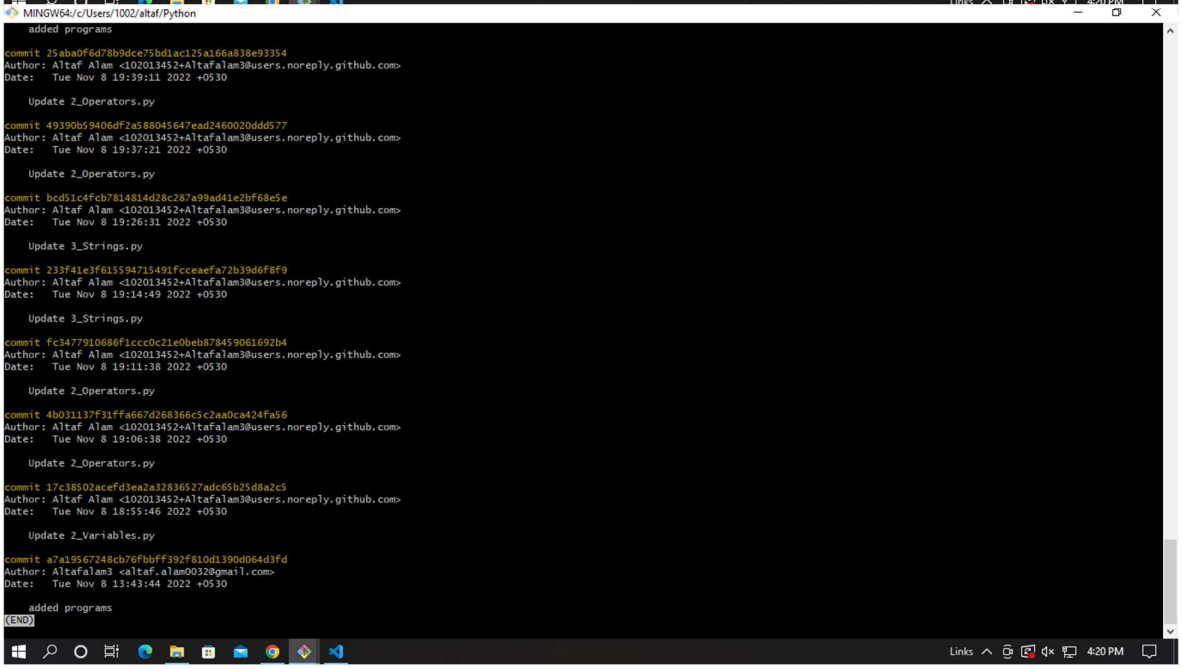

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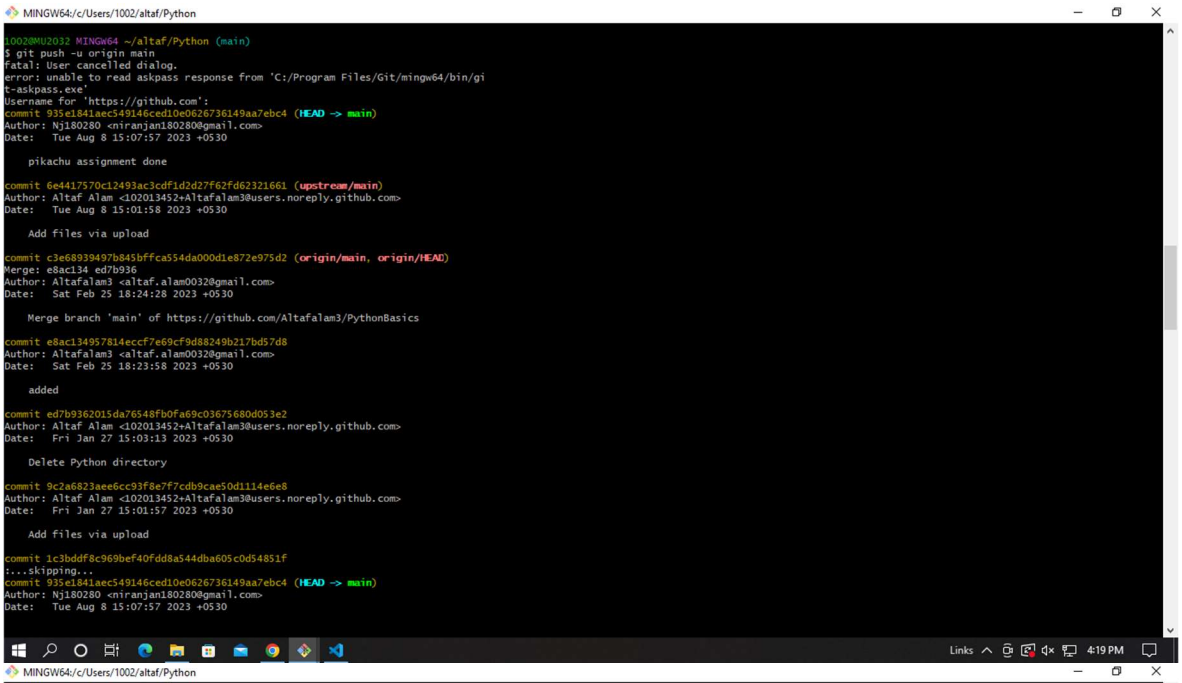

