

## Assignment: II

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Question 2,

a) The script for the branching in the question is as follows:

Initialisation of the Git Repo with required branches

```
-> mkdir q2a
-> cd q2a
-> git init
-> A[0]='11940010'
-> A[1]='11940230'
-> A[2]='11941140'
-> A[3]='master'
-> git init
```

Making the dummy commits and required branches

```
-> echo 'dummy'>A
-> git add A
-> git commit -m"dummycommit"
-> echo 'dummy'>A
-> git add A
-> git commit -allow-empty -m"dummycommit"
-> git branch A[0]
-> git branch A[1]
-> git branch A[2]
```

Doing the commits in a random manner on the branches

```
-> echo "Committing randomly in different branches,this will take some time"
-> for((i=0;i<20;i++)); do
-> sleep 1.2s
-> ind=$((RANDOM modulo 4))
-> git checkout A[ind]
-> git add A
```

-> git commit -allow-empty -m "A is added"  
-> done

On completion of all the commits, obtaining the graph of the repo, neglecting blobs and trees

-> git graph --nodes clhrsagu

The git-graph obtained after all the commits is as follows:

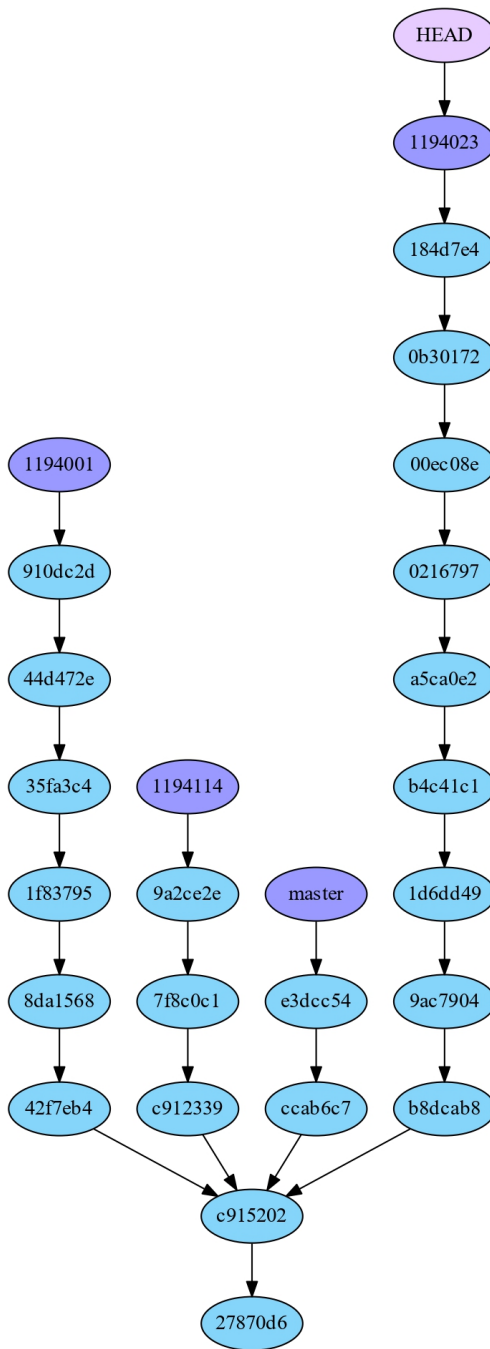


Figure 1.1: Git-Graph after random sequence of commits

b) Now, we find the branch with the latest commit and then merging of all the branches with this using a for loop. The script for that is as follows:

Initialisation of the repo and the required variables,

```
-> git init
-> branch[0]="master"
-> branch[1]="11940010"
-> branch[2]="11940230"
-> branch[3]="11941140"
```

Find the branch which has the latest commit

```
-> lastcommitbranch=(git branch --sort =-committerdate -- awk 'NR ==1 ' -- awk 'print 2')
-> echo lastcommitbranch
```

Merging all the branches to it , using the loop

```
-> for (( i=0; i<4; i++)) ; do
-> if [[ lastcommitbranch != branch[i] ]]; then
```

Checking the branch which is merged

```
-> echo branch[i]
-> git merge branch[i] -m" merging "
```

Obtaining the incremental git-graphs after each merge, neglecting the blobs and trees,

```
-> git-graph --nodes clhrsagu
-> echo "Press enter to continue merging"
-> read en
-> fi
-> done
```

The incremental git-graphs are shown below:

