Assignment -1

Text Processing and Automation - Write a bash script that uses grep, sed, and awk to list all login attemtps to a linux system, extract attempted user and error messages to a separate file.

```
student@student-virtual-machine:~$ sudo grep -E "Accepted password|Accepted
      publickey|Failed passwod|/var/log/auth.log  \
      | sed 's/invalid user //g" \
      | awk '
           /Accepted/ {
              status="SUCCESS"
              user=$4
           }  ip=$6
           /Failed/ {
              status="FAILED"
              user=$4
           }  ip=$6
        } printf"%-7s %-15s $s\n", status, user, ip '"
      }  output.txt

student@student-virtual-machine:~$ cat output.txt
SUCCESS   student       192.168.1.10    192.168.1.10
FAILED    student       203.0.113.45    203.0.113.45
FAILED    admin         198.51.100.22   198.51.100.22
SUCCESS   student       192.168.1.15    192.168.1.15
FAILED    test          203.0.113.89    203.0.113.89
```

Assignment-2

Version Control with Git - Initialize a new Git repository, simulate making changes to a project by adding text files, and commit those changes. Create a new branch, make further changes in this branch, and merge it back to the main branch, resolving a simulated merge conflict.

#created a new git local repository and pushed changes to the remote repository.

```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent
$ git init
Initialized empty Git repository in E:/rag_agent/.git/

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git add .
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git commit -m "Initial commit"
[main (root-commit) 6186653] Initial commit
 20 files changed, 1070 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 agents/__init__.py
 create mode 100644 agents/rag_agent.py
 create mode 100644 data/original.txt
 create mode 100644 data/sample.txt
 create mode 100644 data/validated.txt
 create mode 100644 groq_agent/__init__.py
 create mode 100644 groq_agent/agent.py
 create mode 100644 main.py
 create mode 100644 rag_agents/__init__.py
 create mode 100644 rag_agents/agent.py
 create mode 100644 requirements.txt
 create mode 100644 sequential_agent/__init__.py
 create mode 100644 sequential_agent/agent.py
 create mode 100644 sequential_agent/groq.py
 create mode 100644 sequential_agent/subagents/__init__.py
 create mode 100644 sequential_agent/subagents/file_processor/__init__.py
 create mode 100644 sequential_agent/subagents/file_processor/agent.py
 create mode 100644 sequential_agent/subagents/validator/__init__.py
 create mode 100644 sequential_agent/subagents/validator/agent.py
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git push -u origin main
Enumerating objects: 29, done.
Counting objects: 100% (29/29), done.
Delta compression using up to 8 threads
Compressing objects: 100% (22/22), done.
Writing objects: 100% (29/29), 14.07 KiB | 1.41 MiB/s, done.
Total 29 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/Sarabesh-13/Rag_Agent.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
```

#now create another branch and made some changes, then merged changes to the main branch also.

```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git branch -M test

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git checkout test
Already on 'test'
Your branch is up to date with 'origin/main'.

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git fetch

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git status
On branch test
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        README.md

nothing added to commit but untracked files present (use "git add" to track)

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git branch
* test
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git add README.md

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git commit -m "added README.md file in test branch"
[test f504e6d] added README.md file in test branch
 1 file changed, 20 insertions(+)
 create mode 100644 README.md

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (test)
$ git push -u origin test
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 869 bytes | 869.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
remote:
remote: Create a pull request for 'test' on GitHub by visiting:
remote:      https://github.com/Sarabesh-13/Rag_Agent/pull/new/test
remote:
To https://github.com/Sarabesh-13/Rag_Agent.git
 * [new branch]      test -> test
branch 'test' set up to track 'origin/test'.
```