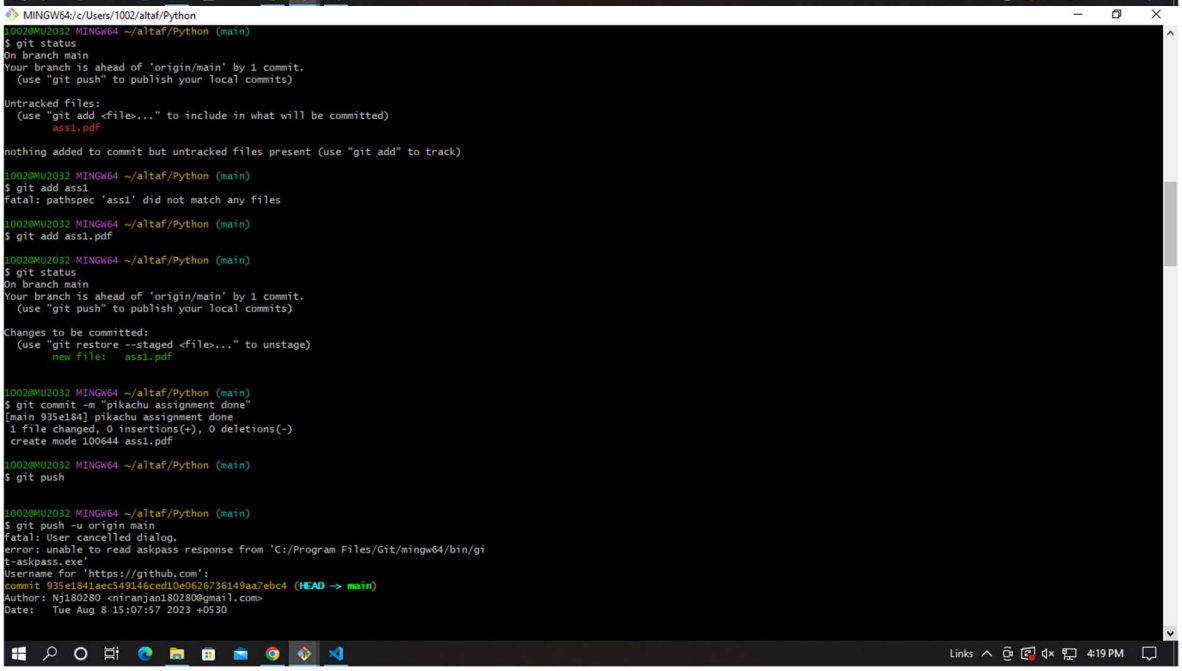

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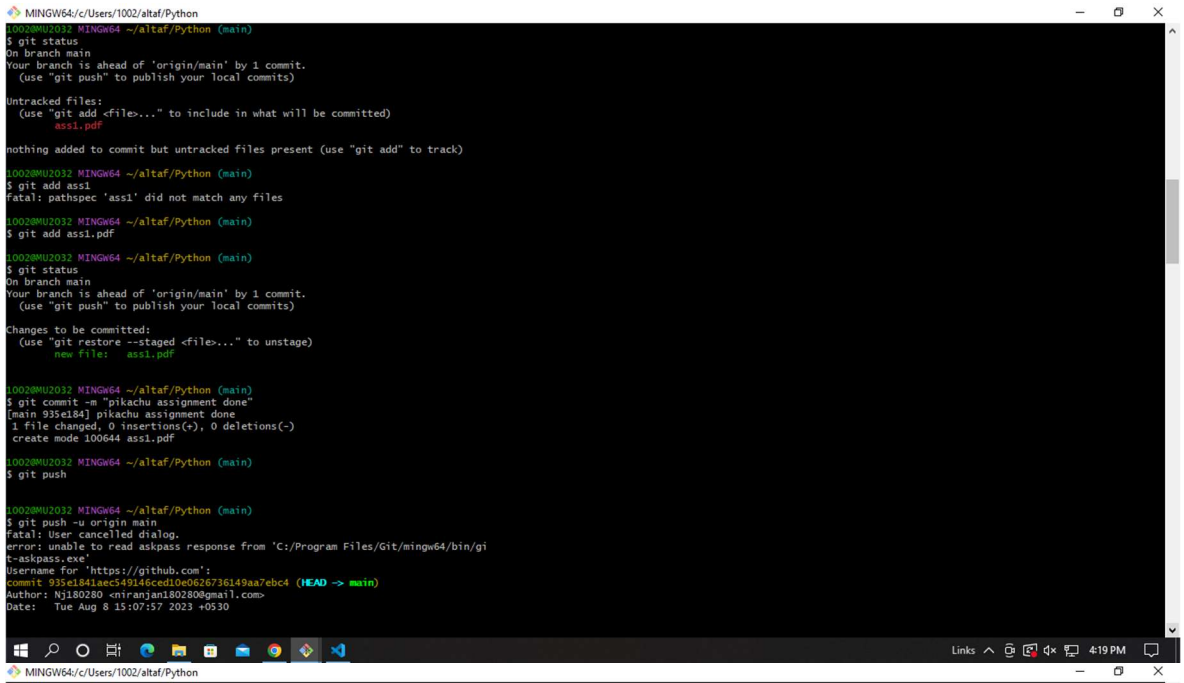