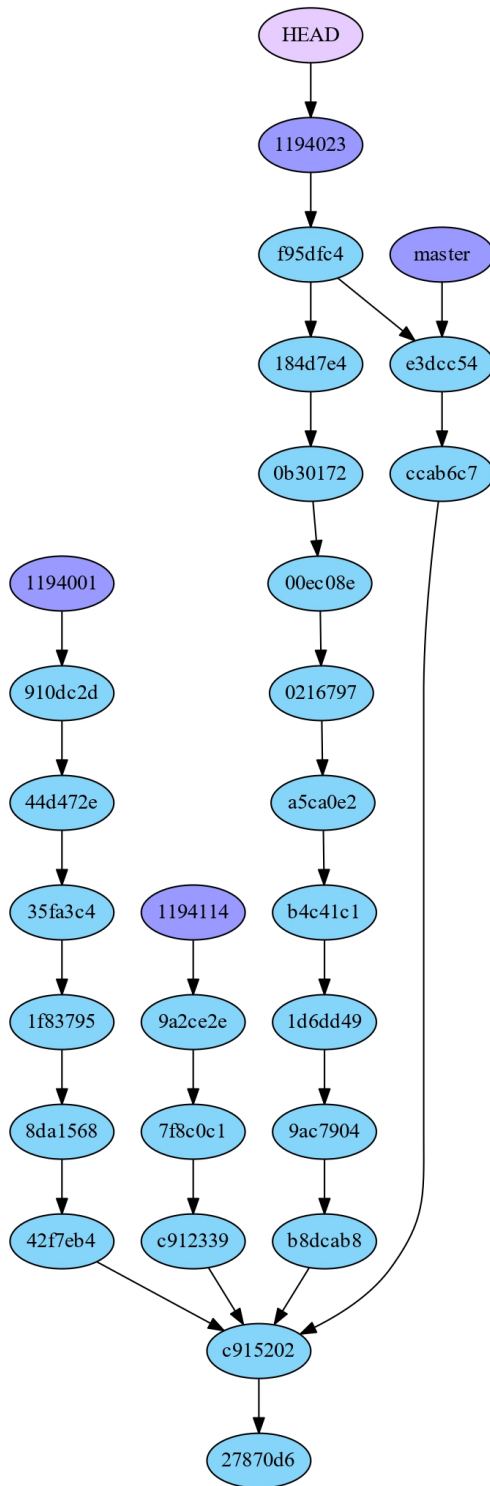


Figure 1.2: First Branch Merge

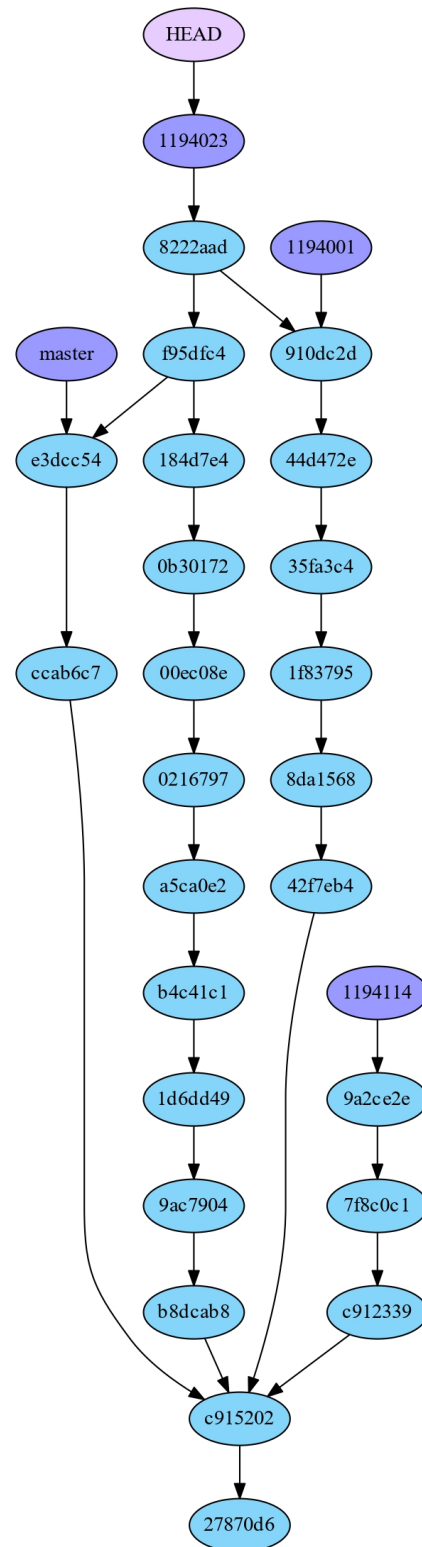


Figure 1.3: Second Branch Merge