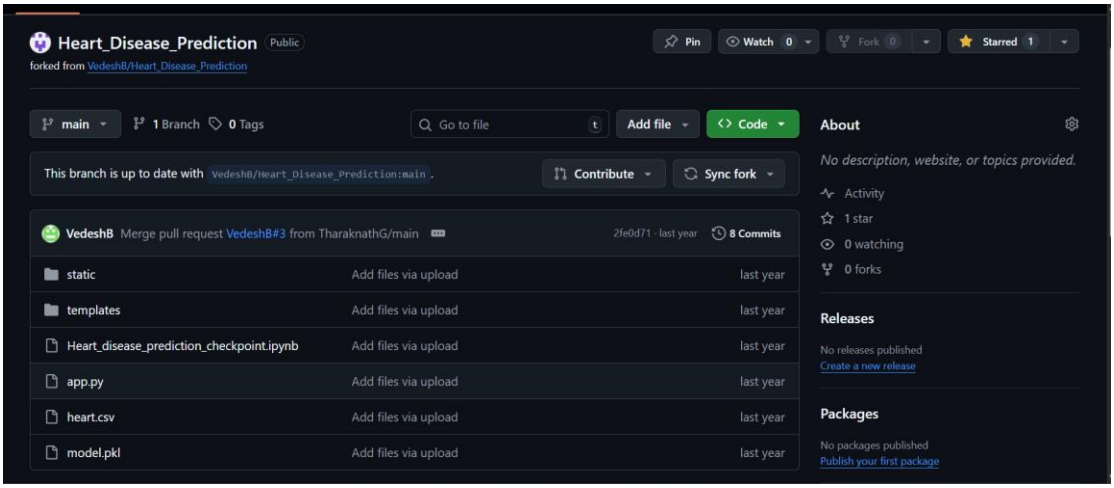
```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git merge test
Already up to date.

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git status
On branch main
nothing to commit, working tree clean

HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git commit -m "merged changes from test with main branch"
On branch main
nothing to commit, working tree clean
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/rag_agent (main)
$ git push -u origin main
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Sarabesh-13/Rag_Agent.git
   6186653..f504e6d  main -> main
branch 'main' set up to track 'origin/main'.
```

Assignment-3

Collaborative Development Using Git - Fork an existing repository (this can be a simulated action if no actual repository is available), clone it locally, and demonstrate managing updates from the original repository. Create a pull request to the original repository with changes made in the forked repository, and outline a simple code review process.

#fork an existing repository



#cloning forked repository

This forked repository has link to the original repository we can make pull request to original repository and keep forked repo up to date.

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction
$ git clone git@github.com:Sarabesh-13/Heart_Disease_Prediction.git
Cloning into 'Heart_Disease_Prediction'...
remote: Enumerating objects: 27, done.
remote: Counting objects: 100% (27/27), done.
remote: Compressing objects: 100% (25/25), done.
remote: Total 27 (delta 8), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (27/27), 212.96 KiB | 356.00 KiB/s, done.
Resolving deltas: 100% (8/8), done.
```

#add original repository as upstream

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git remote add upstream https://github.com/VedeshB/Heart_Disease_Prediction.git
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git remote -v
origin  git@github.com:Sarabesh-13/Heart_Disease_Prediction.git (fetch)
origin  git@github.com:Sarabesh-13/Heart_Disease_Prediction.git (push)
upstream        https://github.com/VedeshB/Heart_Disease_Prediction.git (fetch)
upstream        https://github.com/VedeshB/Heart_Disease_Prediction.git (push)
```

#make changes to fork repository

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        README.md

nothing added to commit but untracked files present (use "git add" to track)

HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git add .

HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git commit -m "first commit in forked repository"
[main 5e7b2c1] first commit in forked repository
 1 file changed, 48 insertions(+)
 create mode 100644 README.md
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git push -u origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.33 KiB | 1.33 MiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:Sarabesh-13/Heart_Disease_Prediction.git
   2fe0d71..5e7b2c1  main -> main
branch 'main' set up to track 'origin/main'.
```

#manages changes from original repository

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git fetch upstream
From https://github.com/VedeshB/Heart_Disease_Prediction
 * [new branch]      main       -> upstream/main
```

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git merge upstream/main
Already up to date.
```

#create pull request to original repository

```
HP@DESKTOP-N0ID8BU MINGW64 /e/heart_disease_prediction/Heart_Disease_Prediction (main)
$ git merge upstream/main
Already up to date.
```

#simple outline code review process

1) Forked repository in GitHub. which has access to make only pull request original repository and makes the forked repo up to date with the upstream/original repository,
2) Clone the forked repo and make some changes and push to main branch .these changes are reflected to only forked repository.
3) We will get to know as updates if there is a new changes in main branch of original repository. At that time we can first use git fetch to know about changes to original/main repo and then make pull request to origin main branch and make push request to remote fork main branch to keep code up to date.