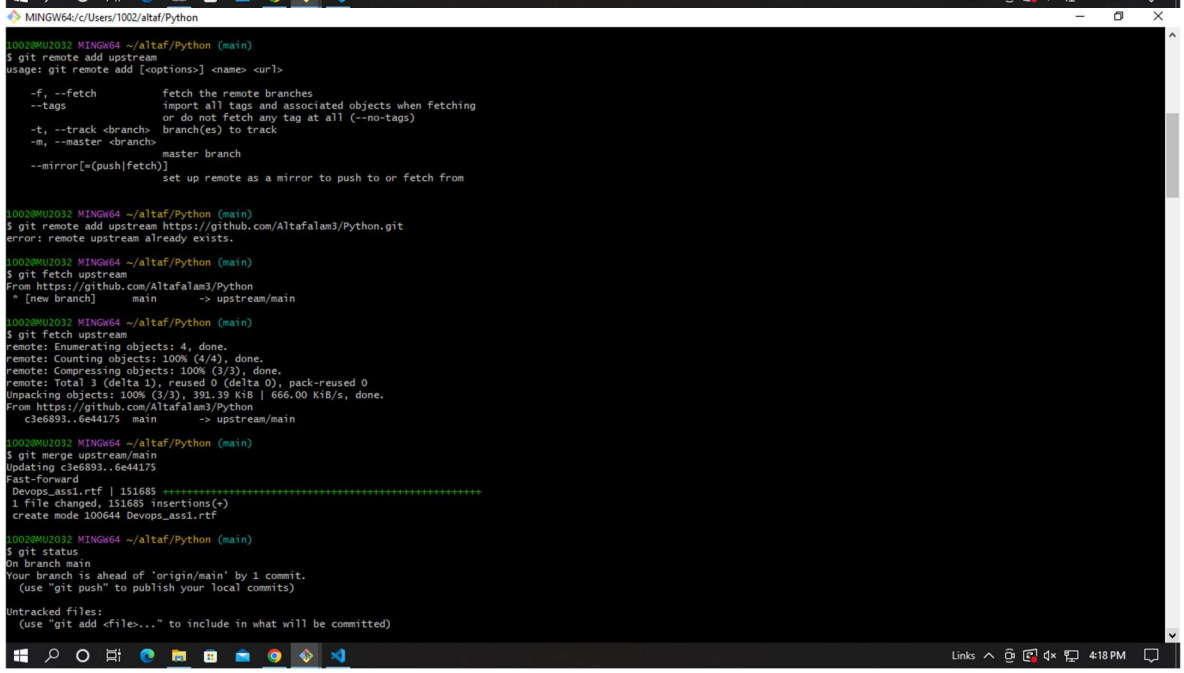

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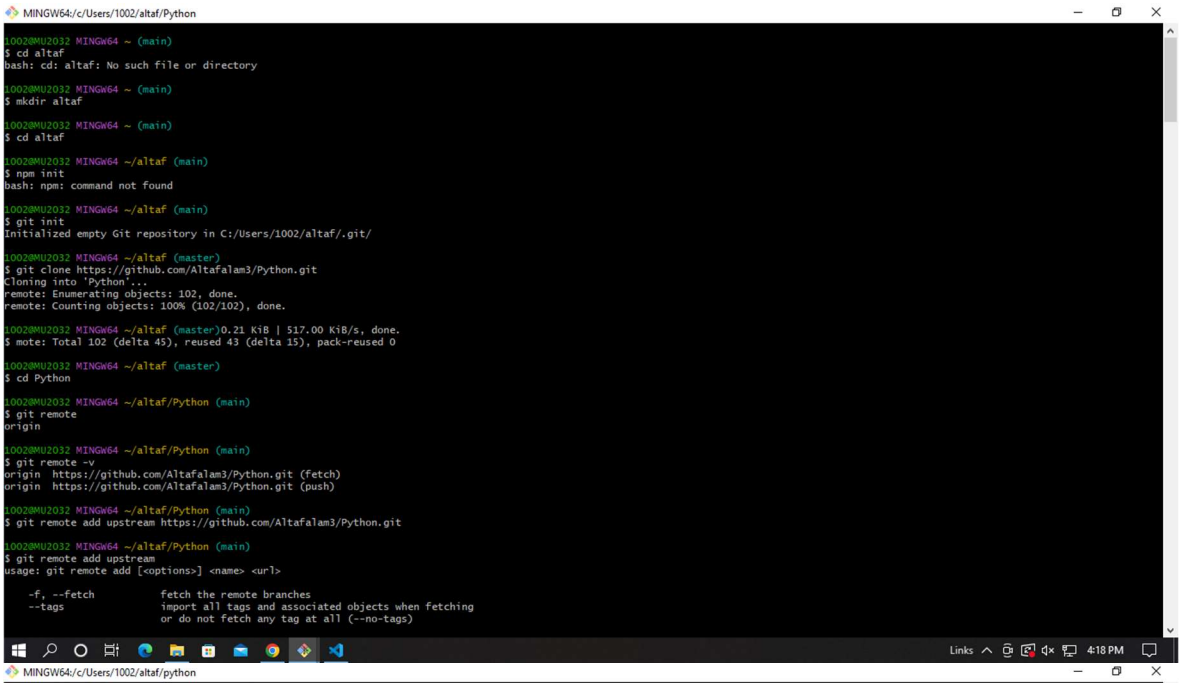