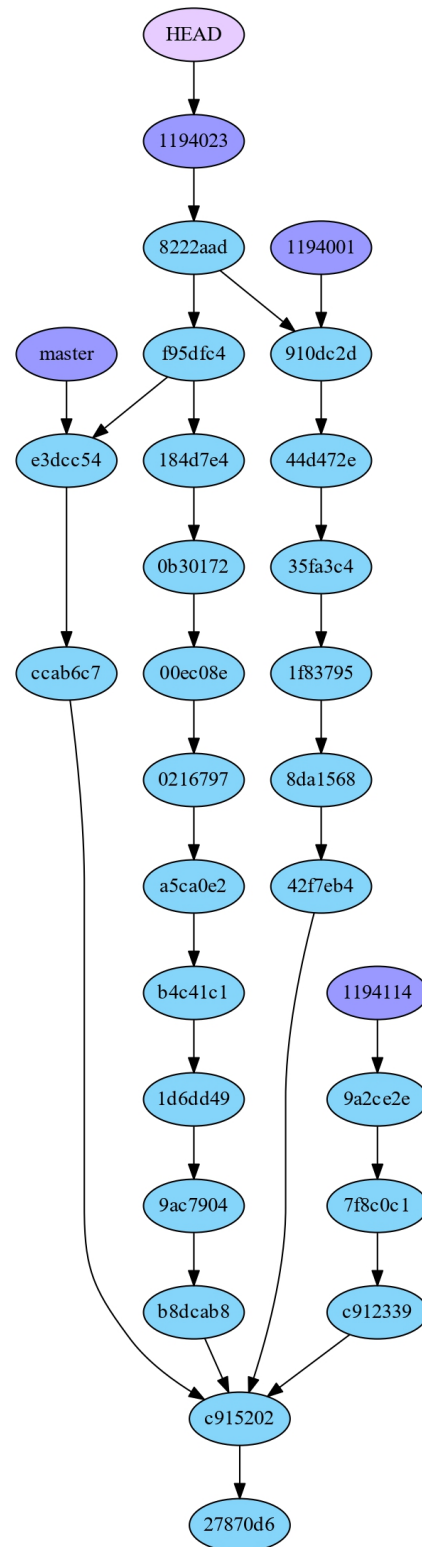


Figure 1.4: Third Branch Merge

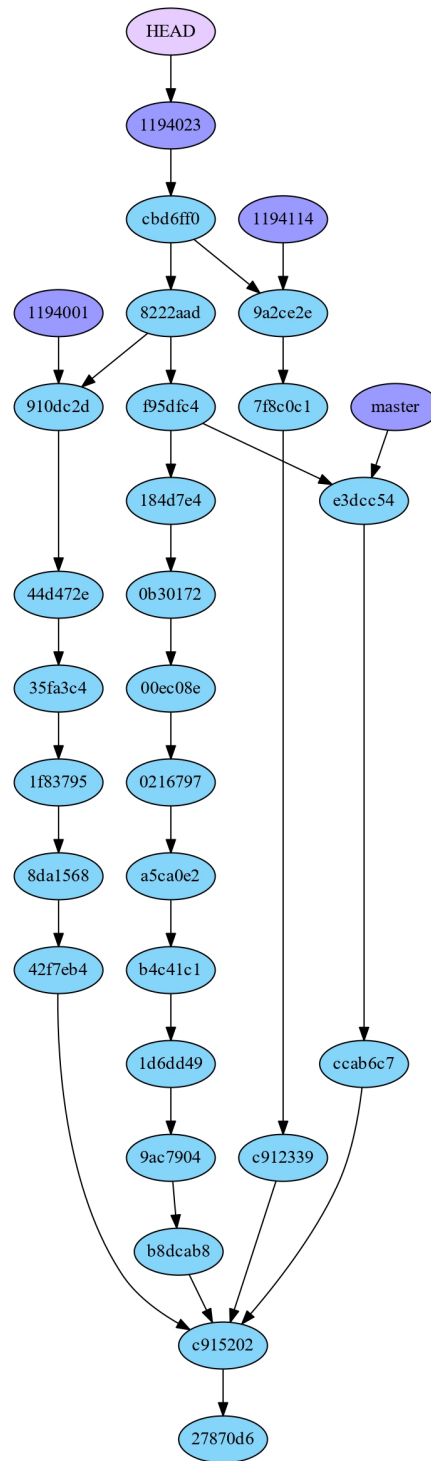


Figure 1.5: Fourth Branch Merge