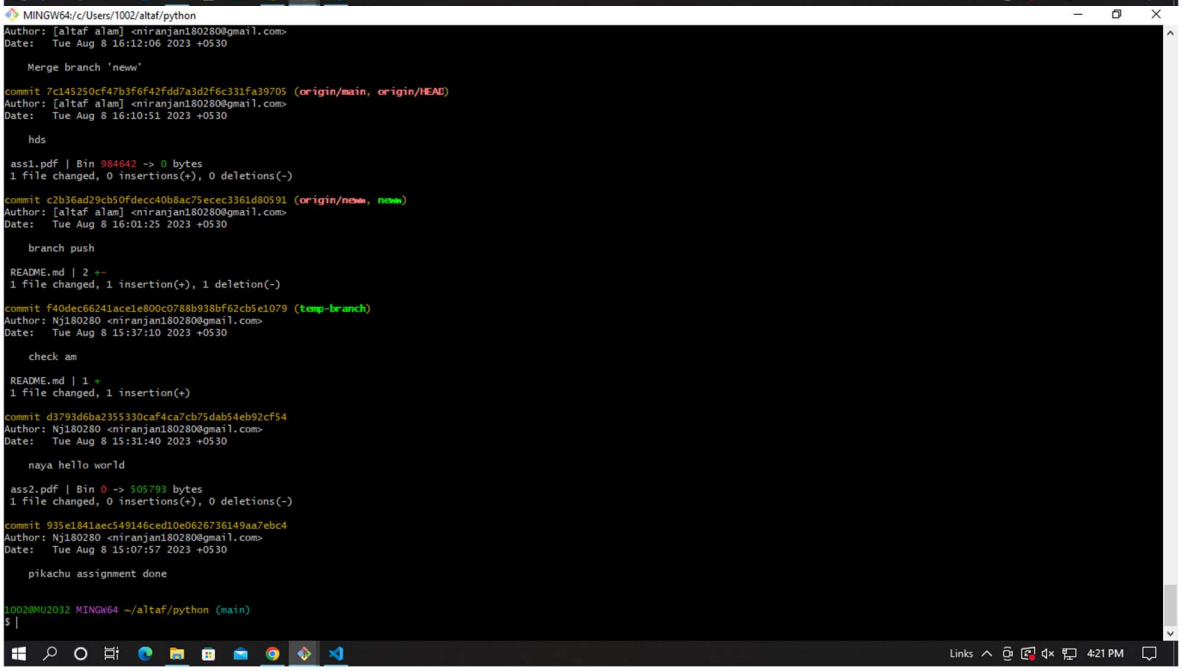

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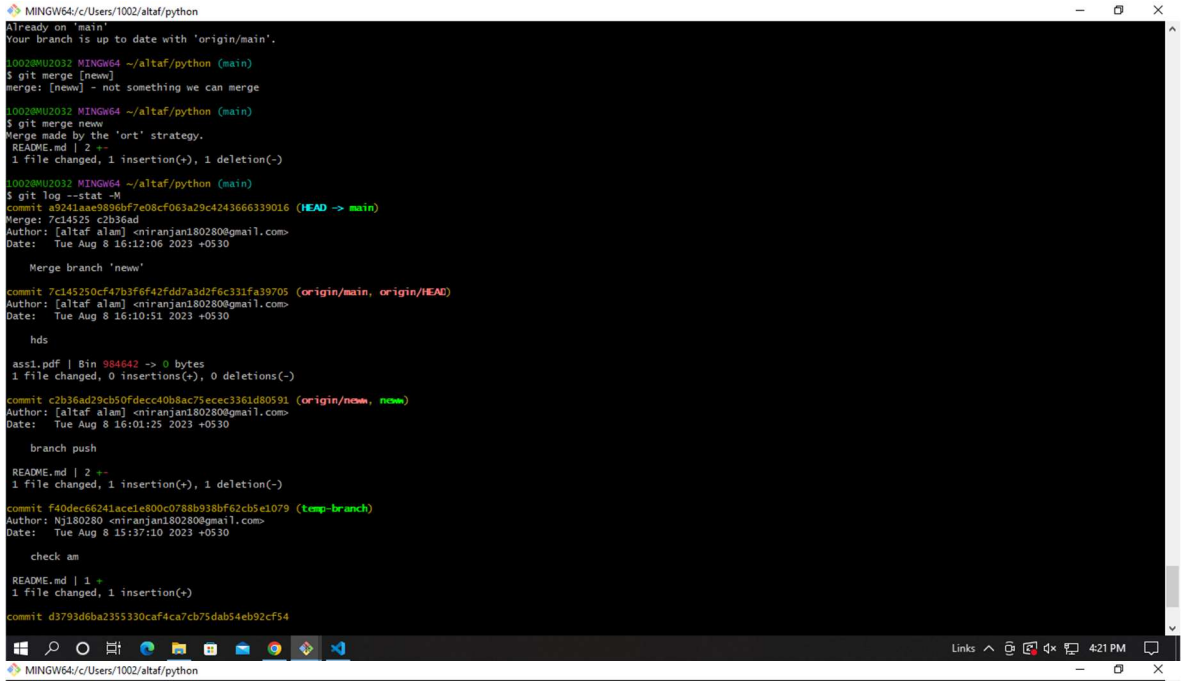

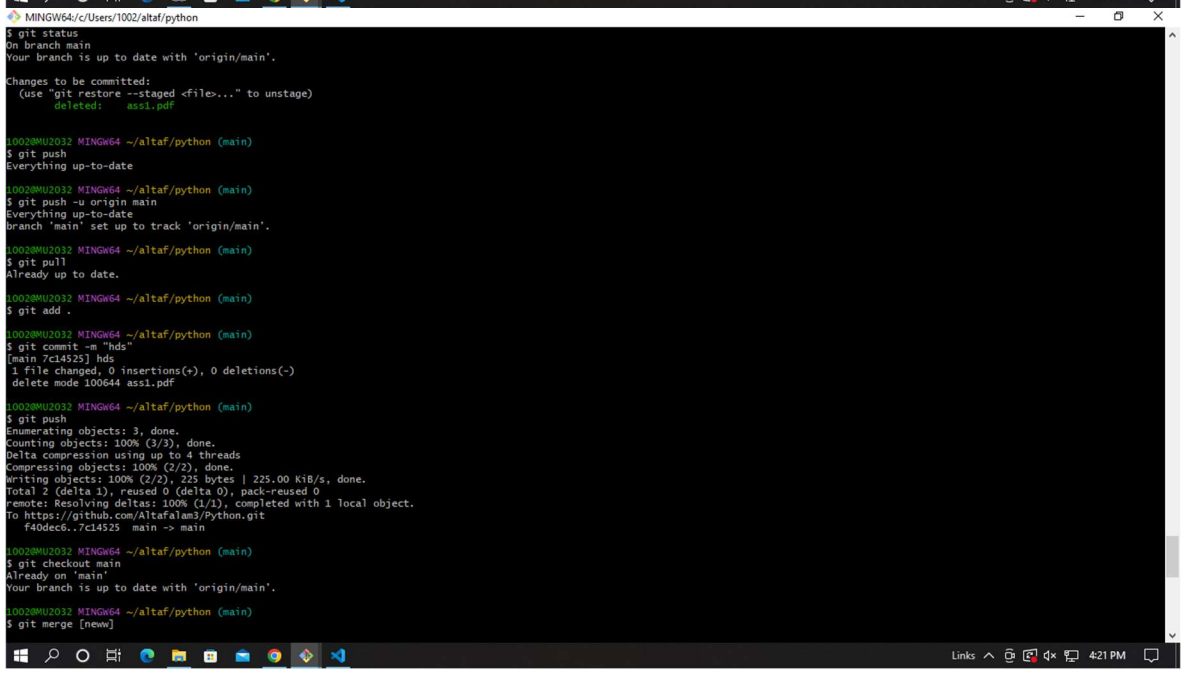

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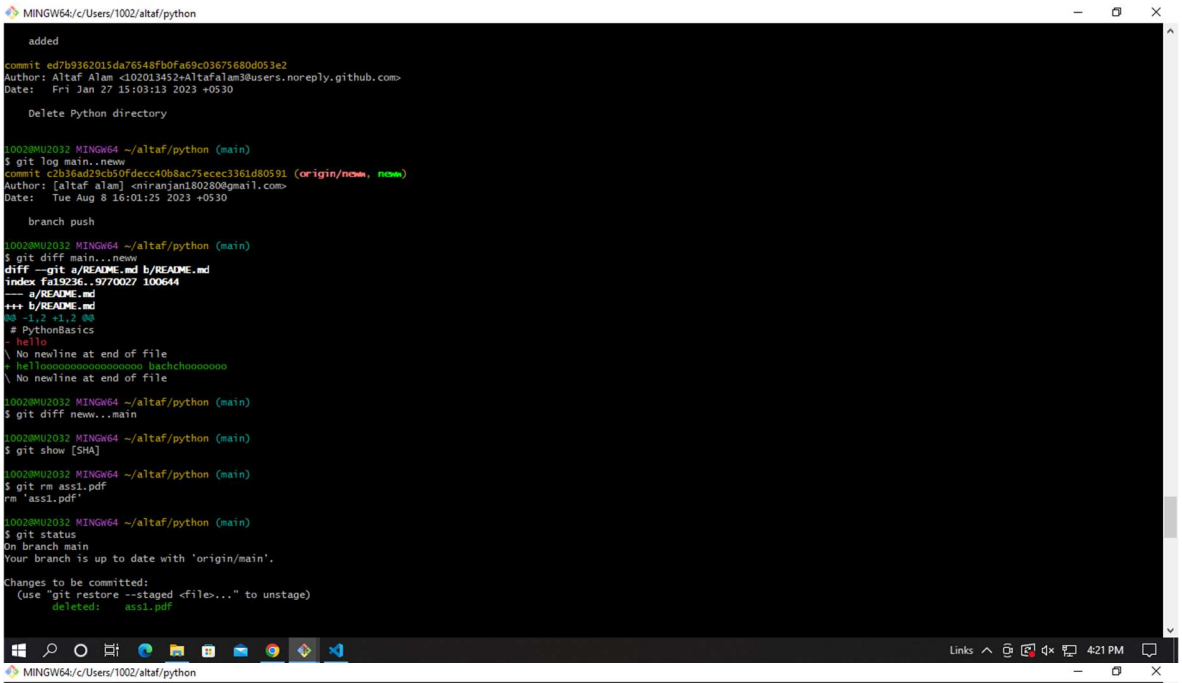
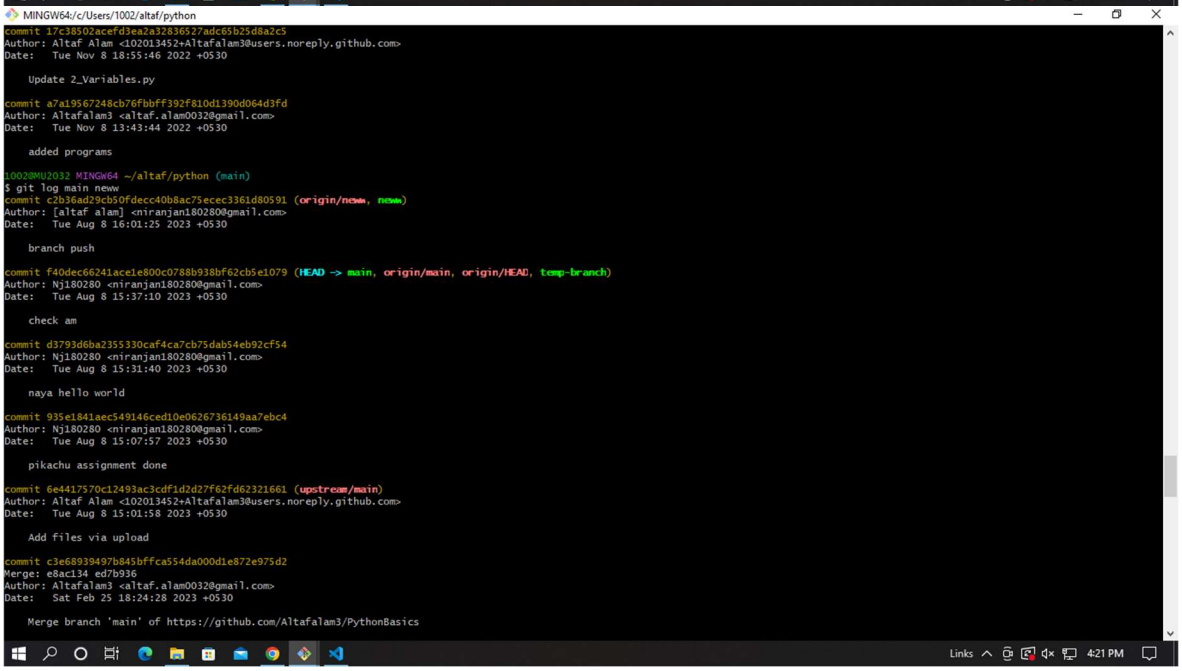


```
MINGW64:/c/Users/1002/altaf/python

    added

commit ed7b9362015da76548fb0fa69c03675680d053e2
Author: Altaf Alam <102013452+Altafalam3@users.noreply.github.com>
Date:   Fri Jan 27 15:03:13 2023 +0530

    Delete Python directory


10020MU2032 MINGW64 ~/altaf/python (main)
$ git log main..neww
commit c2b36ad29cb50fdecc40b8ac75ecec3361d80591 (origin/neww, neww)
Author: [altaf alam] <niranjan1802800@gmail.com>
Date:   Tue Aug 8 16:01:25 2023 +0530

    branch push

10020MU2032 MINGW64 ~/altaf/python (main)
$ git diff main...neww
diff --git a/README.md b/README.md
index fa19236..9770027 100644
--- a/README.md
+++ b/README.md
@@ -1,2 +1,2 @@
 # PythonBasics
- hello
\ No newline at end of file
+ hellooooooooooooooo bachchooooooo
\ No newline at end of file

10020MU2032 MINGW64 ~/altaf/python (main)
$ git diff neww...main

10020MU2032 MINGW64 ~/altaf/python (main)
$ git show [SHA]

10020MU2032 MINGW64 ~/altaf/python (main)
$ git rm ass1.pdf
rm 'ass1.pdf'

10020MU2032 MINGW64 ~/altaf/python (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        deleted:    ass1.pdf
```



```
MINGW64:/c/Users/1002/altaf/python

commit 17c38502acefd3ea2a32836527adc65b25d8a2c5
Author: Altaf Alam <102013452+Altafalam3@users.noreply.github.com>
Date:   Tue Nov 8 18:55:46 2022 +0530

    Update 2_Variables.py

commit a7a19567248cb76fbbff392f810d1390d064d3fd
Author: Altafalam3 <altaf.alam0032@gmail.com>
Date:   Tue Nov 8 13:43:44 2022 +0530

    added programs

10020MU2032 MINGW64 ~/altaf/python (main)
$ git log main neww
commit c2b36ad29cb50fdecc40b8ac75ecec3361d80591 (origin/neww, neww)
Author: [altaf alam] <niranjan1802800@gmail.com>
Date:   Tue Aug 8 16:01:25 2023 +0530

    branch push

commit f40dec66241ace1e800c0788b938bf62cb5e1079 (HEAD -> main, origin/main, origin/HEAD, temp-branch)
Author: Nj180280 <niranjan180280@gmail.com>
Date:   Tue Aug 8 15:37:10 2023 +0530

    check am

commit d3793d6ba2355330caf4ca7cb75dab54eb92cf54
Author: Nj180280 <niranjan180280@gmail.com>
Date:   Tue Aug 8 15:31:40 2023 +0530

    naya hello world

commit 935e1841aec549146ced10e0626736149aa7ebc4
Author: Nj180280 <niranjan180280@gmail.com>
Date:   Tue Aug 8 15:07:57 2023 +0530

    pikachu assignment done

commit 6e4417570c12493ac3cdf1d2d27f62fd62321661 (upstream/main)
Author: Altaf Alam <102013452+Altafalam3@users.noreply.github.com>
Date:   Tue Aug 8 15:01:58 2023 +0530

    Add files via upload

commit c3e68939497b845bffca554da000d1e872e975d2
Merge: e8ac134 ed7b936
Author: Altafalam3 <altaf.alam0032@gmail.com>
Date:   Sat Feb 25 18:24:28 2023 +0530

    Merge branch 'main' of https://github.com/Altafalam3/PythonBasics
```

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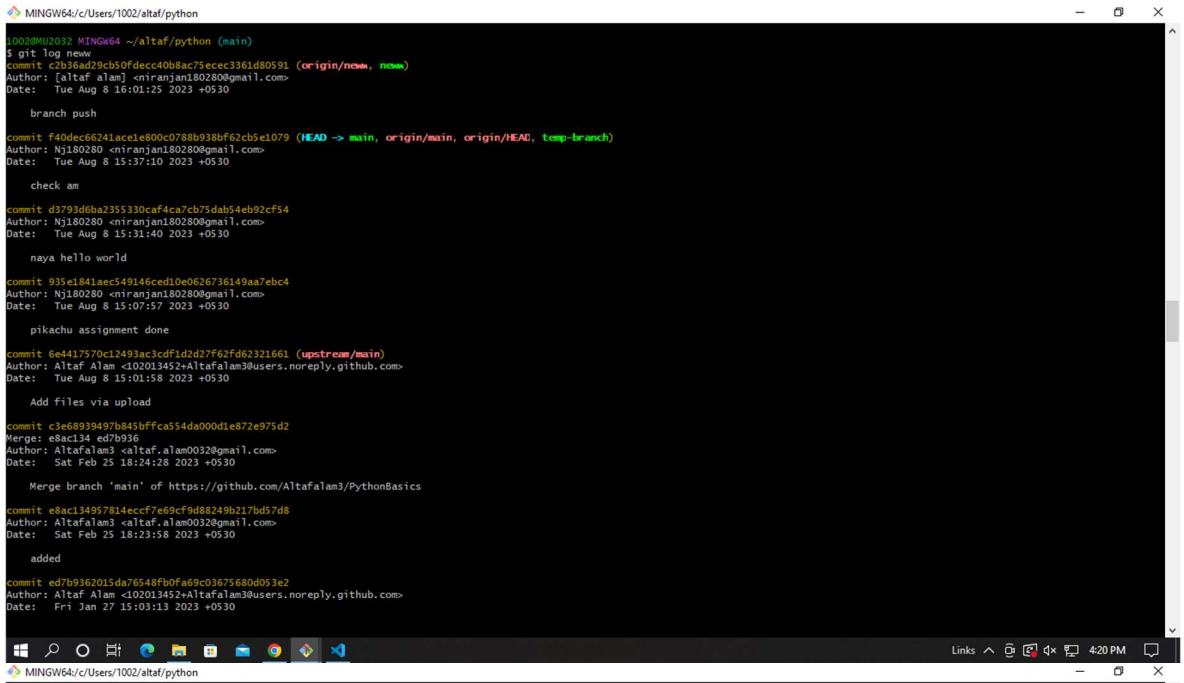

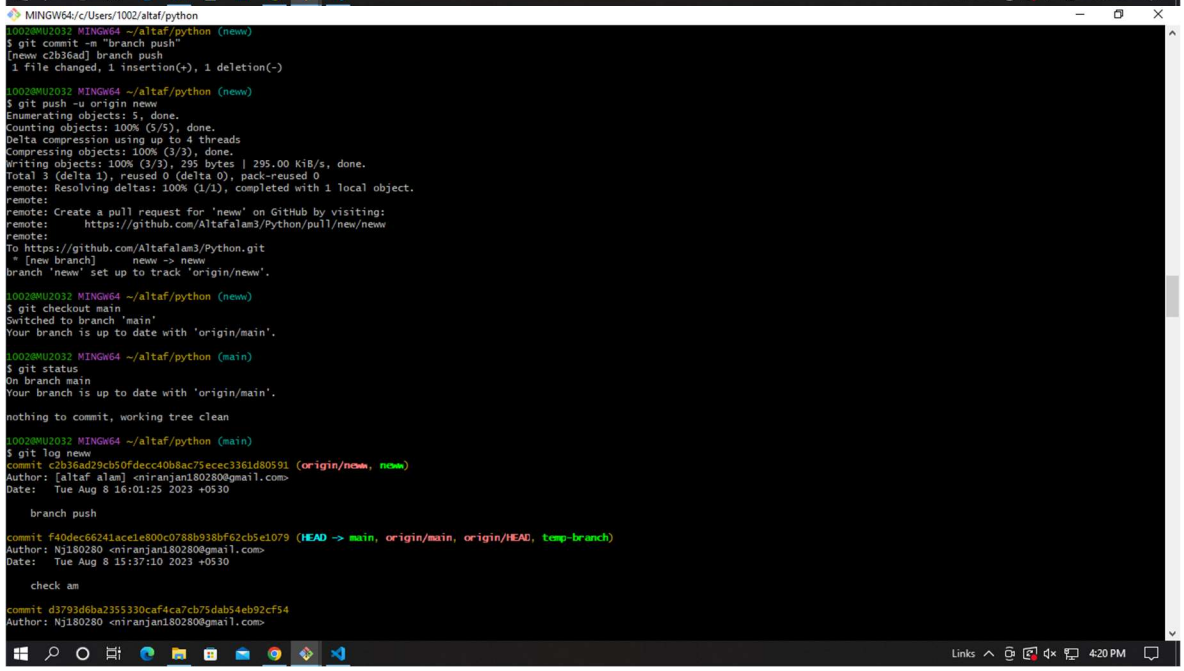

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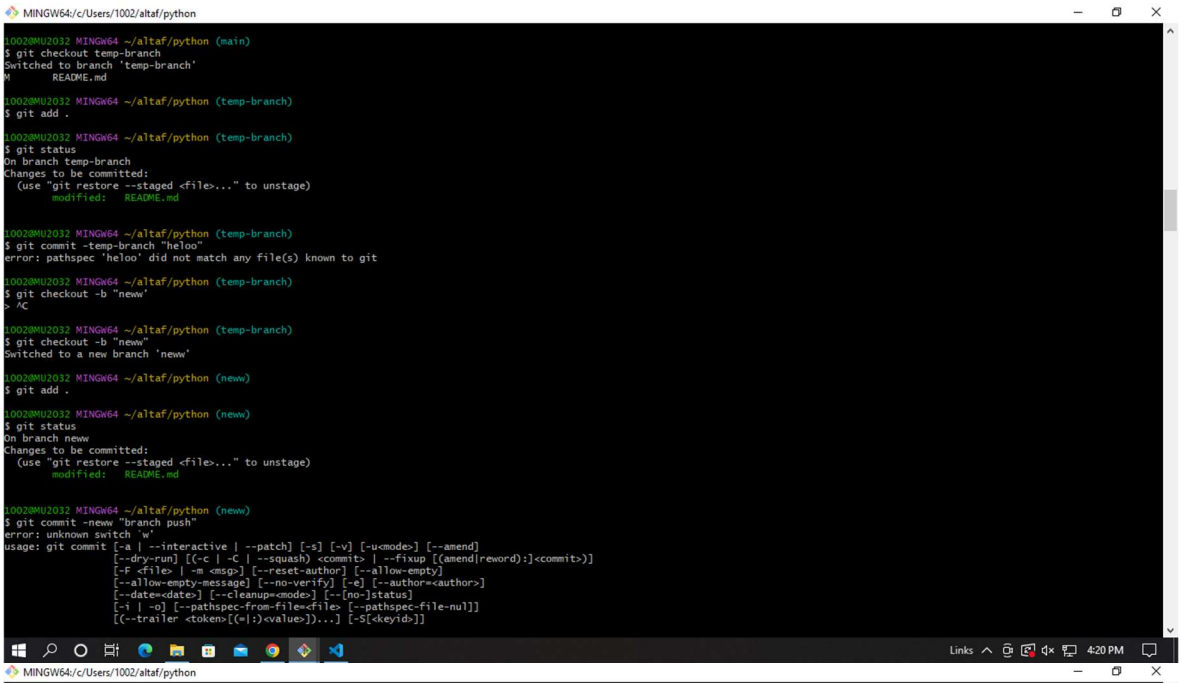

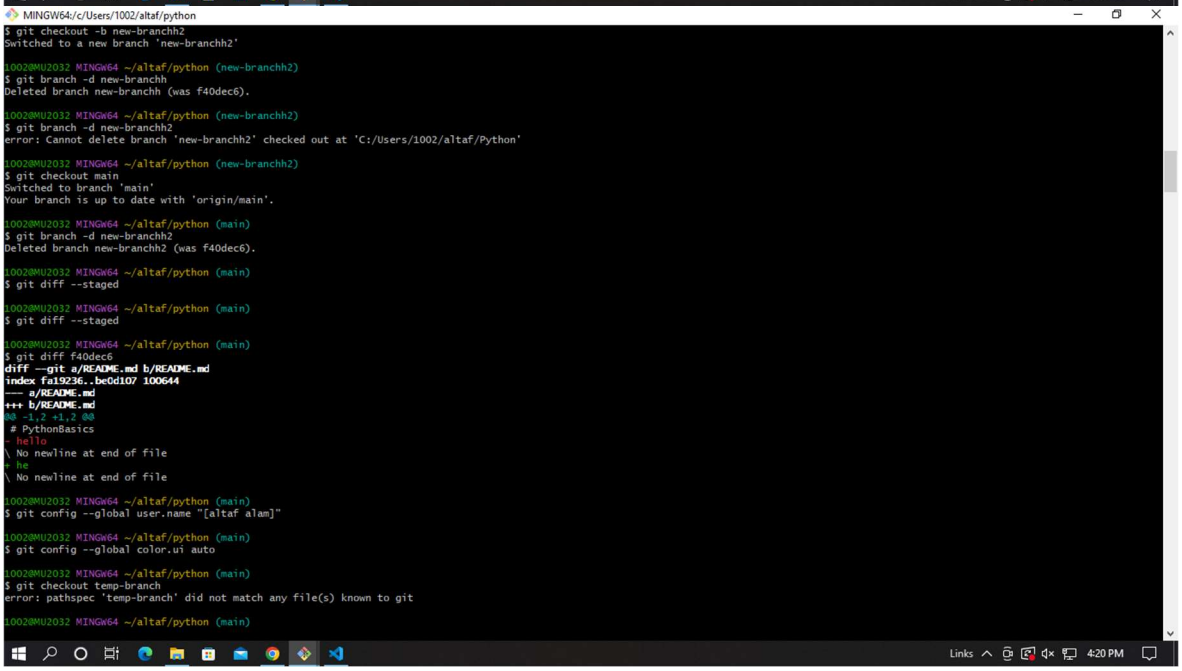

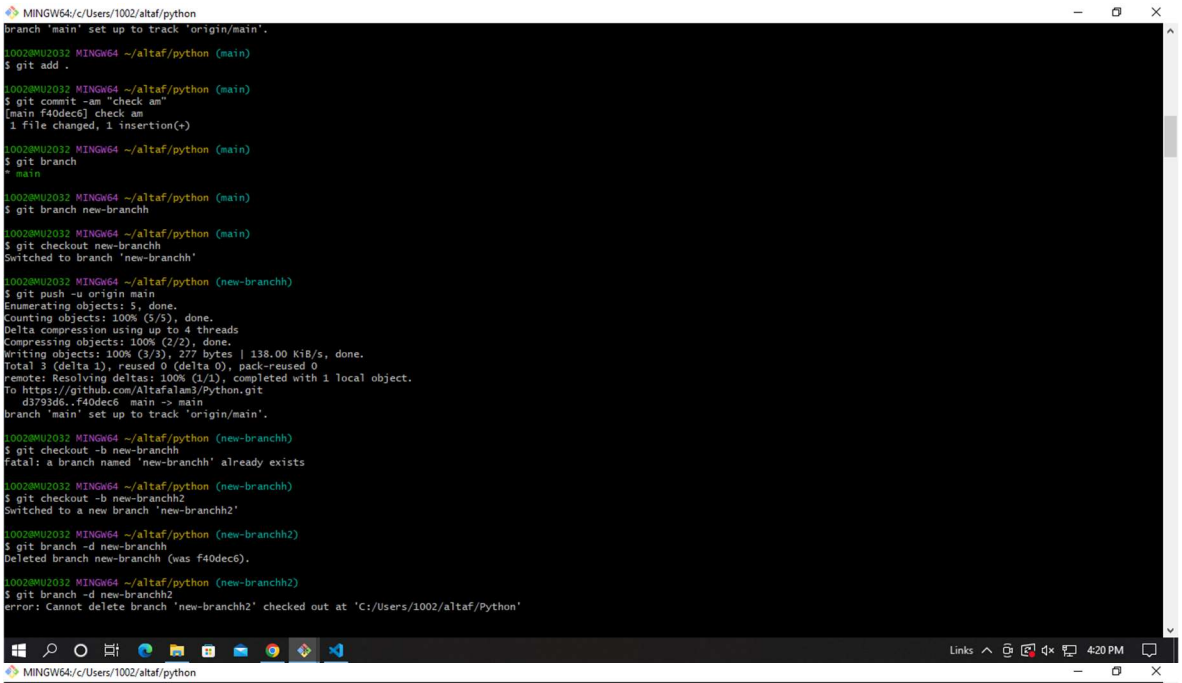

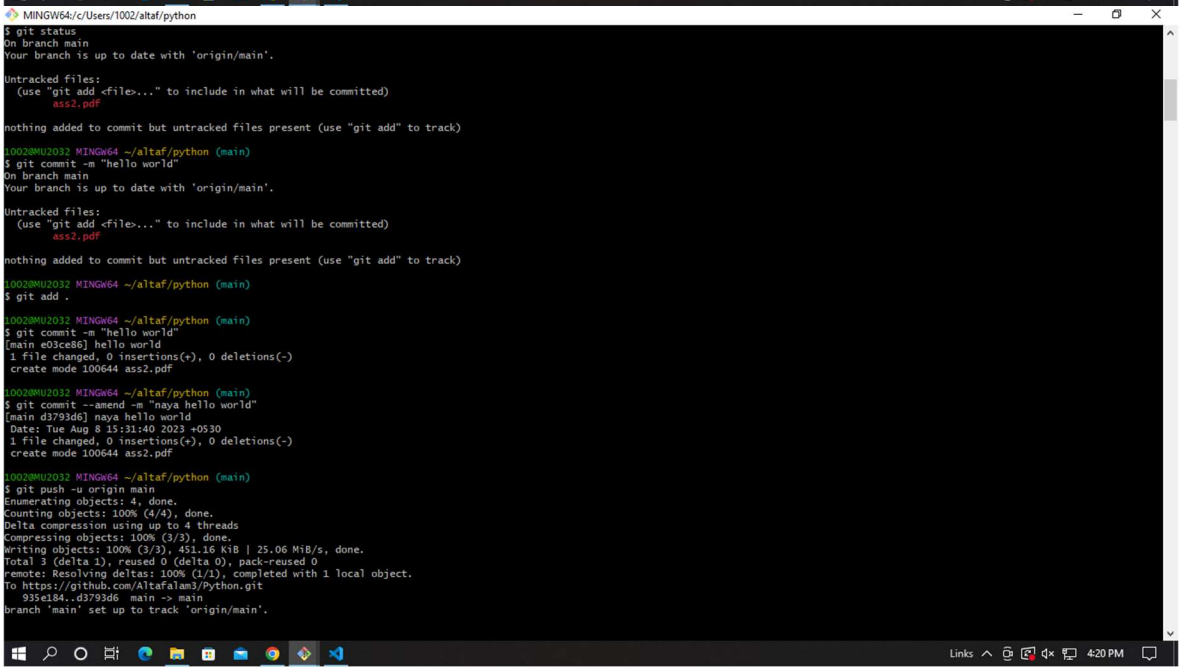

Conclusion: We successfully understood and executed git commands.

Lab Outcome: LO1- To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements.

LO2- To obtain complete knowledge of the “version control system” to effectively track changes augmented with Git and GitHub.